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# FLOOD AND COASTAL STORM DAMAGE REDUCTION

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## Program Assessment

### Flood Damage Reduction

Program

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This program aims to reduce flood damage by constructing levees, floodwalls and other structural and non-structural projects. The Corps of Engineers shares the cost of these projects with states and local communities. The Corps also assists states in floodplain management and maintains large federally owned dams and levees.

#### NOT PERFORMING

#### Results Not Demonstrated

- **The program lacks information on how completed flood damage reduction projects help reduce the Nation's overall flood damages on an annual or long-term basis.** The Corps can estimate, however, the economic and environmental return from flood projects under design or construction, and these estimates are used to set funding priorities for the program's budget each year.
- **Greater coordination is needed among this program, FEMA mitigation programs, the National Flood Insurance Program and states and local communities that set floodplain management policies.** The lack of coordination between these entities can result in increased or unaddressed risk to communities in flood hazard areas.
- **The program's state and local partners often do not make citizens sufficiently aware of their actual flood risks by publicizing regional flood plain management plans to reduce the impact of future flood events in the project area.** Anecdotal evidence also indicates that state and local partners may not be properly maintaining completed flood projects to ensure the level of protection over time.

Rating

What This Rating Means



**We are taking the following actions to improve the performance of the program:**

**Improvement Plan**

About Improvement Plans

- Collecting information on the economic and other benefits from completed projects that have reduced hurricane and storm damages. Additional funding may be needed for this data collection effort.
- Proposing funds in the budget for the initial sand placement, and long-term renourishment only if it is necessary to mitigate the impacts of operating and maintaining a Federal navigation project.
- Conducting two pilot projects to promote improved coordination among Federal and non-Federal programs that address damages from floods, storms and hurricanes.

**Learn More**

- **Assessment Details, Funding, and Improvement Plan.**
- How all Federal programs are assessed.
- Learn more about Coastal Storm Damage Reduction.

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Coastal Storm Damage Reduction

## Program Assessment

### Coastal Storm Damage Reduction

Program

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The program aims to protect lives and reduce damages resulting from hurricanes and storms. The Army Corps of Engineers partners with coastal communities to share the cost of placing sand on beaches or building structures such as jetties or groins. Most projects involve regular, recurring sand placement for up to 50 years.

#### NOT PERFORMING

#### Results Not Demonstrated

- **The program lacks necessary information on its success in reducing damages from hurricanes and storms in communities where the Corps has built projects or placed sand on beaches.** Additional funding may be needed to collect such performance information for completed projects. At this time only anecdotal evidence is available on the program's success.
- **The Administration does not support Federal funding for long-term beach renourishment (for up to 50 years); it supports a scaled back Federal role instead.** The Administration supports Federal funding for the initial placement of sand on beaches after which states and local communities would finance the long-term, periodic beach renourishment.
- **Greater coordination may be needed between the Army Corps of Engineers and other Federal, state and local entities to help prevent unwise future development in coastal communities, including those where the Corps has partnered to provide long-term beach renourishment.**

Rating

What This Rating Means



**We are taking the following actions to improve the performance of the program:**

**Improvement Plan**

About Improvement Plans

- Collecting performance information on the actual contribution of completed flood damage reduction projects toward reducing the Nation's overall flood damages.
- Conducting two pilot projects to improve coordination among Federal and non-Federal programs involved in reducing flood damages.
- Funding an inventory of the Nation's flood and storm damage reduction infrastructure and development of a methodology for assessing the risk and level of protection provided from completed projects.

**Learn More**

- **Assessment Details, Funding, and Improvement Plan.**
- How all Federal programs are assessed.
- Learn more about Flood Damage Reduction.

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# INVESTIGATIONS

FLOOD AND COASTAL STORM DAMAGE REDUCTION  
INVESTIGATIONS  
GREAT LAKES AND OHIO RIVER DIVISION

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Great Lakes and Ohio River Division

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Davidson County, Mill Creek Watershed, TN Nashville District	1,179,000	283,000	266,000	223,000	150,000	257,000	0

Mill Creek is a major tributary of the Cumberland River in southeastern Davidson County and north eastern Williamson County. The Mill Creek watershed is 108 square miles and home to the federally listed endangered Nashville Crayfish. A recurrence of the May 1979 flood of record would cause an estimated \$93M in flood damages today. Over 1,000 homes and businesses are subject to flooding. Corrective measures evaluated during the reconnaissance study include floodway evacuation combined with wetland restoration and enhancement. These outputs will be further refined during the feasibility phase. The sponsor is the Metropolitan Government of Nashville and Davidson County. The sponsor understands its cost sharing responsibilities and has expressed an interest in cost sharing the feasibility phase, by letter of intent dated March 2001. The Feasibility Cost Sharing Agreement was executed on April 24, 2003.

FY 2007 funds will be used to continue the feasibility study.

FY 2008 funds will be used to complete the feasibility phase. The estimated cost of the feasibility phase is \$2,131,460, which is to be shared on a 50-50 basis by Federal and non-Federal interests. A summary of study cost sharing follows:

Total Estimated Study Cost	\$2,245,000
Reconnaissance Phase (Federal)	113,000
Feasibility Phase (Federal)	1,066,000
Feasibility Phase (Non-Federal)	1,066,000

The reconnaissance phase was completed in April 2003. The completion date for the feasibility study is September 2008.

FLOOD AND COASTAL STORM DAMAGE REDUCTION  
INVESTIGATIONS  
MISSISSIPPI VALLEY DIVISION

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Mississippi Valley Division

Project	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation for FY 2005 \$	Allocation for FY 2006 \$	Allocation for FY 2007 \$	Allocation Requested for FY 2008 \$	Additional to Complete After FY 2008 \$
LOUISIANA							
Calcasieu River Basin, LA New Orleans District	1,200,000	185,000	76,000	297,000	247,000 *	395,000	0

The study area is located in southwestern Louisiana and includes Calcasieu Parish and the southwest portion of the City of Lake Charles. Development in the study area is subject to repetitive flooding particularly in southwest Lake Charles located in the southern portion of the Calcasieu Basin. Headwater flooding and backwater flooding from the Calcasieu River occurs within the study area. Fish and wildlife habitat has been lost to development in the upper basin and to erosion, subsidence, saltwater intrusion, and development in the estuarine areas of the lower basin. The study is addressing the feasibility of measures to reduce flooding and restore fish and wildlife habitat in the study area. The Calcasieu Parish Police Jury is the cost-sharing sponsor for the feasibility phase. The feasibility cost sharing agreement was signed on 3 May 2005. The anticipated outputs of flood damage prevention and environmental restoration are in accord with Administration policy.

Fiscal Year 2007 funds are being used to continue feasibility by completing the hydraulics and hydrology models for base and plan conditions, continuing plan formulation and public involvement. In addition, an economic analysis including a structural inventory, feasibility level design of alternatives, environmental compliance documentation, and a real estate plan will be initiated.

Funds requested for Fiscal Year 2008 will be used to complete the feasibility study which includes drafting the report, preparation of the Feasibility Cost Sharing Agreement and the Project Management Plan and submittal to higher authority for review and approval.

The preliminary estimated cost of the feasibility phase is \$2,000,000 and is being shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of the study cost sharing is as follows:

Total Estimated Study Cost	\$2,150,000
Reconnaissance Phase (Federal)	200,000
Feasibility Phase (Federal)	1,000,000
Feasibility Phase (Non-Federal)	1,000,000

The reconnaissance phase was completed in May 2005. The feasibility study completion date is scheduled for September 2008.

\* Assumed allocation. Final, actual allocations yet to be determined.

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Mississippi Valley Division

Project	Total Estimated Federal Cost \$	Allocation To FY 2004 \$	Allocation for FY 2005 \$	Allocation for FY 2006 \$	Allocation for FY 2007 \$	Allocation Requested for FY 2008 \$	Additional to Complete After FY 2008 \$
MISSOURI							
St. Louis Flood Protection, MO St. Louis District	1,684,000	718,000	145,000	297,000	243,000 *	281,000	0

The St. Louis Flood Protection project area is located in St. Louis, Missouri, on the right bank of the Mississippi River between Miles 176.3 and 187.2 above the mouth of the Ohio River. Approximately 3,160 acres of industrial and commercial development are protected from Mississippi River flooding by the completed St. Louis Flood Protection Project. During the Great Flood of 1993, which was less than the project's design, a short section of the project failed and only quick, extensive emergency actions by the City of St. Louis, Metropolitan St. Louis Sewer District, and Corps of Engineers prevented a large portion of the City of St. Louis from flooding. Significant potential problems identified with the project during 1993 included under seepage, foundation piping, pipe crossings, inadequate toe drains, and inadequate relief wells. Based on the Reconnaissance Report dated February 1999, preconstruction engineering and design was resumed and a final cost-shared Reconstruction Evaluation Report was completed in July 2005. The reevaluation shows that the original project design did not include adequate closure structures and underseepage protection. The recommended project, estimated to cost \$15,615,000 (Federal \$10,150,000 and non-Federal \$5,465,000), includes replacing swing gates at 20 closure structures, permanently closing gates at 13 closure structures, installing 70 new relief wells, replacing 103 existing relief wells needed to improve underseepage control, and planning bottomland hardwoods to mitigate for 0.1 acres of impact. The average annual benefits amount to \$5,863,000, all flood control. The benefit-cost ratio is 4.0 to 1 at 7 percent and the remaining benefit remaining cost ratio is 4.2 to 1 at 7 percent. The local sponsor, City of St. Louis, understands and is ready to sign a design agreement and have funds available to finance the PED portion of the design of a project. PED will ultimately be cost shared at the rate for the project to be constructed but will be financed through the PED period at 25 percent non-Federal. Any adjustments that may be necessary to bring the non-Federal contribution in line with the project cost sharing will be accomplished in the first year of construction.

Total Estimated Preconstruction Engineering and Design Costs	\$2,245,000	Total Estimated Preconstruction Engineering and Design Costs	\$2,245,000
Initial Federal Share	1,684,000	Ultimate Federal Share	1,459,000
Initial Non-Federal Share	561,000	Ultimate Non-Federal Share	786,000

The project is authorized for construction by Public Law 84-256, 9 August 1955. Cost sharing will be 65 percent Federal and 35 percent non-Federal in accordance with current Administration policy.

Fiscal Year 2007 funds are being utilized to continue plans and specifications for the relief wells.

Funds requested in Fiscal Year 2008 will be used to continue plans and specifications for the relief wells. Completion of preconstruction engineering and design is scheduled for September 2008.

\* Assumed allocation. Final, actual allocations yet to be determined.

FLOOD AND COASTAL STORM DAMAGE REDUCTION  
INVESTIGATIONS  
NORTH ATLANTIC DIVISION



APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
SURVEYS – (Flood and Storm Damage Reduction)							
NEW JERSEY							
New Jersey Shore Protection, Hereford to Cape May Inlet, NJ Philadelphia District	1,417,000	200,000	365,000	396,000	200,000 *	256,000	0

The study area is located in Cape May County along New Jersey's last coastal barrier island between Hereford Inlet and Cape May Inlet. This area includes the City of North Wildwood, Wildwood, Wildwood Crest, and a small section of Lower Township. Coastal storms and tidal surges cause major damages to businesses, residences, and small marinas in these towns due to the low-lying topography of the beaches and lack of a dune system. Accretion of the shoreline in Wildwood and Wildwood Crest is choking off a sewer outfall pipe system which is increasing the dredging maintenance cost for these towns to keep the system clear of sediment. Moreover, along the southern end of the barrier island this accretion has also increased the dredging requirements for the Cape May Inlet Federal navigation channel. This channel is used by the U.S. Coast Guard Receiving Center. The September 1990 study for the New Jersey Shore recommended there is a Federal interest to proceed to further feasibility level studies for potential flood and coastal storm damage reduction projects along the Atlantic coast of New Jersey, which included the Hereford Inlet to Cape May Inlet area.

The feasibility phase is evaluating alternatives for flood and storm damage reduction measures, including sand bypassing measures. In addition, the feasibility study is evaluating opportunities for ecosystem restoration in the back-bay areas to improve fish and wildlife habitats and restoring wetlands. The feasibility Cost-Sharing agreement was executed in September 2002 with the New Jersey Department of Environmental Protection.

Fiscal Year 2006 funds were used to continue the feasibility phase of the study including data collection economic analysis and plan formulation.

Fiscal Year 2007 funds are being used to continue the feasibility phase of the study including; data collection, economic analysis, hydraulic and hydrological investigations, and plan formulation.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
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SURVEYS – (Flood and Storm Damage Reduction)

NEW JERSEY

New Jersey Shore Protection, Hereford to Cape May Inlet, NJ  
Philadelphia District

Fiscal Year 2008 funds will be used to complete the feasibility study including; selection of the recommended project plan and submission of the final report in September 2008.

The estimated cost of the feasibility phase is \$2,804,000, which is to be cost-shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of the study cost sharing is as follows:

Total Estimated Study Cost	\$2,819,000
Reconnaissance Phase (Federal)	15,000
Feasibility Phase (Federal)	1,402,000
Feasibility Phase (Non-Federal)	1,402,000

The reconnaissance phase was completed in September 2002. The feasibility study is scheduled for completion in September 2008.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.

FLOOD AND COASTAL STORM DAMAGE REDUCTION  
INVESTIGATIONS  
NORTHWESTERN DIVISION

FLOOD and COASTAL STORM DAMAGE REDUCTION, Fiscal Year 2008

NORTHWESTERN DIVISION

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional After FY 2008 \$
Cache La Poudre River Basin, Greeley & Vicinity, Colorado Omaha District	1,014,000	130,000	93,000	149,000	304,000*	338,000	0

The Cache La Poudre River is a left bank tributary to the South Platte River with headwaters in the Rocky Mountain National Park. The Cache La Poudre River basin, which drains 1,890 square miles and includes the City of Greeley, is subject to severe flooding caused by intense rainfall from localized thunderstorms in May through September. The potential for floods is also increased from May through July due to rapid snowmelt from the Rocky Mountains. The City of Greeley has experienced fifteen major floods over the past 100 years, most recently in 1999 and 1983. The 100-year discharge is 10,800 cfs at Greeley. The 1983 discharge was recorded at 8,200 cfs, however, the 1904 flood event discharge was estimated to be 18,000 cfs. Based upon a 1992 Section 205 report for the 2.7 mile reach of river through the City of Greeley, there were 245 residential and 131 commercial structures in the 100-year flood plain with a corresponding flood damage estimate of \$6,131,000. The expected annual damages for the studied area is \$725,600, based upon the 1992 report. No studies have been conducted recently to determine the estimated current value of structures and contents affected along this portion of the Cache La Poudre River or the estimated annual flood damages, however, the proposed study is intended to estimate these parameters. The City has incurred considerable expense over the last 20 years in replacing six bridges, which were constructed to pass the 100 year flood event, however, there are no existing flood control structures in the Greeley reach, leaving the City vulnerable to continued flooding. Another major concern in the basin is the degradation of habitat in the riparian corridor. As stated in a letter from the Colorado Department of Natural Resources, biologists describe the Cache La Poudre River that flows through Greeley as low elevation Cottonwood-Willow Riparian Habitat. This ecosystem provides the most important wildlife habitat in Colorado in terms of species diversity and abundance. The reach of the Cache La Poudre through Greeley has been designated as critical wildlife habitat by the Colorado Division of Wildlife, and is an indicator of the significance of the lower Cache La Poudre as key wildlife habitat. Low elevation riparian corridors are also among the most disturbed by humans, and the river as it flows through Greeley is a prime example of the impacts to low elevation river bottoms. Channel-ization, gravel mining, wetland destruction, water quality issues, and many other human influences have had a major impact on the quality of riparian habitat along the Cache La Poudre River and the wildlife dependent on this waterway.

The major goals of the study and subsequent project(s) would be to reduce the potential for property damage to existing development in the flood plain, reduce injuries and deaths caused by river flooding, and to restore riparian habitat in the river corridor. Another goal of the effort would be to provide recreational opportunities along the channel, including connection with a regional trail system and possible National Park Designation in the existing River Heritage Corridor. The Cache La Poudre River Floodway Improvement Program has been established by the City of Greeley to explore ways to protect property owners and adjacent areas from Cache La Poudre River flooding and to develop improved environmental habitat and recreational opportunities along the river corridor. In addition, flood protection would be of value to property owners who are currently participating in the FEMA Flood Insurance Program by reducing or eliminating the yearly insurance premiums.

The study area includes the flood plain from the confluence of the South Platte River, upstream approximately 17 miles (which includes the City of Greeley). A seven mile reach in the City will be the focus of flood damage reduction efforts. Solutions to alleviate flooding may include, channel improvements, acquiring floodway corridor areas, creating over-bank open space flood areas, and other measures. The report will also include recommendations to improve the riparian

\* Assumed allocation. Final, actual allocations yet to be determined.

habitat along the river corridor and the recreational opportunities. It is anticipated that the project Benefit Cost Ratio (BCR) will be at least 1.35, but most likely, much higher. The reconnaissance study identified a sponsor for the feasibility study and determined that there was a Federal interest. The study sponsor, the City of Greeley, provided a letter of intent on 28 May 2002 and signed the FCSA on 26 December 2005. There is support for this project from Senator Ken Salazar, Senator Wayne Allard, and Representative Marilyn Musgrave (CO-4). Other state and local agencies that have indicated a commitment are the town of Eaton, Colorado Department of Transportation, Colorado Division of Wildlife, City of Evans, Greeley Urban Renewal Authority, and the Poudre River Trail Corridor. There is also widespread support from commercial and residential property owners in the study reach.

The reconnaissance study was completed in April 2004 and was submitted to NWD for certification in July 2005, following scope and budget negotiations. The feasibility study began during the second quarter of FY 2006, following the signing of the FCSA in December 2005. FY 2006 efforts were concentrated on problem identification, refinement of the PMP and initiation of the ITR process.

The Fiscal Year 2007 funds are being used to continue the feasibility study. A principal objective of FY 2007 activity is to begin the plan formulation process, build on the existing public involvement activity and hold the Feasibility Scoping Meeting (FSM). Prior to this stage, initial condition and future condition models will be built, calibrated, and undergo ITR. Using the initial models, an initial flood damage reduction plan or plans will be formulated and documented. Preliminary designs and economic benefits will be analyzed and cost estimates prepared for the flood damage reduction methods. The initial ecosystem restoration plan for the Cache la Poudre River will be formulated and cost estimates prepared.

The funds requested for Fiscal Year 2008 will be used to complete the feasibility phase. This will entail responding to FSM comments, formulating alternative plans, evaluating the effects of the alternative plans, comparing the plans and selecting a recommended plan. Efforts will proceed towards obtaining approval for the recommended plan in order to initiate the Plans and Specifications Phase.

The preliminary cost of the feasibility phase is \$1,560,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. All or part of the non-Federal share may be in-kind services. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$1,794,000
Reconnaissance Phase (Federal)	234,000
Feasibility Phase (Federal)	780,000
Feasibility Phase (Non-Federal)	780,000

The feasibility study is scheduled for completion in September 2008.

FLOOD and COASTAL STORM DAMAGE REDUCTION, Fiscal Year 2008

NORTHWESTERN DIVISION

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional After FY 2008 \$
Kansas Citys, Missouri Kansas City District	5,083,000	3,034,000	464,000	495,000	450,000*	589,000	51,000

The feasibility study and decision documents for this project are organized into an interim and final feasibility report. The interim report established implementation milestones for Argentine Unit, Fairfax/Jersey Creek Unit, North Kansas City Unit, and the East Bottoms Unit. The final feasibility report will establish implementation milestones for the remaining work.

The existing Kansas Citys, Missouri and Kansas Local Protection Project consist of seven levee units along both banks of the Missouri and Kansas Rivers in the Kansas City Metropolitan area. The units extend over 50 miles in length along the rivers. The units have been complete and operating for 30 to 50 years. The Kansas Citys levee system protects about 32 square miles of mostly urban industrial, commercial and residential areas. More than 94,000 persons work in the protected area. The project protects approximately 4,800 significant structures and investment estimated at approximately \$16 billion. The protected area is vital to the entire Midwest economy and is a central rail, highway, and warehousing hub for the entire nation.

In July 1993, floodwaters from both the Missouri and Kansas Rivers were near overtopping several of the levee units. Underseepage concerns were also noted during this event. People, equipment, and aircraft were evacuated from areas behind the levee units. The project has prevented approximately \$8.5 billion in damages through 1996, of which \$3.9 billion was prevented in 1993 alone.

The project currently recommends under seepage, retaining wall, and floodwall modifications to improve the reliability of Missouri River units, and a levee raise and reliability improvements on the Argentine unit located on the Kansas River. The Final Feasibility Report will continue with analysis and recommendations for the Armourdale and Central Industrial District units respective to a lower Kansas River system solution and other minor improvements in various units. The Feasibility study is conducted under the authority of Sec 216 of the 1970 Flood Control Act for review of existing civil works. The local sponsors are the City of Kansas City, Missouri, the North Kansas City Levee District, the Kaw Valley Drainage District, and the Fairfax Drainage District. A FCSA/PMP was executed on 18 Sep 2000.

The funds for FY 2007 will be used to conduct plan formulation on Phase II feasibility study tasks.

The funds for FY 2008 will be used to continue work on the feasibility report. The estimated cost of the feasibility phase is \$8,466,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. All or part of the non-Federal share may be in-kind services. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$9,316,000
Reconnaissance Phase (Federal)	850,000
Feasibility Phase (Federal)	4,233,000
Feasibility Phase (Non-Federal)	4,233,000

The Interim feasibility study was completed Dec 2006. The schedule for completion of the final feasibility study is to be determined.

\* Assumed allocation. Final, actual allocations yet to be determined.

FLOOD and COASTAL STORM DAMAGE REDUCTION, Fiscal Year 2008

NORTHWESTERN DIVISION

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional After FY 2008 \$
Kansas Citys, Missouri Kansas City District	6,700,000	0	0	0	50,000*	100,000	6,550,000

The existing Kansas Citys, Missouri and Kansas Local Protection Project consist of seven levee units along both banks of the Missouri and Kansas Rivers in the Kansas City Metropolitan area. The Kansas Citys levee system protects about 32 square miles of mostly urban industrial, commercial and residential areas. More than 94,000 persons work in the protected area. Nearly 4,800 significant structures and roughly \$16 billion of investment are protected. The protected area is vital to the entire Midwest economy and is a central rail, highway, and warehousing hub for the entire nation. In July 1993, floodwaters from both the Missouri and Kansas Rivers were near overtopping several of the levee units. Underseepage concerns were also noted during this event. The project has prevented approximately \$8.5 billion in damages through 1996, of which \$3.9 billion was prevented in 1993 alone.

Implementation of recommendations from the interim feasibility report is estimated to cost \$79.4 million, with an estimated Federal cost of \$51.6 million and an estimated non-Federal cost of \$27.8 million. The average annual net NED benefits amount to \$36.2 million, all attributable to flood damage reduction. The benefit-cost ratio is 8.0:1 as reflected in the Chief's Report dated 19 Dec 2006. The local sponsors are the City of Kansas City, Missouri, the North Kansas City Levee District, the Kaw Valley Drainage District, and the Fairfax Drainage District, the evidence of support is signed letters of intent to move forward with implementation and continual verbal agreement. The sponsors have assured that they understand and are ready to sign a design agreement and have funds available to finance the PED portion of the design of the project. Preconstruction Engineering and Design will ultimately be cost shared at the rate for the project to be constructed but will be financed through the Preconstruction Engineering and Design period at 25 percent non-Federal. Any adjustments that may be necessary to bring the non-Federal contribution in line with the project cost sharing will be accomplished in the first year of construction. The cost sharing for the project will be 65 percent Federal and 35 percent non-Federal in accordance with the Water Resources Development Act of 1996.

Total Estimated Preconstruction Engineering and Design Costs	\$8,900,000	Total Estimated Preconstruction Engineering and Design Costs	\$8,900,000
Initial Federal Share	6,700,000	Ultimate Federal Share	5,800,000
Initial Non-Federal Share	2,200,000	Ultimate Non-Federal Share	3,100,000

The funds requested for FY 2007 will be used to develop scope and cost of design efforts in FY 2008.

The funds requested for FY 2008 will be used to continue PED.

\* Assumed allocation. Final, actual allocations yet to be determined.

FLOOD and COASTAL STORM DAMAGE REDUCTION, Fiscal Year 2008

NORTHWESTERN DIVISION

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional After FY 2008 \$
Lower Platte River and Tributaries, Nebraska Omaha District	3,171,000	2,695,000	157,000	59,000	130,000*	130,000	0

The authorized study area is in the eastern third of the state of Nebraska. The area includes the Lower Platte River from just below the confluence with the Wood River to the confluence with the Missouri River, the Loup River from Fullerton to the confluence with the Lower Platte, Salt Creek from above Lincoln to the confluence with the Lower Platte, and the Elkhorn River from Norfolk to the confluence with the Lower Platte. There are two major and seven minor tributaries to the Platte River in the study reach, 27 communities, and several environmentally sensitive areas yielding a complex study. This area, about 750 square miles, with over 6,000 square miles of contributing area, is subject to frequent, severe flooding that causes estimated annual damages of nearly \$14 million. Existing projects prevent about \$6 million a year in damages. Significant flooding occurred 7-21 March 1993, forcing the evacuation of 1,400 people from their homes. The flood killed two people and devastated road and bridge systems, public and private utilities, and farm equipment and facilities. Interstate 80 near Lincoln was closed for more than 24 hours. The water system for the city of Lincoln was seriously damaged; and there was damage in the towns of Norfolk, West Point, Scribner, Winslow, Nickerson, Arlington, Waterloo, Fullerton, Columbus, Schuyler, and Cedar Creek. Damages totaled over \$25 million. The declared disaster area included 14 counties. All damages occurred outside of the 13 existing flood protection projects in the basin. These projects prevented over \$18 million in damages for this event alone, and prevented an additional \$10 million in damages from the summer 1993 flooding.

The completed reconnaissance study reviewed hydrology of the Lower Platte River, including contributions from the Elkhorn and Loup Rivers; reexamined flood and related erosion and sedimentation damages, and formulated feasible alternative solutions. The Reconnaissance Report was completed in May 1996, recommending proceeding into the feasibility phase. The feasibility study was initiated with the signing of the Feasibility Cost Sharing Agreement in January 1998. Concurrence was received from HQUSACE to develop a scope of work that merges the Section 503 of WRDA 96, "Lower Platte River watershed, Nebraska," with this study. Section 503 provides authority for technical, planning, and design assistance to non-Federal interests for carrying out watershed management, restoration, and development projects.

The State of Nebraska, the Nebraska Natural Resources Commission (NNRC), the Lower Platte South Natural Resources District (NRD), Pappio-Missouri River NRD, and the Lower Platte North NRD are the cost sharing partners for the feasibility study and any resulting projects. The sponsors have provided \$1,427,000 in cash and \$1,044,000 in in-kind services through Fiscal Year 2006. Other stakeholders in this feasibility study effort include Nebraska State Department of Roads, Nebraska Land Trust, U.S. Geological Survey, U.S. Fish and Wildlife Service, and Metropolitan Utilities District.

The feasibility study will develop a web-based GIS database system that will display natural and manmade resources within the Lower Platte River watershed (Columbus, Nebraska to the confluence of the Platte and Missouri Rivers). The GIS mapping layers will illustrate watershed resources changes during the past 150 years. The developed GIS database system will be instrumental for evaluating past resource changes and for performing trend analysis of future resource changes which is essential for watershed management and restoration.

Fiscal Year 2007 funds are being used to continue the feasibility study. The FY 2007 effort involves digitizing and delineating natural and manmade resources within the study area from past aerial photography series. This effort will produce GIS database mapping layers.

\* Assumed allocation. Final, actual allocations yet to be determined.



The FY 2008 funding will be used to analyze the changes in the resources over the past 150 years that are reflected in the GIS database mapping layers, and perform a trend analysis to predict future resource changes within the watershed. A web-based GIS database system will be available for use by all stakeholders within the Lower Platte River study watershed. This is essential for future watershed management and restoration planning and implementation.

The preliminary estimated cost of the feasibility phase is \$5,030,000, which is to be shared on a 50/50 percent basis by Federal and non-Federal interests. All or part of the non-Federal share may be in-kind services. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$5,686,000
Reconnaissance Phase (Federal)	656,000
Feasibility Phase (Federal)	2,515,000
Feasibility Phase (Non-Federal)	2,515,000

The reconnaissance phase was completed in January 1998. The feasibility study is scheduled for completion in September 2008.

FLOOD and COASTAL STORM DAMAGE REDUCTION, Fiscal Year 2008

NORTHWESTERN DIVISION

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional After FY 2008 \$
Topeka, Kansas Kansas City District	2,025,000	0	0	0	100,000*	100,000	1,825,000

Construction of a flood protection project at Topeka was completed in Fiscal Year 1974 at a total Federal cost of \$21,175,000. The project has prevented an estimated \$229,280,000 in flood damages through December 1994, with an estimated \$57,792,000 prevented in July and August 1993. A Feasibility Study will be completed in FY 2007 with initiation of PED in FY 2008.

The recommended project to increase the reliability of the levee system is estimated to cost \$31.2 million, with an estimated Federal cost of \$20.3 million and an estimated non-Federal cost of \$10.9 million. The project includes floodwall, underseepage, foundation, and pump station modifications. Raising the levees is not included in the proposal. The average annual benefits are \$12.0 million, all for flood control. The benefit-cost ratio is 4.5:1 based upon the latest economic analysis, June 2006. The City of Topeka and the North Topeka Drainage District are the sponsors for the project. Latest evidence of sponsor support is the updated letter of support agreement dated May 2006. The sponsor has assured that they understand and are ready to sign a design agreement and have funds available to finance the PED portion of the design of the project. Preconstruction Engineering and Design will ultimately be cost shared at the rate for the project to be constructed but will be financed through the Preconstruction Engineering and Design period at 25 percent non-Federal. Any adjustments that may be necessary to bring the Non-Federal contribution in line with the project cost sharing will be accomplished in the first year of construction. The cost sharing for the project will be 65 percent Federal and 35 percent non-Federal in accordance with the Water Resources Development Act of 1996.

The funds requested for FY 2007 will be used to complete the feasibility phase and gain the Chief's Report approval.

The funds requested for FY 2008 will be used to continue PED.

Total Estimated Preconstruction Engineering and Design Costs	\$2,700,000	Total Estimated Preconstruction Engineering and Design Costs	\$2,700,000
Initial Federal Share	2,025,000	Ultimate Federal Share	1,755,000
Initial Non-Federal Share	675,000	Ultimate Non-Federal Share	945,000

The PED phase completion date is to be determined.

\* Assumed allocation. Final, actual allocations yet to be determined.

FLOOD AND COASTAL STORM DAMAGE REDUCTION  
INVESTIGATIONS  
PACIFIC OCEAN DIVISION

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Division: Pacific Ocean Division

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Hagatna River Flood Control, Guam Honolulu District	900,000	68,000	119,000	0	100,000 *	100,000	513,000

\* Assumed allocation. Final actual allocations are yet to be determined.

The Territory of Guam is located approximately 3,800 miles west of Honolulu. The Hagatna River drainage basin is situated on the west-central section of the island. The drainage basin is bordered by plateau lands of northern Guam to the east and northeast; the Pago River basin to the south; coastal lowlands to the north; and sloping mountainous lands of the southwest. The basin is drained by the Agana River, which flows northerly through the downtown area of Hagatna, the political, commercial and economic center for Guam. Flood damages in the Hagatna River drainage basin result from inadequate channel capacity and flat topography. The flood of record occurred in May 1976 with estimated damages of \$4,000,000. Presently, there are more than 440 structures in the Hagatna River floodplain. Previous investigations completed before 1989 demonstrated that a flood control project, providing a 100-year level of protection, could reduce average annual flood damages by more than \$730,000. The area to be protected comprises about 215 acres with a total estimated value of more than \$145,000,000 for land and improvements. A letter was received in May 2001 from the Government of Guam requesting the Corps assistance in reinvestigating the feasibility of the Hagatna River flood control project. The project was authorized under the Water Resources Development Act of 1986 (PL 99-662) as Agana River, but since that time, the project was subject to deauthorization. The Government of Guam was not in a position to implement the project at that time. Since then, conditions have changed allowing the Government of Guam to make this project a higher priority. The local sponsor fully understands the cost-sharing requirements of the study and is fully committed to active participation with the Corps of Engineers.

Authority to conduct this study is provided under Section 444 of the 1996 Water Resources Development Act (P.L. 104-303), as amended. The 905(b) report was approved by HQ in April 2004. The feasibility cost sharing agreement (FCSA) was executed in August 2005 and local sponsor funds were received in September 2006.

Fiscal Year 2007 funds will be used to initiate the feasibility study to include agency scoping meeting; perform topographic survey; and initiate hydrologic and environmental studies.

Fiscal Year 2008 funds will be used to continue the feasibility study to include economic evaluations, hydraulic design and additional environmental studies. The total estimated cost of the feasibility phase is \$1,200,000, to be shared on a 50-50 percent basis by Federal and non-Federal interests. Section 1156 of P.L. 99-662 provides for a waiver of local cost-sharing requirements up to \$200,000. A summary of cost sharing is as follows:

Total Estimated Study Cost	\$1,300,000	
Reconnaissance Phase (Federal)	100,000	
Feasibility Phase (Federal)	800,000	
Feasibility Phase (Non-Federal)	400,000	(Reflects \$200,000 waiver under Sec 1156 of PL 99-662)

The completion date of the feasibility study is yet to be determined.

5 February 2007

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Division: Pacific Ocean Division

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY2008 \$	Additional to Complete After FY 2008 \$
Yakutat Dam Flood Damage Reduction, AK Alaska District	4,370,000	75,000	548,000	297,000	300,000*	300,000	2,850,000

\* Assumed allocation. Final allocations yet to be determined.

The study area is located in and near Yakutat. Yakutat is isolated among the lowlands along the Gulf of Alaska, 225 miles northwest of Juneau and 220 miles southeast of Cordova. The reconnaissance study determined that there is a Federal interest in participating in a feasibility study to investigate potential flood damage reduction improvements to protect nearby resources, notably the airport and the world-class fishery resources of the Situk River watershed. Flooding may result from the continued advancement of the nearby Hubbard Glacier, the largest tidewater glacier in North America. In response to the study authority, the reconnaissance study was initiated in February of 2004. Local interests for this study include the City and Borough of Yakutat and the Alaska Department of Transportation and Public Facilities. Likely project collaborators include the U. S. Forest Service, the U.S. Geological Service, the Corps Cold Regions Research and Engineering Laboratory, and glaciologists from the University of Alaska Fairbanks and other academia.

Fiscal Year 2007 funds are being used to complete the reconnaissance phase and initiate the feasibility study. The study is being done in collaboration with the U.S. Forest Service and local and state interests.

Fiscal Year 2008 funds will be used to continue the watershed feasibility study. Economic, environmental and engineering data will be collected to evaluate potential measures that could be taken if Hubbard Glacier surges forward to block Russell Fiord. If the blockage continued for more than a few months, the lake level of Russell Fiord would rise to point where it would overflow into the Situk River causing major environmental and economic losses to the area. The fisheries of the Situk River are the economic lifeline of community. The community and the State requested the study be continued under authority of Section 117 of PL 108-447. The Assistant Secretary of the Army (Civil Works) approved the application of Section 117 cost sharing authority for the Yakutat feasibility study in January 2007 which allows the study to be conducted at full Federal cost.

A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$4,370,000
Reconnaissance Phase (Federal)	370,000
Feasibility Phase (Federal)	4,000,000
Feasibility Phase (Local)	0

Completion of the feasibility study is to be determined.

5 February 2007

FLOOD AND COASTAL STORM DAMAGE REDUCTION  
INVESTIGATIONS  
SOUTH ATLANTIC DIVISION

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008  
 Division: South Atlantic

Study/Project	Total Estimated Federal Cost \$	Allocation Prior to FY 2007 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
PRECONSTRUCTION ENGINEERING AND DESIGN (PED) ACTIVITIES - FDR					
Augusta/Richmond County Flood Reduction Savannah District	1,053,000	0	25,000*	750,000	278,000

\*Assumed allocation. Final, actual allocations yet to be determined.

The study area is Richmond County and areas contiguous to it in the northeastern part of the state of Georgia, comprising an area of approximately 326 square miles on the West Side of the Savannah River, and is part of the Savannah River Basin that comprises about 11,000 square miles. The economy of the study area is highly diversified, including industry, agriculture, and maritime. It is the trade center for 13 counties in Georgia and 5 counties in South Carolina. Because of the rapid growth of the unincorporated areas, considerable development has occurred in the flood plains of the streams in the study area. This commercial, industrial, and residential expansion in and adjacent to the flood plains in the Richmond County area has resulted in recent widespread flood problems occurring in many parts of the county. The 12 October 1990 flood resulted in the loss of four lives and thousands of people were left homeless. Damage estimates, including damages to water lines, roads and bridges, wastewater systems, a hospital, the Augusta National Golf Course, residences and automobiles, exceeded \$47 million. The feasibility study identified several flood control alternatives that are concentrated in three water basins in Richmond County: Rae's Creek, Rocky Creek and Augusta Canal. The recommended project, estimated to cost \$17.558M with an estimated Federal cost of \$9.523M and an estimated non-Federal cost of \$8.035M, includes construction of 2 flood detention basins, a levee, 2500 feet of ecosystem restoration, 2.6 miles of recreation trail, and a 750 foot weir; removal of five houses; elevation of four houses; and installation of four or more remote control valves for flood gates. The average annual benefits amount to \$2.6 million, all for flood control. The benefit-cost ratio is 4.5 to 1 at 5 1/8 percent based upon the latest economic analysis dated Oct 2006. The local sponsor, Augusta - Richmond County, understands and supports the requirements of PED cost sharing. PED will ultimately be cost shared at the rate for the project to be constructed but will be financed through the PED period at 25 percent non-Federal. Any adjustments that may be necessary to bring the non-Federal contribution in line with the project cost sharing will be accomplished in the first year of construction.

Total Estimated Preconstruction Engineering and Design Costs	1,404,000	Total Estimated Preconstruction Engineering and Design Costs	1,404,000
Initial Federal Share	1,053,000	Ultimate Federal Share	1,053,000
Initial Non-Federal Share	351,000	Ultimate Non-Federal Share	351,000

5 February 2007

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008  
Division: South Atlantic

Study/Project	Total Estimated Federal Cost \$	Allocation Prior to FY 2007 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
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PRECONSTRUCTION ENGINEERING AND DESIGN (PED) ACTIVITIES - FDR

The project is not yet authorized for construction. Fiscal Year 2007 funds are being utilized to initiate the PED phase for both Rocky Creek and Augusta Canal.

Fiscal Year 2008 funds will be used for completion of PED for both Rocky Creek and Augusta Canal and potentially to initiate PED for Rae's Creek. PED completion date is to be determined.

5 February 2007



APPROPRIATION TITLE: General Investigations, Fiscal Year 2008  
 Division: South Atlantic Division

Study/Project	Total Estimated Federal Cost \$	Allocation Prior to FY 2004 \$	Allocation FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional To Complete After FY 2008 \$
Edisto Island Charleston District	975,000	0	59,000	18,000	23,000	100,000*	218,000	557,000

\*Assumed allocation. Final, actual allocations yet to be determined.

Edisto Island is a barrier island approximately 4.5 miles in length and is located approximately 30 miles southwest of Charleston, South Carolina. The northeastern portion of Edisto Island is a state park, which includes camping sites and cabins, while the remainder of the island is primarily single-family residential. The Town of Edisto Beach has developed as a permanent and seasonal residential community with limited commercial development. One commercial structure and 220 residences have been affected by storm damage. It is estimated that seven structures along the 700 block could fail completely and other residential structures could incur damage from a hurricane. Opportunities exist at Edisto Island to analyze and develop a recommendation that will provide for reduction of hurricane and storm damages to the beachfront structures located within the Town of Edisto Beach. This would be realized through placement of material along the beachfront that would sustain a wider beach profile through this reach of the study area. Additionally, environmental restoration and protection opportunities exist through the entire study area, primarily for protection of the habitat that exists at Edisto Beach State Park and to provide more stable turtle nesting habitat along the entire Edisto Island shoreline. The Town of Edisto Beach is the cost-sharing sponsor and the Feasibility Cost Sharing Agreement was executed on 29 September 2006.

Fiscal Year 2007 funds will be used to initiate the feasibility phase of the study. Activities will consist of acquiring sonar and magnetometer data and partial vibracores to identify potential borrow sites and determine suitability of material.

Fiscal Year 2008 funds will be used to continue the feasibility phase of the study. Activities will consist of additional vibracores to identify borrow sites, and determining the suitability of borrow site material. The preliminary estimated cost of the feasibility phase is \$1,750,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of the study cost sharing is as follows:

Total Estimated Study Cost	\$1,850,000
Reconnaissance Phase (Federal)	100,000
Feasibility Phase (Federal)	875,000
Feasibility Phase (Non-Federal)	875,000

The reconnaissance phase was completed in September 2006. The feasibility study completion date is to be determined.

5 February 2007

FLOOD AND COASTAL STORM DAMAGE REDUCTION  
INVESTIGATIONS  
SOUTH PACIFIC DIVISION

ILLUSTRATION A-2.2  
COST-SHARED FEASIBILITY STUDY

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: South Pacific

Study/GRR	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Berryessa Creek, CA Sacramento District	3,135,000	1,697,000 1/	367,000 1/	371,000 1/	0*	700,000	0

1/ All General Reevaluation Report (GRR) funds received to date have been from the Construction General Appropriation.

\* Assumed allocation. Final, actual allocations yet to be determined.

The Berryessa Creek watershed is located in Santa Clara County, California, south of San Francisco Bay. Berryessa Creek is a tributary to the Coyote Creek system, which flows into the southernmost end of San Francisco Bay. Berryessa Creek flows west out of the Diablo Range and into the residential neighborhoods of San Jose and Milpitas, finally turning north through industrial portions of Milpitas before joining Lower Penitencia Creek, and then into Coyote Creek. Results of the GRR to date recommend the use of set back levees. This design is being developed in coordination with resource agencies to provide a more environmentally sustainable project. The Santa Clara Valley Water District, the local sponsor, signed the Reevaluation Cost Sharing Agreement in June 2001.

No Fiscal Year 2007 funds are scheduled to be received.

Funds requested for Fiscal Year 2008 will be used to complete the GRR including public review and the development of the Locally Preferred Plan. The estimated cost of the GRR is \$6,270,000, which is to be cost-shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study (GRR) Cost	\$6,270,000
Reconnaissance Phase (Federal)	NA
Feasibility Phase (Federal)	3,135,000
Feasibility Phase (Non-Federal)	3,135,000

The reconnaissance phase was completed before 1987. The GRR was initiated in June 2001 and the scheduled completion date is August 2008.

ILLUSTRATION A-2.4  
PRECONSTRUCTION ENGINEERING AND DESIGN

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: South Pacific

Study/GRR	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
<b>PRECONSTRUCTION ENGINEERING AND DESIGN (PED) ACTIVITIES – (NEW)</b>							
Berryessa Creek, CA Sacramento District	3,750,000	0	0	0	0	250,000	3,500,000

The Berryessa Creek watershed is located in Santa Clara County, California, south of San Francisco Bay. Berryessa Creek is a tributary to the Coyote Creek system, which flows into the southernmost end of San Francisco Bay. Berryessa Creek flows west out of the Diablo Range and into the residential neighborhoods of San Jose and Milpitas, finally turning north through industrial portions of Milpitas before joining Lower Penitencia Creek, and then into Coyote Creek. Results of the GRR to date recommend the use of set back levees. This design is being developed in coordination with resource agencies to provide a more environmentally sustainable project.

Funds requested for Fiscal Year 2008 will be used to initiate Preconstruction Engineering and Design, including execution of the Design Cost Share agreement. Preconstruction engineering and design will be cost shared at 25 percent non-Federal. The actual or final share will be the same as the non-Federal cost share for the particular project purpose. The difference, if any, will be paid at the beginning of the construction phase.

Total Estimated Preconstruction Engineering and Design Costs	\$5,000,000	Total Estimated Preconstruction Engineering and Design Costs	\$5,000,000
Initial Federal Share	3,750,000	Ultimate Federal Share	3,250,000
Initial Non-Federal Share	1,250,000	Ultimate Non-Federal Share	1,750,000

Fiscal Year 2008 General Investigations funds will be used to complete the feasibility phase and initiate the preconstruction engineering and design phase. A completion date is to be determined.

ILLUSTRATION A-2.2  
COST-SHARED FEASIBILITY STUDY

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: South Pacific

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
California Coastal Sediment Master Plan Los Angeles District	7,100,000	187,000	29,000	594,000	300,000*	300,000	5,690,000

\* Assumed allocation. Final, actual allocations yet to be determined.

The study area encompasses the entire California coastline, including the nearshore ocean environment and the coastal watersheds. California has approximately 1,100 miles of coastline, 86% of this valuable resource is actively eroding due to natural and human induced alteration in the sediments cycle. Navigation and shoreline structures, along with implementation of water control projects, have contributed significantly in affecting total yield and movement of sediments to and along the coast. The purpose of the study is to develop a comprehensive plan, for the management, restoration, protection, and preservation of the sediment resources along the coast of California. The study will evaluate regional alternatives for reducing damages from coastal storms; increasing the natural sediment supply to the coast through dam removal and other means; restoring aquatic ecosystems; and identifying potential sources of sediment, such as material dredged from ports and harbors. The Master Plan will provide Federal and non-Federal entities with an adaptive, programmatic road map to plan and program potential future coastal resources projects. The Master Plan will allow these entities to develop water resources projects within a system-oriented context where data can be easily shared and technical expertise and tools can be efficiently directed to solve coastal resources problems on a regional basis. A Geographic Information System (GIS) -based decision support system for economic optimization will be developed to assist Federal, State, and local decision makers in identifying, ranking, and selecting projects for program investment that would yield significant regional benefits, relative to costs. Ultimately, the Master Plan will allow for minimizing the number of discrete water resources projects by regionalizing solutions that holistically address individual problem areas. Any subsequent regionalized projects recommended in the Master Plan will be considered in collaboration with other Federal and non-Federal agencies, including USEPA, California State Resources Agency, NOAA, regional and local governments, and USGS. The Feasibility Cost Sharing Agreement was signed in September 2005.

Fiscal Year 2007 funds are being used to continue the feasibility phase of the study, to include inventory and map existing resources, conduct geotechnical field investigations, develop a comprehensive GIS database, develop GIS based decision support applications and IMS webpage, and hold State-wide multiple public scoping meetings.

Total Estimated Study Cost	\$14,000,000
Reconnaissance Phase (Federal)	200,000
Feasibility Phase (Federal)	6,900,000
Feasibility Phase (Non-Federal)	6,900,000

5 February 2007  
District: Los Angeles, CA

Division: South Pacific

California Coastal Sediment Master Plan

Funds requested for Fiscal Year 2008 will be used to continue the feasibility phase of the study, develop a web-based mapping system, continue building the GIS database and decision support applications, conduct geotechnical field investigations for sediment sources, develop sediment transportation network analysis tool and incorporate state-lead efforts and analysis started in Fiscal Year 2006. In addition, the baseline conditions will be established in development of the F3 document.

The feasibility study completion date is to be determined.

ILLUSTRATION A-2.2  
COST-SHARED FEASIBILITY STUDY

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: South Pacific

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Estudillo Canal San Francisco District	1,861,000	47,000	46,000	743,000	600,000*	425,000	0

\*Assumed allocation. Final, actual allocations yet to be determined.

The study area is located in Alameda County, within the city limits of San Leandro, California about 15 miles southeast of San Francisco. The watershed drains into the San Francisco Bay and has a drainage area of approximately 10 square miles. The watershed is located in San Leandro, California and the majority of the watershed is developed. A substantial number of parcels within a densely populated area of the watershed are designated as being in a FEMA floodplain. An independently completed hydrology study indicates that preliminary cost estimates for necessary improvements to protect these parcels may total more than \$20 million. The Alameda County Flood Control and Water Conservation District, the local sponsor, signed the Feasibility Cost Sharing Agreement in September 2005.

Fiscal Year 2007 funds are being used to continue the feasibility phase of the study to include completing the definition of existing project conditions, identifying feasible measures to combine as project alternatives and defining the with-project conditions. Additionally, the sponsors have requested we use a portion of our feasibility funds to study if the existing levees in the study area meet the FEMA Procedure Memorandum 34 (Interim Guidance for Studies Including Levees).

The funds requested for Fiscal Year 2008 will be used to complete the feasibility phase of the study.

The estimated cost of the feasibility phase is \$3,540,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. Up to 100 percent of the non-Federal share may be in-kind services. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$3,631,000
Reconnaissance Phase (Federal)	91,000
Feasibility Phase (Federal)	1,770,000
Feasibility Phase (Non-Federal)	1,770,000

The reconnaissance phase was completed in September 2005. The feasibility study is scheduled for completion in September 2008.

5 February 2007

ILLUSTRATION A-2.2  
COST-SHARED FEASIBILITY STUDY

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: South Pacific

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Sutter County Sacramento District	6,558,000	979,000	198,000	337,000	339,000	339,000	4,366,000

The study area is located within the boundaries of the Sacramento River Flood Control Project in Sutter County, California and includes the Sacramento, Feather and Bear Rivers, Sutter and Tisdale Bypass, Yuba City and communities of Live Oak, Meridian, Robbins and Nicolaus. Results from levee evaluation studies on the Sacramento Urban Area, Marysville/Yuba City, Mid-Valley, Lower and Upper Sacramento Area levee reconstruction projects indicate that structural problems caused by on-going seepage exist. The Corps is addressing levee reconstruction under these projects. The Sutter County reconnaissance study addressed levee improvements beyond reconstruction in these areas and investigated new areas for flood prevention. As a result of the January 1997 floods, high water caused seepage and boils, and a levee break occurred threatening the town of Meridian. In addition, seepage and boils were identified on the south levee of the Tisdale Bypass. The levee was stabilized constructing a stability berm under emergency construction authority. The State of California and Sutter County, the local sponsors, signed the Feasibility Cost Sharing Agreement in March 2000.

Fiscal Year 2007 funds are being used to continue the feasibility phase of the study, to include determination of level of detail of geotechnical explorations required to complete feasibility. Funds requested for Fiscal Year 2008 will be used to conduct plan formulation of an array of alternatives and select the Nationally Economic Development plan. The estimated cost of the feasibility phase is \$13,000,000, which is to be cost-shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$13,058,000
Reconnaissance Phase (Federal)	58,000
Feasibility Phase (Federal)	6,500,000
Feasibility Phase (Non-Federal)	6,500,000

The reconnaissance phase was completed in March 2000. The feasibility study completion date is to be determined.



ILLUSTRATION A-2.2  
COST-SHARED FEASIBILITY STUDY

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: South Pacific

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Upper Penitencia Creek San Francisco District	3,198,000	2,008,000	166,000	514,000	319,000*	191,000	0

\*Assumed allocation. Final, actual allocations yet to be determined.

The study area, extending along 3.6 miles of Upper Penitencia Creek, is located in the northwest portion of Santa Clara County, California in the city of San Jose and flows into Coyote Creek and the southern end of San Francisco Bay. Flooding has occurred in the watershed from Upper Penitencia Creek flows in 1955, 1958, 1962, 1963, 1973, 1980, 1982 and 1983. The 1982 flood, an approximate 10-year event, resulted in over \$2 million in damages. The flood plain contains approximately 1,600 properties that are subject to flood damage. It is estimated that a 100-year flood event would cause \$455 million in property damages. A study was initiated by the Soil Conservation Service, which developed feasibility level plans for flood damage reduction, but the amount of agricultural benefits identified in the analysis was insufficient to permit Soil Conservation Service participation. The Corps of Engineers was requested by the local sponsor to continue the effort. The improvements proposed by the Soil Conservation Service include flood proofing, new levees, floodwalls, bypass channels, channel realignment, grade stabilization and vegetative work in order to provide a 100-year level of flood protection. The reconnaissance study provided a review of the Soil Conservation Service study efforts and identified the remaining tasks to be performed during the feasibility and design phases. The Santa Clara Valley Water District, the local sponsor, signed the Feasibility Cost Sharing Agreement in February 1998.

Fiscal Year 2007 funds are being used to continue the feasibility phase of the study to include completion of the draft engineering design, endangered species coordination and reports, and preparation of the benefit cost ratio for the National Economic Development and Locally Preferred Plans.

The funds requested for Fiscal Year 2008 will be used to complete the feasibility phase of the study.

The estimated cost of the feasibility phase is \$5,706,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. Up to 100 percent of the non-Federal share may be in-kind services. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$6,051,000
Reconnaissance Phase (Federal)	345,000
Feasibility Phase (Federal)	2,853,000
Feasibility Phase (Non-Federal)	2,853,000

The reconnaissance phase was completed in February 1998. The feasibility study is scheduled for completion in September 2008.

FLOOD AND COASTAL STORM DAMAGE REDUCTION  
INVESTIGATIONS  
SOUTHWESTERN DIVISION

ILLUSTRATION A-2.4  
PRECONSTRUCTION ENGINEERING AND DESIGN

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Southwestern Division

	Total Estimated Federal Cost \$	Allocation Prior To FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional To Complete After FY 2008 \$
PRECONSTRUCTION ENGINEERING AND DESIGN ACTIVITIES (PED) – (451)							
Dallas Floodway Upper Trinity River Basin, Texas Fort Worth District	2,250,000	0	0	0	0	100,000	2,150,000

The project area is located in metropolitan Dallas, Texas. The existing floodway extends along the Trinity River upstream from the abandoned AT&SF Railroad Bridge at Trinity River Mile 497.37, to the confluence of the West and Elm Forks at River Mile 505.50, then upstream along the West Fork for approximately 2.2 miles and upstream along the Elm Fork approximately 4 miles. Of the 22.6 miles of levees within this project, the East Levee is 11.7 miles in length and the West Levee is 10.9 miles in length. In addition to the existing levees, the floodway includes a modified channel within the existing reach and structures including six pumping plants, five pressure conduits, and seven drainage structures. The original Dallas Floodway levees and interior drainage improvements were completed between 1928 and 1931 by the city of Dallas and the Dallas County Levee Improvement District. The Trinity River was rerouted by constructing a channel within the leveed floodway. The original channel was either filled or used for sump storage. In the mid 1940's, major floods compounded by continued upstream urbanization in the watershed overflowed the floodway system and resulted in severe flooding. Subsequently, several Corps of Engineers improvements to the Dallas Floodway were completed in 1959. The improvements included reinforcing and raising the levees to provide conveyance of the Standard Project Flood (SPF) within the floodway, plus 4-feet of freeboard. To improve interior drainage, additional pump stations were constructed and the channel within the floodway was further excavated to an average depth of 25 feet with a 50-foot bottom width, to provide the design capacity of 13,000 cubic feet per second (cfs). The existing Dallas Floodway project removed approximately 10,500 acres from the floodplain, most of which is now highly developed industrial property.

Major floods occurred 1989 and 1990 in the Upper Trinity River Basin. Subsequent, studies of the existing floodway levees within the project reach estimated their current level of protection to be approximately a 300-year frequency instead of the original SPF plus 4-feet of freeboard level of protection, due to changed hydrologic and hydraulic conditions resulting from increased upstream development and the availability of additional rainfall data. Given that the Dallas Central Business District alone would incur damages of over \$7 billion if an overtopping event were to occur, this level of risk is considered to be too great to accept by the sponsor, the city of Dallas. The recommended project consists of raising the existing levees to provide the SPF level of protection, as originally authorized. Additionally, ecosystem features (channel meanders and tree reestablishment) and linear recreation features will be added to the existing project. The benefit to cost ratio for the recommended plan is estimated to be 5.1 to 1 at 5-1/8 percent. The sponsor passed a bond election on 2 May 1998 to fund their portion of project costs and other improvements to the Trinity River within the city. PED will ultimately be cost shared at the rate for the project to be constructed but will be financed through the PED period at 25 percent non-Federal. The sponsor understands the non-Federal responsibilities in the PED phase and is ready to sign a Design Agreement. Any adjustments that may be necessary to bring the non-Federal contribution in line with the project cost sharing will be accomplished in the first year of construction.

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Dallas Floodway, Upper Trinity River Basin, Texas (continued)

Total Estimated Preconstruction		Total Estimated Preconstruction	
Engineering and Design Costs	\$ 3,000,000	Engineering and Design Costs	\$ 3,000,000
Initial Federal Share	\$ 2,250,000	Ultimate Federal Share	\$ 1,950,000
Initial Non-Federal Share	\$ 750,000	Ultimate Non-Federal Share	\$ 1,050,000

The project is not authorized for construction. The cost sharing for construction of the project will be in accordance with the Water Resources Development Act of 1986, as amended. Local interests will be required to provide lands, easements, rights-of-way, borrow and excavated or dredged material disposal areas, modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities where necessary in the construction of the project; pay five percent of the costs allocated to flood control in cash during the period of construction; contribute an additional amount in cash or credit to bring the total non-Federal share of costs to a minimum of 35 percent of flood damage reduction, 35 percent of ecosystem features and 50 percent of recreation features; and bear all costs of operation, maintenance, repair, replacement, and rehabilitation for the project.

Fiscal Year 2007 funds were appropriated under the Upper Trinity River Basin Feasibility to continue the feasibility phase of the study. The interim feasibility study for the Dallas Floodway is scheduled to be completed in August 2008. Fiscal Year 2008 funds will be used to initiate Preconstruction Engineering and Design, which includes execution of the Design Agreement. The schedule for completion of Preconstruction Engineering and Design is to be determined.

ILLUSTRATION A-2.4  
Preconstruction Engineering and Design

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Southwestern Division

Project	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
PRECONSTRUCTION ENGINEERING AND DESIGN ACTIVITIES (PED) - Continuing Flood Control (651)							
Greens Bayou, Houston, TX Galveston District	9,420,000	8,418,000	340,000	74,000	100,000	488,000	0

Greens Bayou, excluding its tributary of Halls Bayou, drains about 154 square miles in the north central area of the Buffalo Bayou watershed. The area is subject to rainstorms throughout the year and urban flooding is a common occurrence. About 10,967 homes and businesses are currently subject to flooding by the Standard Project Flood (SPF), and about 7,100 of these properties would be subject to flooding by a 100-year frequency flood. On an average annual basis, stream flooding could cause about \$17,800,000 in damages per year to existing properties. The local sponsor, Harris County Flood Control District, did not support the authorized plan due to the extensive mitigation requirements and heightened sensitivity to environmental needs. A reevaluation of the project scope was requested to formulate a different project with reduced environmental impacts. The new plan recommended consists of 3.7 miles of channel improvement in the upper reaches of the watershed, a detention basin in the downstream portion of the channel improvements. The structural flood damage reduction features are estimated to provide a ten-year level of protection, at a cost of approximately \$41.7 million, with a benefit to cost ratio of 3.2 to 1 based on a 7% interest rate. The Non-Federal sponsor for the project is the Harris County Flood Control District (HCFCD), a certified agent of the Harris County Commissioners Court in Texas.

The HCFCD is a willing and viable local sponsor, and the cost sharing partner on three major flood control projects, Brays Bayou, Clear Creek, and Sims Bayou, Texas, which are currently under construction. Preconstruction Engineering and Design (PED) is being conducted at up-front Federal financing. The non-Federal sponsor's cost share will be provided in the first year of construction.

The Water Resources Development Act of 1990 authorizes this project for construction. The cost sharing for construction of the project will be in accordance with Section 103 of the Water Resources Development Act of 1986, as amended. Local interests will be required to provide lands, easements, rights-of-way and borrow and excavated or dredged material disposal areas, modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities necessary in the construction of the project; pay five percent of the costs allocated to structural flood control in cash during the period of construction; contribute an additional amount in cash or credits to bring the total non-federal share of costs allocated to structural flood control to a minimum of 25 percent; pay fifty percent of the costs allocated to construction of the recreation facilities, and bear all costs of operation, maintenance, repair, replacement, and rehabilitation of the structural flood control and recreation facilities. The General Reevaluation Report was completed in April 2005. Benefits from the recommended plan include removal of an estimated 548 structures from the 100-year floodplain, and 392 structures from the 10-year floodplain, and the attendant reduction in costs to the Nation, including reduced Federal Emergency Management Agency costs in response to recurring flooding of the bayou.

Fiscal Year 2007 funds will be used to initiate preparation of the first set of plans and specifications. Fiscal Year 2008 funds will be used to complete the first set of plans and specifications in September 2008, which completes the Preconstruction, Engineering and Design Phase.

ILLUSTRATION A-2.2  
COST-SHARED FEASIBILITY STUDY

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Southwestern Division

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Guadalupe and San Antonio River Basins, Texas Fort Worth/Galveston Districts	7,577,000	1,432,000	666,000	495,000	300,000	300,000	4,383,000

The study area of the Guadalupe and San Antonio River basins intersects the Edwards Plateau ecological region in south central Texas and extends approximately 110 miles southeasterly from the headwaters in Kerr and Bandera Counties, to the Gulf of Mexico in Refugio and Calhoun Counties. The Guadalupe basin has a drainage area of 6,700 square miles, and the San Antonio River basin 4,180 square miles. Flooding within various portions of the Guadalupe and San Antonio River basins was severe in 1972, 1978 and 1997 when portions of the river basins were declared disaster areas. In October 1998, one of the largest of all recent flood events within the region accounted for at least 31 deaths and caused damages estimated at \$800 million. Many communities experienced inundation to rooftop levels, with water velocities great enough to completely demolish brick homes. Flooding again plagued the region with a near 500-year event in July 2002. Nine deaths occurred and more than 45,000 homes were damaged or destroyed by floodwaters, with property damage estimates of \$1 billion. During the most recent flood event in June 2004, another three lives were lost and the flooding had a negative impact on the tourism industry, a major generator of income in this area. The study consists of an investigation of the Guadalupe and San Antonio River basins to address improvements in the interest of flood damage reduction, ecosystem restoration, water quality, water supply, recreation and other allied purposes. In response to Texas Senate Bill 1 (1997), alternatives to enhance water supply would include recharge to the Edwards Aquifer. Such alternatives, if adopted, could provide dual benefits of ecosystem restoration and water supply. Both structural and nonstructural solutions are being investigated. There are currently four on-going interim feasibility studies (Cibolo Creek, Leon Creek, Salado Creek, and Alamo Heights) under the Guadalupe-San Antonio River Feasibility Study. The Cibolo Creek, Leon Creek, and Salado Creek Interim Feasibility Studies are multipurpose studies addressing flood damage reduction, ecosystem restoration, water quality and water supply. The Alamo Heights Interim Feasibility Study is focused on flood damage reduction with a secondary interest in ecosystem restoration. The Lower San Antonio River Basin (Tri-County), Texas, study is budgeted under its own line item.

Fiscal Year 2007 funds are being used to initiate the plan formulation phase for the Cibolo Creek Interim Feasibility Study, and continue the existing conditions phase for the Leon Creek Interim Feasibility Study. Fiscal Year 2008 funds will be used to complete the draft interim feasibility report for the Cibolo Creek Interim Feasibility Study, and initiate the plan formulation phase of the Leon Creek Interim Feasibility Study. The preliminary estimated cost of the overall feasibility study is \$14,082,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$14,618,000
Reconnaissance Phase (Federal)	536,000
Feasibility Phase (Federal)	7,041,000
Feasibility Phase (Non-Federal)	7,041,000

Guadalupe and San Antonio River Basins, Texas (continued)

The completion date for the Cibolo Creek Interim Feasibility Study is to be determined. The completion date for the Leon Creek Interim Feasibility Study is to be determined. The completion dates for the Alamo Heights and Salado Creek Interim Feasibility Studies are to be determined. The completion date for the overall Guadalupe and San Antonio River Basins, Texas, feasibility study is to be determined.

ILLUSTRATION A-2.2  
COST-SHARED FEASIBILITY STUDY

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Southwestern Division

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Lower Colorado River Basin, TX Fort Worth/Galveston Districts	8,144,000	4,413,000	1,116,000	544,000	300,000	300,000	1,471,000

The Lower Colorado River basin encompasses a geographic area of approximately 21,000 square miles, and includes portions of the following counties in central and south Texas: Bastrop, Blanco, Burnet, Colorado, Fayette, Hays, Lampasas, Llano, Matagorda, Mills, San Saba, Travis and Wharton. The northernmost reaches of the study area include the Highland Lakes upstream of Austin, while the southernmost boundary is the Gulf of Mexico. The study area is bounded by the Guadalupe, Lavaca, and Colorado-Lavaca basins on the west, and the Brazos and Brazos-Colorado basins on the east. The major metropolitan areas within the study boundaries are Austin, Bastrop, Bay City, Columbus, LaGrange, Marble Falls and Wharton. In October 1998, widespread flooding and related damages occurred throughout the Lower Colorado River basin and served as the impetus for initiating this study in 1999. A major watershed in the basin is the Onion Creek watershed, which originates in Blanco County, continues through Hays County, and then into Travis County, where the creek flows into the Colorado River. Onion Creek is the largest creek within the rapidly growing urban area of Austin, with a drainage area of 343 square miles, collecting flows from Williamson, Slaughter, Bear, Little Bear, Rinard, South Boggy, Marble and Cottonmouth Creeks and their tributaries. The creek has a long history of flooding, dating back to 1869 and most recently in 1981, 1991, 1998, 2001, 2002 and 2004. The flooding along Onion Creek in November 2001 was near the flood of record, which was in 1921. The city of Wharton was declared a disaster area in the most recent flood events of October 1998 and September 2002. Eleven flood events have occurred since 1900, resulting in extensive flood damages and the loss of seven lives. Flows in excess of the 100-year (one percent chance) event have occurred on two separate occasions, while the 50-year (two percent chance) event has occurred on two other occasions. Flooding in November 2004 caused extensive flooding throughout the city of Wharton. Onion Creek, Shoal Creek, Walnut Creek, Bastrop County, the Highland Lakes, and the city of Wharton have experienced increased flooding and alterations to wildlife habitat. An Information Paper, dated October 2003, documented the studies that were conducted to identify the problems, needs and opportunities of the basin. The study identified approximately 34,000 structures in the Lower Colorado River floodplain with over \$25 million in expected average annual damages. The study also identified 25 potential sites for ecosystem restoration. While most of the problem areas will be addressed in specific interim feasibility studies, there are sites which await the identification of a cost sharing sponsor. Interim feasibility studies of Onion Creek and the city of Wharton were completed in December 2006. Interim feasibility studies for Shoal Creek, Walnut Creek, and the Highland Lakes are currently underway. The Highland Lakes Interim Feasibility Study is approximately midway through its development, while interim studies of Shoal Creek, Walnut Creek, and Bastrop County have local sponsors identified and are awaiting funding to begin. The Lower Colorado River Authority is the local sponsor for the Lower Colorado River Basin Study and acts on behalf of the local interests for the various interim studies.

Fiscal Year 2007 funds are being used to complete the final Interim Feasibility Report for the Onion Creek and Wharton studies, to complete the draft Interim Feasibility Report for the Highland Lakes study, to initiate reformulation efforts for Williamson Creek, and to initiate interim feasibility studies of Shoal Creek, Walnut Creek, and Bastrop County. Fiscal Year 2008 funds will be used to complete the final Interim Feasibility Reports for the Highland Lakes Interim Feasibility Study, and to continue interim feasibility studies for Shoal Creek, Walnut Creek, and Bastrop County.



Lower Colorado River Basin, Texas (continued)

The estimated cost of the overall feasibility study is \$16,038,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$ 16,163,000
Reconnaissance Phase (Federal)	125,000
Feasibility Phase (Federal)	8,019,000
Feasibility Phase (Non-Federal)	8,019,000

The completion date for the interim feasibility study for Onion Creek and Wharton is December 2006. The completion date for the Highland Lakes Interim Feasibility Study is September 2008. The completion date for the Shoal Creek Interim Feasibility Study is to be determined. The completion date for the Walnut Creek Interim Feasibility Study is to be determined. The completion date for the Bastrop County Interim Feasibility Study is to be determined. The completion date for the overall feasibility study is to be determined.

ILLUSTRATION A-2.2  
COST-SHARED FEASIBILITY STUDY

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Southwestern Division

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Rio Grande Basin, Texas Fort Worth/Galveston/Albuquerque Districts	1,107,000	176,000	40,000	148,000	50,000 123,000	570,000	

The Rio Grande basin is located in the states of Colorado, New Mexico and Texas, and encompasses an area of over 160,000 square miles, from the headwaters of the Rio Grande in central Colorado to its mouth on the Gulf of Mexico near Brownsville, Texas. The study area includes the Rio Grande basin within the State of Texas. The reconnaissance study identified ecosystem degradation, flooding, and water conveyance and delivery as major issues in the basin. River flow regulation by two major international dams, Falcon and Amistad, for flood control and water delivery on the main stem has changed the historical flow regime of the Rio Grande. The overall basin study will evaluate current conditions and make recommendations for improving water management in the Rio Grande basin in order to restore aquatic habitat, improve water quality and reduce flood damages. Additionally, there is a need to improve reliability of future municipal, industrial, and agricultural water supplies in accordance with international treaty requirements, and a need to dedicate water for items such as low flow releases, restoration of fish and wildlife habitat, and protection of endangered species such as ocelot, jaguarundi, bald eagle, least interior tern, brown pelican and peregrine falcon. The study will identify ways to integrate the programs, policies, and resources of all concerned agencies into a multi-objective water resources plan. This study is being closely coordinated with the International Boundary and Water Commission and the stakeholder members of the Consortium of the Rio Grande, in accordance with the Memorandum of Agreement signed with Federal agencies and the Consortium of the Rio Grande, as part of the American Heritage Rivers Initiative. The city of Laredo in Webb County is a major port of entry for international trade and tourism between the United States and Mexico. A Feasibility Cost Sharing Agreement with the city of Laredo was signed on 29 September 2004, for an interim feasibility study to be conducted by the Fort Worth District. The study is focusing on the Chacon Creek watershed where development has caused significant changes in the basin hydrology, resulting in an increased flood risk for approximately 240 homes and 33 businesses along Chacon Creek. The study is evaluating significant and recurrent flooding along the creek from Casa Blanca Lake to the confluence with the Rio Grande. Ecosystem restoration, passive recreation, and water management opportunities within the Chacon Creek watershed will also be evaluated.

Fiscal Year 2007 funds are being used to complete independent technical review of existing conditions, conduct a Feasibility Scoping Meeting, and initiate development of structural and nonstructural flood damage reduction and ecosystem restoration alternatives. Fiscal Year 2008 funds will be used to continue the

Rio Grande Basin, Texas (continued)

development and analysis of the flood damage reduction and ecosystem restoration alternatives. The estimated cost of the Laredo Interim Feasibility Study is \$1,880,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$2,047,000
Reconnaissance Phase (Federal)	167,000
Feasibility Phase (Federal)	940,000
Feasibility Phase (Non-Federal)	940,000

The completion date for the Laredo Interim Feasibility Study is to be determined. The completion date for the Rio Grande Basin, Texas, feasibility study is to be determined.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: Southwestern

Study	Total Estimated Federal Cost	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Springfield, Missouri SWL District	\$1,600,000	253,000	372,000	371,000	250,000	354,000	0

The study area is along Jordan and Wilson Creeks in the heart of the City of Springfield, Missouri. Jordan Creek is an urban stream, which was channelized (vertical wall concrete channel in part with a portion in downtown Springfield being underground culverts) in the 1930's. Development in the basin has increased flood flows. The capacity of the channel to carry flows above approximately a 10-year event is exceeded, causing flood damages to businesses, industry, residential, utilities, and transportation. The most recent large flood occurred in July 2000; it was estimated to be a 100-year event. The value of structures in the 500-year flood plain is estimated at \$75,000,000. In addition to flood damage reduction, ecosystem restoration in the flood plain of previously developed lands and potential hazardous sites would also be addressed. Wetland creation and fishery habitat will be considered in areas that now or previously had quarries, railroad yards, concrete plants and other development. An estimated area of 362 acres could be restored. Possible solutions to water resource problems include non-structural flood damage measures, development of environmental and floodplain buffer zones along the river, creation of floodplain overflow wetlands, channel modification or clearing and snagging to improve channel capacities, and combinations of those alternatives. The City of Springfield, Missouri, is the local sponsor and understands cost sharing requirements.

Fiscal Year 2007 funds are being used to continue the feasibility study phase with computation of quantities and plan cost estimates. The funds requested for Fiscal Year 2008 will be used to continue the feasibility phase with the selection of a recommended plan. The estimated cost of the feasibility phase is \$3,000,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$3,100,000
Reconnaissance Phase (Federal)	100,000
Feasibility Phase (Federal)	1,500,000
Feasibility Phase (Non-Federal)	1,500,000

The reconnaissance phase was completed 12 May 2004 with the execution of the Feasibility Cost Sharing Agreement with the city of Springfield, Missouri. The date for completion of the feasibility study is September 2008.

FLOOD AND COASTAL STORM DAMAGE REDUCTION  
INVESTIGATIONS  
MISSISSIPPI RIVER AND TRIBUTARIES

APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and TN - General Investigations, Fiscal Year 2007

Study	Total Estimated Federal Cost \$	Allocation To FY 2004 \$	Allocation for FY 2005 \$	Allocation for FY 2006 \$	Allocation for FY 2007 \$	Allocation Requested for FY 2008 \$	Additional to Complete After FY 2008 \$
2. SURVEYS – CONTINUING:							
LOUISIANA							
Alexandria, LA, to the Gulf of Mexico, LA New Orleans District	2,064,000	370,000	366,000	928,000	200,000	200,000	0

The study area is located in south-central Louisiana and encompasses an area of about 1,700 square miles extending through nine parishes from Alexandria, Louisiana, to the Gulf of Mexico. The area is the drainage basin for the West Atchafalaya Basin Floodway Levee intercepted drainage system, a feature of the Mississippi River and Tributaries project, that prevents overflow from the Atchafalaya Basin Floodway and intercepts flows from the areas major outlets. The largest urban area in the study area is Alexandria, which has experienced numerous floods in its metropolitan area. There have been extensive flooding problems in the Alexandria area and widespread flooding throughout the basin in the more rural and agricultural areas. Since 1953 there have been fifteen significant storm events with rainfall ranging from 5.4 to 18 inches in the study area. The local sponsor is the Louisiana Department of Transportation and Development and the Rapides Parish Gravity Drainage District No. 1. The sponsors have requested that flooding problems in the Alexandria, Louisiana area be addressed in the feasibility study. The feasibility cost sharing agreement was executed 14 April 2003 and amended 3 May 2004 to include LADOTD's signature.

The reconnaissance phase was completed in June 1999. The feasibility study completion is scheduled for 2008.

Fiscal Year 2007 funds are being used to identify the tentatively selected plan. An alternative formulation briefing will be conducted with MVD and HQ. A refined engineering design and cost estimate will be developed for the recommended plan. A preliminary integrated feasibility report (including all technical appendices) and EIS will be drafted and reviewed internally. The preliminary document will be revised and released for a NEPA 45-day public and agency review.

Funds requested for FY 2008 will be used to complete the feasibility study.

A summary of the cost estimate break down is provided below:

Total Estimated Study Cost	\$4,028,000
Reconnaissance Phase (Federal)	100,000
Feasibility Phase (Federal)	1,964,000
Feasibility Phase (Non-Federal)	1,964,000

APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and TN - General Investigations, Fiscal Year 2008

Study	Total Estimated Federal Cost \$	Allocation To FY 2004 \$	Allocation for FY 2005 \$	Allocation for FY 2006 \$	Allocation for FY 2007 \$	Allocation Requested for FY 2008 \$	Additional to Complete After FY 2008 \$
c. Shoreline Protection Studies: None.							
d. Special Studies: None.							
e. Ecosystem Restoration Studies: The amount of \$300,000 is required to continue one feasibility study.							
<b>MISSISSIPPI</b>							
Coldwater River Basin Below Arkabutla Lake, MS Vicksburg District	2,119,000	596,000	328,000	470,000	300,000 *	300,000	125,000

The study area is located in northwest Mississippi approximately 30 miles south of Memphis, Tennessee. Increased development has created adverse impacts on area streams in meeting water quality standards while maintaining flood damage reduction goals. The Yazoo Mississippi Delta Joint Water Management District in conjunction with Tunica County, Mississippi, has requested assistance in identifying measures to improve water management, water quality, flood control, and the wetland ecosystem throughout this watershed. The sponsors desire specific projects and guidelines for future development that will improve flood protection and the aquatic environment and conserve water resources. Projects will also be designed to prevent increases in downstream stages outside the study area. The sponsors are the Yazoo Mississippi Delta Joint Water Management District and Tunica County Soil and Water Conservation District. The feasibility cost sharing agreement was executed 18 June 2003.

FY 2007 funds are being used to complete environmental and economic base condition analyses, continue alternative plan formulation and coordination with local, state and Federal agencies for watershed optimization, and initiate hydrologic and hydraulic modeling and economic and environmental analyses for future without-project and with-project watershed conditions.

Funds requested for FY 2008 will be used to complete alternative plan formulation, continue hydrologic and hydraulic modeling and economic and environmental analyses for future without-project and with-project watershed conditions, initiate engineering and design for alternative plans and continue coordination with local, state, and Federal agencies for watershed optimization.

The estimated cost of the feasibility phase is \$3,924,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of the study cost sharing is as follows:

Total Estimated Study Cost	\$4,081,000
Reconnaissance Phase (Federal)	157,000
Feasibility Phase (Federal)	1,962,000
Feasibility Phase (Non-Federal)	1,962,000

The reconnaissance phase was completed in June 2003. The estimated feasibility study completion date is 30 September 2009.

\* Assumed allocation. Final, actual allocations yet to be determined.



APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and TN - General Investigations, Fiscal Year 2008

Study	Total Estimated Federal Cost \$	Allocation Prior To FY 2005 \$	Allocation for FY 2005 \$	Allocation for FY 2006 \$	Allocation for FY 2007 \$	Allocation Requested for FY 2008 \$	Additional to Complete After FY 2008 \$
g. Collection and Study of Basic Data	N/A	N/A	535,000	673,000	400,000 *	400,000	N/A

Surveys, Gages, and Observations.

Fiscal Year 2007 funds are being used for collection of essential basic data which are subsequently used in the planning and design of flood control projects. The data collected under this activity are for authorized projects or units thereof for which funds have not been appropriated. The data to be collected will consist of information on stream flow, rainfall, floods, and other items of related hydrologic nature.

Funds requested for Fiscal Year 2008 will be used for collection of essential basic data which are subsequently used in the planning and design of flood control projects. The data collected under this activity are for authorized projects or units thereof for which funds have not been appropriated. The data to be collected will consist of information on stream flow, rainfall, floods, and other items of related hydrologic nature.

\* Assumed allocation. Final, actual allocations yet to be determined.

# CONSTRUCTION

FLOOD AND COASTAL STORM DAMAGE REDUCTION

CONSTRUCTION

GREAT LAKES AND OHIO RIVER DIVISION

APPROPRIATION TITLE: Construction – Shoreline Protection

PROJECT: Chicago Shoreline, Illinois (Continuing)

LOCATION: The project is located in northeast Illinois on the southern shore of Lake Michigan within the City of Chicago in Cook County.

DESCRIPTION: The project consists of constructing shoreline protection structures along 9.2 miles of the shoreline. Other project features include: revetments near the Adler Planetarium; a breakwater to protect the South Water Purification Plant near 78th Street; and beach nourishment of two short reaches of shoreline near Fullerton Avenue and at 31st Street.

AUTHORIZATION: Water Resources Development Act of 1996, and Water Resources Development Act of 1999.

REMAINING BENEFIT - REMAINING COST RATIO: 3.5 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 6.2 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 5.5 to 1 at 7 3/4 percent (1997).

BASIS OF BENEFIT COST RATIO: Benefits are from the latest available evaluation approved in March 1998, at October 1999 price levels.

SUMMARIZED FINANCIAL DATA		STATUS: (1 JAN 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$188,000,000	Entire Project	80%	To Be determined
Estimated Non-Federal Cost	142,000,000	PHYSICAL DATA		
Cash Contributions	52,000,000	Step Stone Revetment	44,208 feet	
Other Costs	90,000,000	Breakwater Reconstruction	2,670 feet	
Total Estimated Project Cost	\$330,000,000	Beach Replenishment	2,000 feet	

Division: Great Lakes and Ohio River

District: Chicago

Chicago Shoreline, IL

5 February 2007

SUMMARIZED FINANCIAL DATA (Continued):

		ACCUM PCT. OF EST FED COST
Allocations to 30 September 2004	\$134,302,000	
Allocations for FY 2005	\$11,551,000	
Allocations for FY 2006	\$18,302,000	
Conference Allowance for FY 2007	10,000,000 *	
Allocation for FY 2007	10,000,000	
Allocations through FY 2007	174,155,000	93
Allocation Requested for FY 2008	9,000,000	97
Programmed Balance to Complete After FY 2008	4,845,000	
Unprogrammed Balance to Complete after FY 2008	0	

\*Assumed allocation, Final, actual allocations yet to be determined.

JUSTIFICATION: The project area includes 9.2 miles of the 28 miles of publicly owned shoreline within the City of Chicago. The adjacent land mass and transportation network are protected by continuous revetments and seawalls, most of which were built in the early 1900's. Those constructed of wood pilings and stone cribs have begun to fail. As the land behind the structures is lost due to storms, the high capacity road network which runs parallel to the shoreline will be impacted. These roads carry an estimated 192,000 vehicles per day. Re-routing this traffic will cause serious disruption and significant traffic delay damages. In addition, facilities located on public property, with a capital investment of several billion dollars, will be destroyed. Over the past several years, significant degradation of the existing shore structures has occurred. Large sections of revetment have collapsed as a result of medium duration and intensity storm events. The rate of degradation is increasing, and short-term changes in sections are easily recognizable. The purification plant breakwater had collapsed to the point where gaps in the structure were visible. The breakwater protects the South Water Purification Plant, which services 2.5 million persons. Federal Government and local sponsors have invested over \$260 million in this project thus far which has benefited over 3 million people. Failure to complete this project will jeopardize these investments.

Average annual benefits are as follows:

Annual Benefits	Amount
Storm Damage Prevention	45,735,000
Recreation	27,718,000
<b>Total</b>	<b>\$ 73,453,000</b>

Division: Great Lakes and Ohio River

District: Chicago

Chicago Shoreline, IL

5 February 2007

FISCAL YEAR 2007: The current amount is being applied as follows:

Complete construction 40 <sup>th</sup> to 41 <sup>st</sup> Street	\$ 8,000,000
Initiate construction Montrose to Irving	1,000,000
Engineering and Design	300,000
Construction Management	700,000
TOTAL	\$10,000,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue construction Montrose to Irving	\$ 8,100,000
Engineering and Design	300,000
Construction Management	600,000
TOTAL	\$ 9,000,000

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts contained in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below.

Requirements of Local Cooperation	Payment During Construction and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation, and Replacement Costs
Pay 35 percent of the costs allocated to hurricane and storm damage reduction for the Federally supportable plan as reduced for credit allowed for non-Federal work under Section 215 of the Flood Control Act of 1968 and/or Section 206 of the Water Resources Development Act of 1992, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of hurricane and storm damage reduction facilities	\$ 104,000,000	\$ 500,000
Pay all the incremental costs of the locally preferred plan over the Federally supportable plan as reduced for credit allowed for non-Federal work under Section 215 of the Flood Control Act of 1968 and/or Section 206 of the Water Resources Development Act of 1992.	38,000,000	
Total Non-Federal Costs	\$ 142,000,000	\$ 500,000

The non-Federal sponsor has agreed to make all required payments concurrently with project construction.

Division: Great Lakes and Ohio River

District: Chicago

Chicago Shoreline, IL

5 February 2007

STATUS OF LOCAL COOPERATION: The City of Chicago and the Chicago Park District are the local sponsors for the project. The reimbursement agreement for protection of the filtration plant (Reach 5) was executed on April 28, 1997. A Project Cooperation Agreement encompassing 31<sup>st</sup> Street to 33<sup>rd</sup> Street, 1,000 feet of protection at Belmont Avenue, and beach stabilization at 31<sup>st</sup> Street was executed 7 August 1998. The Project Cooperation Agreement for the remainder of the project was executed on May 17, 1999. The Chicago Park District currently owns all lands required for the project. The non-Federal cost estimate of \$142,000,000 is an increase of \$16,000,000 from the non-Federal cash contribution of \$126,000,000 as noted in the PCA. The non-Federal sponsor is financially capable and willing to contribute the non-Federal share.

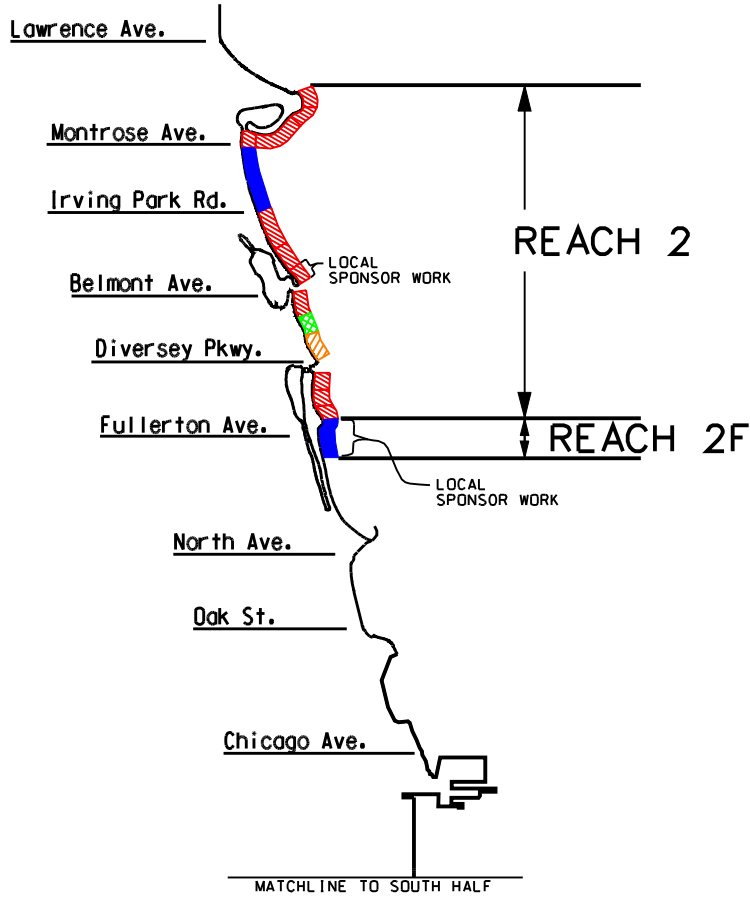
COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of \$188,000,000 is an increase of \$14,000,000 from the latest estimate (\$174,000,000) presented to Congress (FY 2007) due to increased costs for concrete and steel and higher petroleum prices. In addition, there have been changes to the design during construction due to differing site conditions, which resulted in increased construction costs.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: One Finding of No Significant Impact (FONSI) for entire project was signed on July 3, 1993, and another FONSI , for additional land at Reach 4, 51<sup>st</sup> to 54<sup>th</sup> Street was signed on June 25, 1999. EA was completed for Belmont to Diversey South segment in 2002. A FONSI for the 40<sup>th</sup>-41<sup>st</sup> Street reach was signed in June 2005.

OTHER INFORMATION: Funds to initiate PED were appropriated in FY 1992. Funds to initiate construction were appropriated in FY 1997. The project authorization provides for reimbursement for the Federal share of construction work performed by the non-Federal sponsor in Reach 5. WRDA 1999 authorized credit for work that was performed at Reach 3, Solidarity Drive, prior to execution of the Project Cooperation Agreement.





The Federal plan includes rubblemound revetments along 9.2 miles of publicly owned lakefront shoreline. The locally preferred plan substitutes steel sheet pile, and concrete step-stone revetments for the rubblemound revetments. The non-Federal sponsor will pay the incremental costs of the locally preferred plan.

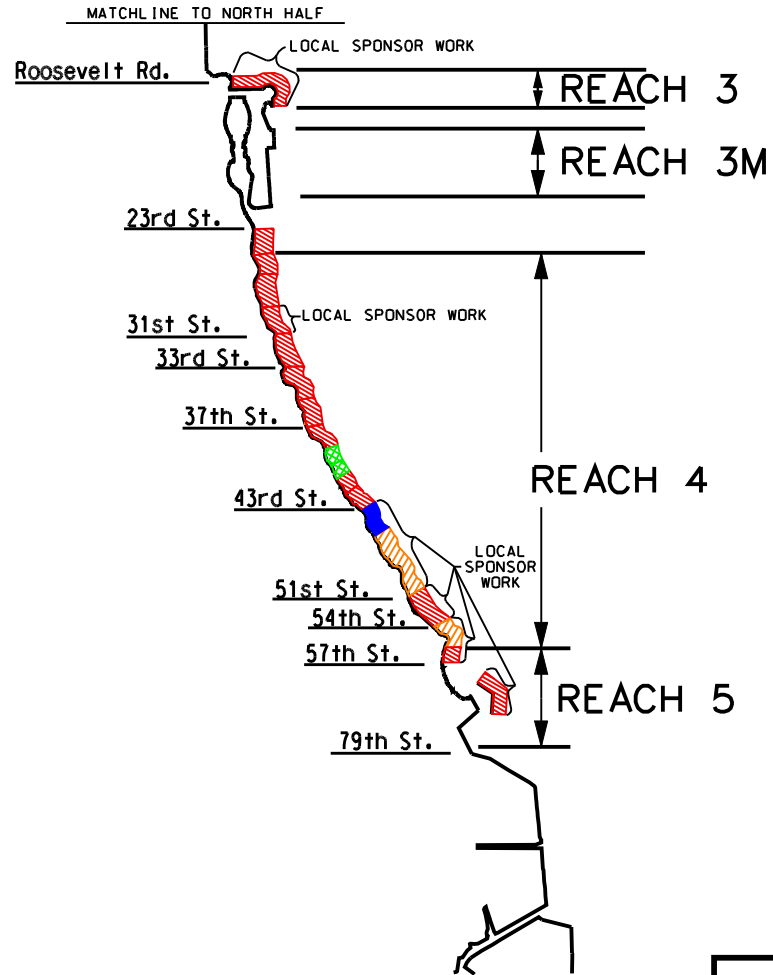
The scheduled completion date is the same as the latest presented to Congress (FY 2007), "To Be determined".



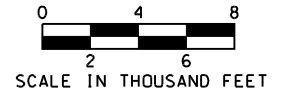
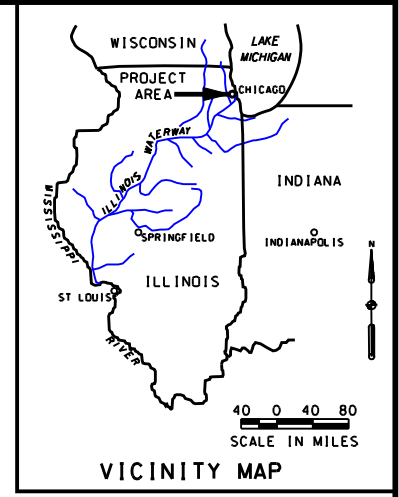
**NORTH HALF**

**LEGEND**

-  WORK COMPLETED AS OF 30 SEPTEMBER 2006
-  WORK PROPOSED WITH FUNDS AVAILABLE FOR FY 2007
-  WORK PROPOSED WITH FUNDS REQUESTED FOR FY 2008
-  WORK REQUIRED TO COMPLETE THE PROJECT AFTER FY 2008



**SOUTH HALF**



**CHICAGO SHORELINE PROJECT**  
 CHICAGO DISTRICT  
 GREAT LAKES AND  
 OHIO RIVER DIVISION  
 5 FEBRUARY 2007



APPROPRIATION TITLE: Construction - Local Protection (Flood Control)

PROJECT: Des Plaines River, IL (Continuing)

LOCATION: The project area is located in Lake and Cook Counties in northeastern Illinois and has a drainage area of approximately 500 square miles.

DESCRIPTION: The project consists of six elements: two levee units, expansion of two existing reservoirs, raising of one existing dam to increase storage, construction of one new lateral storage area, and environmental mitigation. Both levee units are a combination of floodwalls, levees, and closure structures; and both provide residents with a 100-year level of protection in addition to significant transportation benefits.

AUTHORIZATION: Water Resources Development Act of 1999 (Public Law 106-53).

REMAINING BENEFIT-REMAINING COST RATIO: 2.9 to 1 at 7 percent. (Entire project)  
4.1 to 1 at 7 percent. (Levee 37)

TOTAL BENEFIT-COST RATIO: 1.7 to 1 at 7 percent. (Entire project)  
2.1 to 1 at 7 percent. (Levee 37)

INITIAL BENEFIT-COST RATIO: 1.6 to 1 at 6 5/8 percent. (Entire project)  
3.0 to 1 at 6 5/8 percent (Levee 37)

BASIS OF BENEFIT-COST RATIO: Benefits are from the latest approved feasibility report, dated June 1999 at October 1998 price levels.

SUMMARIZED FINANCIAL DATA		STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$42,600,000	Entire Project	15	To be determined
Estimated Non-Federal Cost	22,900,000			
Cash Contributions	3,275,000	PHYSICAL DATA		
Other Costs	19,625,000	Levees and Floodwalls		
Total Estimated Project Cost	\$65,500,000	Reservoirs		
		Dam		
		Storage Areas		

Division: Great Lakes and Ohio River

District: Chicago

Des Plaines River, IL

5 February 2007

SUMMARIZED FINANCIAL DATA (CONTINUED)		ACCUM. PCT. OF EST. FED. COST
Allocations to 30 September 2004	\$ 1,594,000	
Allocations for FY 2005	1,367,000	
Allocations for FY 2006	3,559,000	
Conference Allowance for FY 2007	6,000,000	
Allocation for FY 2007	6,000,000 *	
Allocations through FY 2007	12,520,000	29
Allocation Requested for FY 2008	6,620,000	45
Programmed Balance to Complete After FY 2008	23,460,000	
Unprogrammed Balance to Complete after FY 2008	0	

\* Assumed allocation, Final, actual allocations yet to be determined.

JUSTIFICATION: The Des Plaines River has a long history of frequent floods causing significant economic losses in the Chicago metropolitan area. 1986/1987 flooding of the Des Plaines River inflicted an estimated \$100 million in damages to this densely populated area of 10,000 dwellings and 263 business and industrial sites, closed Interstate 90/94 and severely disrupted the entire Chicago metropolitan area transportation network, including closure of one of the busiest airports, O'Hare International Airport, the first time ever for a non-winter event, for over 24 hours. The Airport was literally an island. People were able to leave the Airport by walking down Interstate 90. Over 15,000 residents were evacuated from the flooded area. Portions of the watershed are among the most rapidly developing in the Chicago metro area; while other portions already exhibit the highest population density of the area. There were 4 fatalities associated with the 1986/1987 flood events on the Des Plaines River including 3 deaths related to basement flooding which included electrocution and 1 death due to drowning during evacuation. Due to density of residential and commercial development and the glacial lake plain topography, flood depths and velocities result in substantial risk to life and health, as well as significant damages to 73 municipalities in the watershed from flooding of residential and commercial structures, and impacts to a large, dense transportation network in this area of 800,000 plus residents. Governor of Illinois declared Lake and Cook Counties area of Des Plaines watershed a disaster area during May 2004 flooding. This flood caused estimated damages of \$2-\$3 Million. Flooding caused evacuation of residents and numerous road closings for over a week. Locals built a sandbag levee around the proposed location of Levee 37 to minimize flooding of residents and roads. Average annual flood damage prevention benefits estimated at \$6,001,000 for the entire Des Plaines River, IL project.

FISCAL YEAR 2007: The amount will be applied as follows:

Initiate construction Levee 37	\$ 5,400,000
Engineering and Design	200,000
Construction Management	400,000
Total	\$ 6,000,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue construction Levee 37	\$ 6,000,000
Engineering and Design	210,000
Construction Management	410,000
Total	\$6,620,000

NON-FEDERAL COST: In accordance with the cost sharing and financing requirements contained in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below.

Requirements of Local Cooperation	Payment During Construction and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation, and Replacement Costs
Provide lands, easements, rights of way, and borrow and excavated or dredged material disposal areas.	\$ 9,025,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project, which may be reduced for credit allowed based on prior work (Section 104 of the Water Resource Development Act of 1986) after reductions for such credit have been made in the required cash payments.	10,600,000	
Pay 5 percent of the costs allocated to flood control to bring the total non-Federal share of flood control costs to 35 percent and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	3,275,000	\$273,200
Total Non-Federal Costs	\$22,900,000	\$273,200

The non-Federal sponsor has agreed to make all required payments concurrently with project construction.

Division: Great Lakes and Ohio River

District: Chicago

Des Plaines River, IL

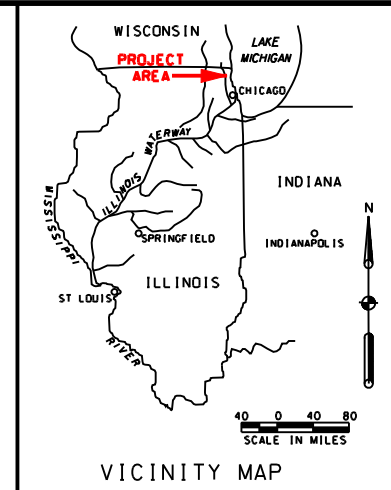
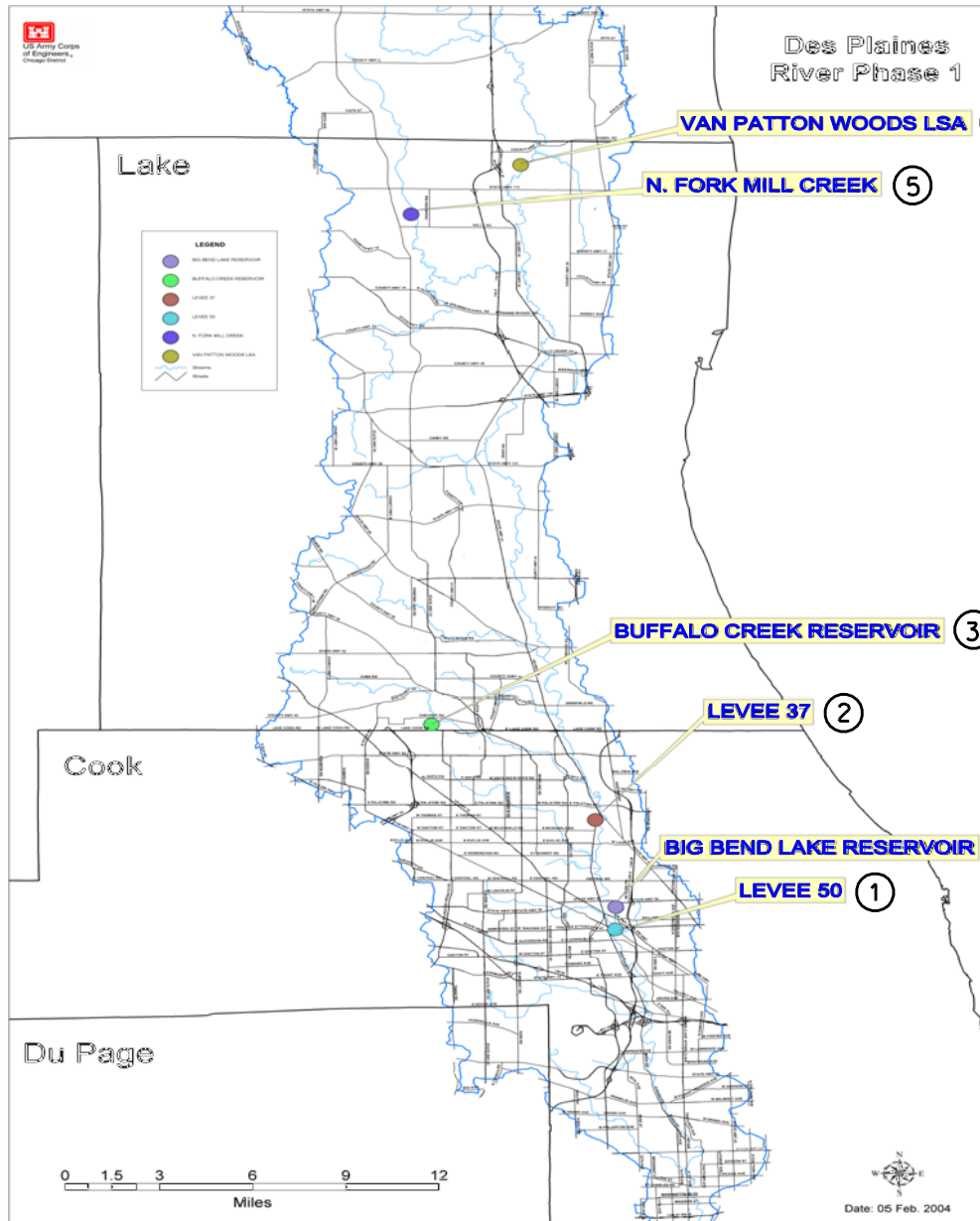
5 February 2007

STATUS OF LOCAL COOPERATION: The State of Illinois is the local sponsor for the project. The Project Cooperation Agreement (PCA) is scheduled to be executed in FY 2007. The non-Federal sponsor is financially capable and willing to contribute the non-Federal share. The local sponsor has received ASA(CW)'s approval for Section 104 in the amount of \$ 14,711,000.

COMPARISON OF FEDERAL COST ESTIMATE: The Federal cost estimate of \$42,600,000 is an increase of \$1,130,000 over the previously estimated cost of \$41,470,000, last presented to Congress (FY 2007). This increase is due to price levels and inflation adjustments.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final Environmental Impact Statement (EIS) was filed with the United States Environmental Protection Agency on 15 July 1999. The Record of Decision was signed on 5 January 2000. A supplemental EIS was filed on 11 May 2006. The Record of Decision was signed on 16 June 2006.

OTHER INFORMATION: Funds to initiate PED were appropriated in FY 1998. Local sponsor initiated and completed construction of gates in FY99 and awarded a pump station contract in June 2003 that was completed in FY 2005. The local sponsor awarded a construction contract of the final phase of Levee 50 in FY 2006.



SCHEDULES	Project No.
WORK COMPLETED AS OF 30 SEPTEMBER 2006	None
WORK PROPOSED WITH FUNDS AVAILABLE FOR FY 2007	1 & 2
WORK PROPOSED WITH FUNDS REQUESTED FOR FY 2008	2, 3, & 4
WORK REQUIRED TO COMPLETE THE PROJECT AFTER FY 2008	2, 3, 4, 5, & 6

**DES PLAINES RIVER  
ILLINOIS**

**CHICAGO DISTRICT  
GREAT LAKES AND  
OHIO RIVER DIVISION**

**5 FEBRUARY 2007**

APPROPRIATION TITLE: Construction - Local Protection (Flood Control)

PROJECT: Little Calumet River, Indiana (Continuing)

LOCATION: Little Calumet River Basin, Northwest Indiana, Lake County.

DESCRIPTION: The project consists of replacing 9.5 miles of existing spoil bank levees with 12.1 miles of new levees, floodwalls, and closure and appurtenant structures between the Illinois-Indiana State line and Cline Avenue in Gary, Indiana; constructing 9.7 miles of set-back levees and appurtenant drainage structures between Cline Avenue and I-65; installing a flow control structure at Hart Ditch; permanent evacuation of 37 structures in the Black Oak area of Gary, Indiana; constructing a betterment levee from Cline to Clark; modifying 7 miles of channel with 3 accompanying bridge culvert modifications; modifying 1 highway bridge; constructing 16.8 miles of hiking/biking trails and accompanying recreation support facilities, and preserving 788 acres of wildlife habitat. A Post Authorization Change Report was approved in May 1999 extending the eastern limit of the project to include the Marshalltown area.

AUTHORIZATION: Water Resources Development Act of 1986. Appropriations for Energy and Water Development of 2006.

REMAINING BENEFIT-REMAINING COST RATIO: 4.7 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 1.9 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 2.1 to 1 at 8.875 percent

BASIS OF BENEFIT-COST RATIO: Benefits are from the latest available evaluation approved in October 1994 at 1993 price levels. A Post Authorization Change Report was approved in May 1999.

Division: Great Lakes and Ohio River

District: Chicago

Little Calumet River, IN

5 February 2007

SUMMARIZED FINANCIAL DATA		STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$153,000,000	Entire Project	70	To Be determined
Estimated Non-Federal Cost	51,000,000			
Cash Contributions	16,255,000			
Other Costs	34,745,000			
Total Estimated Project Cost	\$204,000,000			

PHYSICAL DATA

Levees and Floodwalls	21.8 miles
Pumping Plant Modifications	17
Structures Removed	37
Structures Floodproofed	53
Channel Modification	7 miles
Hiking Trails	6.8 miles

ACCUM.  
PCT. OF EST.  
FED. COST

Allocations to 30 September 2004	\$ 92,082,400	
Allocations for FY 2005	4,886,000	
Allocations for FY 2006	8,435,000	
Conference Allowance for FY 2007	14,000,000	
Allocation for FY 2007	14,000,000 *	
Allocations through FY 2007	119,403,400	78
Allocation Requested for FY 2008	13,000,000	87
Programmed Balance to Complete After FY 2008	20,596,600	
Unprogrammed Balance to Complete after FY 2008	0	

\* Assumed allocation, Final, actual allocations yet to be determined.

JUSTIFICATION: Overbank flood damages occur to 10,000 structures, primarily residential, along the Little Calumet River in Indiana within the communities of Hammond, Munster, Griffith and Gary. The total value of these structures is in excess of \$775 million. Continued flood damages occur to commercial and public buildings, and the transportation network. The major East/West highway transportation link between the Chicago metropolitan area and the eastern United States, Interstate 80/94, is susceptible to closure during flooding. About 160,000 vehicles per day of which 40% are trucks transit the area on the interstate. Average

Division: Great Lakes and Ohio River

District: Chicago

Little Calumet River, IN

5 February 2007

JUSTIFICATION (continued) annual benefits are estimated at \$18,550,000. Completion of the project will protect residents from flood events up to the 200-year event. This project benefits 1.2 Million people and 10,000 dwellings. An estimated \$35 Million in flood damages were incurred and one life lost in the November 1990 flood, the most recent significant flood event. The communities of Hammond, Highland and Munster, IN were inundated. The President declared the area inundated by the November 1990 flood a National Disaster Area on December 6, 1990. The State of Indiana continues to rate the flood damage potential along the Little Calumet River as the most severe in the state. The project avoids the short-and long-term adverse impacts associated with the destruction or modification of wetlands by designating the existing wetland areas in the Gary reach for overbank flood storage, a vital requirement of the hydraulic operation and design of the project, and hence required project lands. Environmental attributes are being mitigated for, as well as enhanced along the river corridor. Construction of the Hart Ditch Control structure is required to meet statutory requirements to minimize flow impacts (for all events up to the 100 year) to the State of Illinois communities, resultant from changes to the floodplain/floodway in Indiana as part of the Project. Additionally, the Control Structure minimizes impact to the flow volume attributable to the State of Illinois' Lake Michigan Diversion, which is regulated by Supreme Court Decree. Also critical is rehabilitation of existing pump stations to eliminate risks from interior flooding that could result since the existing system is insufficient to provide significant protection from interior runoff during major storm events along the West Reach of the project. An intense localized rainfall event occurred on September 13, 2006 that was centered over the communities of Highland and Griffith, Indiana resulting in widespread flooding and damage to approximately 1,500 homes. The precipitation event was estimated to be a 600 year event rainfall over these communities. Lake County, Indiana qualifies as an area of persistent and chronic unemployment. A minority plan has been developed that identifies construction contracts which can be set aside for small business contractors and minority owned/Section 8A contractors in the project area. A 40 percent minority participation goal has been established for all future construction contracts for the Contractor's aggregate workforce in each trade.

Average annual benefits are as follows:

Annual Benefits	Amount
Flood Damage Prevention	15,917,000
Recreation	411,000
Land Enhancement	2,222,000
Total	18,550,000

The Budget includes funding for this project primarily to addresses a significant risk to human safety. The Corps made this determination based on many factors such as the likelihood and magnitude of the potential flooding, the number of people living in the flood plain, the likely warning time, the availability of evacuation routes, and site-specific engineering factors.

Division: Great Lakes and Ohio River

District: Chicago

Little Calumet River, IN

5 February 2007



FISCAL YEAR 2007: The current amount is being applied as follows:

Complete construction Stage VI-I South	\$ 1,175,000
Complete construction StageVI-I North	3,025,000
Complete construction Stage VI-2	2,125,000
Complete construction Landscaping 2	90,000
Complete construction Burr St 2	1,600,000
Initiate construction V-2	2,900,000
Initiate construction Pumps 2	1,250,000
Engineering and Design	935,000
Construction Management	900,000
Total	\$ 14,000,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue construction Stage V-2	\$ 8,200,000
Continue construction Pumps 2	3,500,000
Engineering and Design	300,000
Construction Management	1,000,000
Total	\$ 13,000,000

NON-FEDERAL COST: In accordance with the cost sharing and financing requirements contained in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below.

Requirements of Local Cooperation	Payment During Construction and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation, and Replacement Costs
Provide lands, easements, rights of way, and borrow and excavated or dredged material disposal areas.	16,027,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project, reduced for credit allowed based on prior work (Section 104 of the Water Resource Development Act of 1986; \$1,667,200) after reductions for such credit have been made in the required cash payments.	18,718,000	
Pay one-half separable costs allocated to recreation and bear all costs of operation, maintenance, repair, rehabilitation and replacement of recreation facilities;	2,628,000	

Division: Great Lakes and Ohio River

District: Chicago

Little Calumet River, IN

5 February 2007

Requirements of Local Cooperation	Payment During Construction and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation, and Replacement Costs
Pay approximately 5 percent of the costs allocated to flood control (other than non-structural measures) to bring the non-Federal share of flood control costs to 25 percent as determined under Section 103 (m) of the Water Resource Development Act of 1986, as amended; to reflect credit allowed for prior work (Section 104 of the Water Resource Development Act of 1986; \$1,667,200); and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	11,343,000	150,000
Pay 25 percent of the first cost allocated to non-structural flood control measures.	2,025,000	
Pay 25 percent of the costs allocated to fish and wildlife enhancement, and pay 25 percent of the costs of operation, maintenance, repair, rehabilitation and replacement of the fish and wildlife facilities.	259,000	
<b>Total Non-Federal Costs</b>	<b>\$51,000,000</b>	<b>\$ 150,000</b>

STATUS OF LOCAL COOPERATION: The Little Calumet River Basin Development Commission is the local sponsor for the project. The Local Cooperation Agreement (LCA) was executed on August 16, 1990. The LCA was supplemented twice to include the East Reach Remediation, 30 July 1999 and Burr Street Betterment, 26 April 2000. The current non-Federal cost estimate of \$51,000,000, which includes a cash contribution of \$16,255,000, is an increase of \$27,400,000 from the non-Federal cost estimate of \$23,600,000 noted in the Local Cooperation Agreement, which included a cash contribution of \$4,800,000. The non-Federal sponsor is financially capable and willing to contribute the non-Federal share. The local sponsor has received approval for Section 104 credits in the amount of \$1,667,200.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of \$151,000,000 is an increase of \$1,000,000 from the latest estimate (\$150,000,000) presented to Congress (FY 2007). This change includes the following items:

Item	Amount
Price Escalation on Construction Features	-\$1,000,000
Post Contract Award and Other Estimating Adjustments	\$2,000,000
<b>Total</b>	<b>\$1,000,000</b>

Division: Great Lakes and Ohio River

District: Chicago

Little Calumet River, IN

5 February 2007

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final Environmental Impact Statement (EIS) was filed with the United States Environmental Protection Agency on February 3, 1984. The Record of Decision was signed on July 13, 1990. Environmental Assessments (EA) were subsequently prepared addressing potential borrow and disposal sites which were not covered in the EIS and the three Findings of No Significant Impact were signed on May 9, 1990, July 11, 1991 and April 21, 1992. A supplemental Environmental Impact Statement was completed for the levee re-alignment, excavated ponding areas and new borrow sites. The Record of Decision was signed on June 23, 1995.

OTHER INFORMATION: Funds to initiate PED were appropriated in FY 1984 and funds to initiate construction were appropriated in FY 1990. Fish and wildlife mitigation and enhancement costs for this project are estimated at \$5,220,000. A 902 PAC report was approved by HQUSACE on 5 December 2000. Section 127 of the FY 2006 Appropriation Bill raised project authorization cost to \$198,000,000.

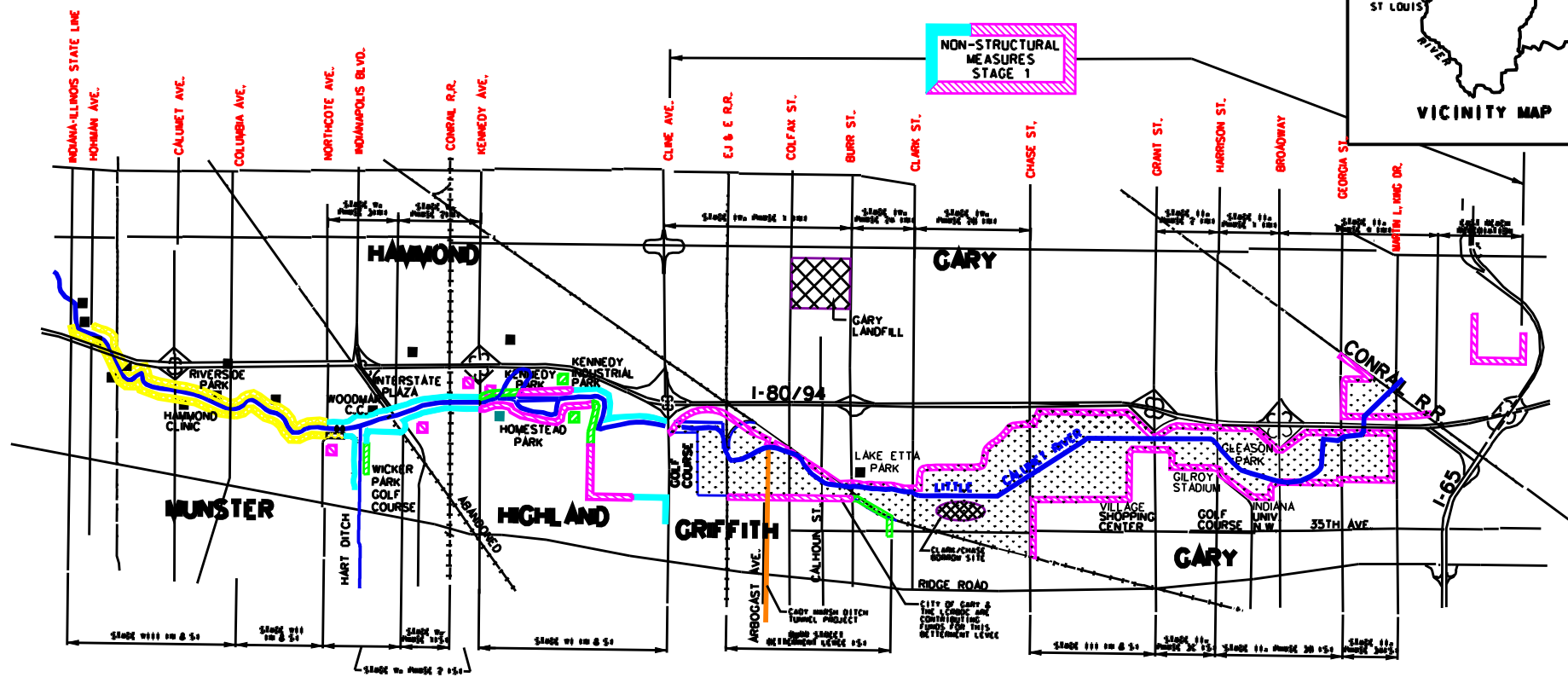
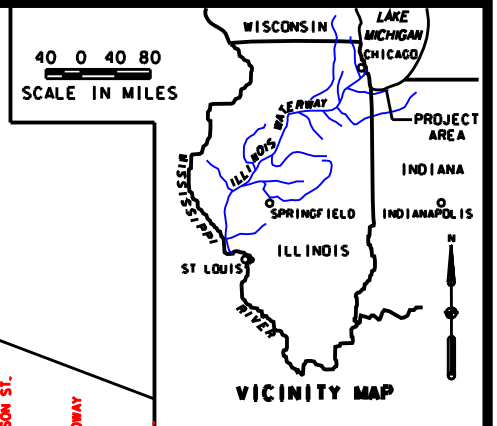
The scheduled completion date is the same as the latest presented to Congress (FY 2007), "To Be determined".

Division: Great Lakes and Ohio River

District: Chicago

Little Calumet River, IN

5 February 2007



**LEGEND**

- WORK COMPLETED AS OF FY 2006
- WORK PROPOSED WITH FUNDS AVAILABLE FOR FY 2007
- WORK PROPOSED WITH FUNDS REQUESTED FOR FY 2008
- WORK REQUIRED TO COMPLETE THE PROJECT AFTER FY 2008
- LEVEES/FLOODWALLS
- OVERBANK STORAGE WILDLIFE HABITAT
- CONTROL STRUCTURE
- PUMPING STATION MODIFICATIONS

Stage I Non-structural Measures  
 Stage II No. Levee Burr to Broadway  
 Stage III So. Levee Chase to Broadway  
 Stage IV Levee Broadway to Conrail RR  
 Stage V Levee Northcote to Kennedy  
 Stage VI Levee Kennedy to Cline Ave.  
 Stage VII Levee Columbia to Northcote  
 Stage VIII Levee State Line to Columbia



LITTLE CALUMET RIVER  
 INDIANA  
 FLOOD CONTROL PROJECT

CHICAGO DISTRICT  
 GREAT LAKES AND  
 OHIO RIVER DIVISION

5 FEBRUARY 2007

APPROPRIATION TITLE: Construction - Local Protection (Flood Control)

PROJECT: McCook and Thornton Reservoirs, Illinois (Continuing)

LOCATION: The project area covers 341 square miles of the combined sewer area in Cook County in Chicago and 48 adjacent suburban communities.

DESCRIPTION: The authorized project consists of constructing two reservoirs from stone quarries located in McCook and Thornton, Cook County, Illinois with floodwater storage capacities of 21,400 acre-feet (7 billion gallons) and 14,600 acre-feet (4.8 billion gallons), respectively. The Thornton Reservoir project authorization was modified to evaluate inclusion of the National Resource Conservation Service Thorn Creek Reservoir with the Thornton Reservoir project. The combined reservoir at Thornton, determined feasible in a 2003 Limited Re-evaluation Report, has a combined capacity of 24,200 acre-feet (7.8 billion gallons). McCook and Thornton both will serve as the termini of the Metropolitan Water Reclamation District of Greater Chicago's TARP project (Tunnel and Reservoir Plan) Phase I tunnels. TARP was developed by Federal, State, regional and local governments as a regional plan for reducing flood damages and improving water quality in area waterways. The two reservoirs will capture and store combined sewer flows from the tunnel systems for later treatment after the storm event. Currently, when the tunnels reach their capacity, the combined flow of raw sewage and storm water backs up through the sewer system into basements of homes and businesses and on to the roadways and is discharged directly into area waterways. When storm events are severe, the navigation locks on the Chicago River must be opened to release the combined sewer flow into Lake Michigan - the source of drinking water for millions. Reservoir features include pumps, a cutoff wall, main and distribution tunnels, gates and valves, hydraulic structures, wall stabilization and aquifer protection, aeration and wash-down systems.

AUTHORIZATION: Water Resources Development Act of 1988, modified by the Water Resources Development Act of 1999.

REMAINING BENEFIT-REMAINING COST RATIO: 3.4 to 1 at 7 percent (McCook and Thornton combined).  
4.8 to 1 at 7 percent (McCook only)

TOTAL BENEFIT-COST RATIO: 2.2 to 1 at 7 percent. (McCook and Thornton combined)  
2.4 to 1 at 7 percent (McCook only)

INITIAL BENEFIT-COST RATIO: 2.0 to 1 at 8 percent.

BASIS OF BENEFIT-COST RATIO: McCook Reservoir benefits are based on the latest available evaluation in the Final Special Reevaluation Report dated February 1999 at October 1997 price levels. Thornton Reservoir benefits are based on the economic evaluation completed for the Limited Reevaluation Report dated July 2003 at October 2001 price levels.

Division: Great Lakes and Ohio River

District: Chicago

McCook and Thornton Reservoirs, IL

5 February 2007

SUMMARIZED FINANCIAL DATA		STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$ 547,000,000	McCook Reservoir	30	To Be determined
Estimated Non-Federal Cost	182,000,000	Thornton Reservoir	0	To Be determined
Cash Contributions	89,698,000	Entire Project	20	To Be determined
Other Costs	92,302,000			
Total Estimated Project Cost	\$ 729,000,000			

		ACCUM. PCT. OF EST. FED. COST	PHYSICAL DATA	
Allocations to 30 September 2004	\$	77,138,000		
Allocations for FY 2005		27,772,000		
Allocations for FY 2006		25,825,000		
Conference Allowance for FY 2007		45,000,000	McCook Reservoir	
Allocation for FY 2007		45,000,000 *	Storage Capacity	21,400 acre-feet
Allocations through FY 2007		175,735,000	32	Thornton Reservoir
				Storage Capacity
Allocation Requested for FY 2008		33,500,000	38	24,200 acre-feet
Programmed Balance to Complete After FY 2008		337,765,000		
Unprogrammed Balance to Complete after FY 2008		0		

\*Assumed allocation, Final actual allocations yet to be determined.

JUSTIFICATION: The McCook and Thornton Reservoirs Project covers 341 square miles of the combined sewer area in Chicago and suburban communities. Within this region, nearly 1,200,000 structures suffer flooding attributable to combined storm sewer outfall submergence caused by inadequate capacity of area waterways. The McCook Reservoir will provide an additional 7 times the storage capacity of its billion gallon capacity connecting tunnel system and will provide flood damage reduction benefits to Chicago and 37 suburban communities where 146,000 homes and businesses flood annually. The Thornton Reservoir will provide an additional 8 times the storage capacity of its half billion gallon capacity connecting tunnel system and will provide flood damage reduction to Chicago and 13 suburban communities where nearly 200,000 homes and businesses flood annually. The project will also improve water quality in area waterways, reduce untreated sewage backflow into Lake Michigan and reduce beach closures. The project benefits over 3 million people. The sponsor, the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC), has been under pressure from the USEPA to have at least Stage 1 of the McCook Reservoir constructed by CY 2014 when their current NPDES (National Pollution Discharge Elimination System of the Clean Water Act) permit expires. Department of Justice requested

Division: Great Lakes and Ohio River

District: Chicago

McCook and Thornton Reservoirs, IL

5 February 2007

JUSTIFICATION (continued):MWRDGC to sign an Administrative Order with USEPA on a timeline to get McCook Reservoir constructed and operational. Delays in completion of the project due to the pace of past Federal funding could force Department of Justice to order enforced settlement to comply with the Clean Water Act. Risks to human health are high due to continued contaminated flooding. One of the intended purposes of this project is to prevent sewage backflow to Lake Michigan, impacting drinking water supply and damaging the aquatic ecosystem, including fish tainting, contaminant uptake and degradation of spawning areas. The elimination of backflows of raw sewage to Lake Michigan is a priority issue of the Great Lakes Governors and Mayors and is a priority issue of the Great Lakes Regional Collaboration established in response to Executive Order 13340 signed by President Bush in May 04.

Average annual benefits for McCook and Thornton Reservoirs are as follows:

Annual Benefits	Amount
Flood Damage Prevention	85,066,000
Water Quality	14,732,000
Water Supply	9,572,000
Recreation	1,030,000
<b>Total</b>	<b>\$ 110,400,000</b>

FISCAL YEAR 2007: The current amount is being applied as follows:

Complete construction Distribution Tunnels	\$ 1,700,000
Complete construction Pumps and Motors	300,000
Complete construction Cut-off wall 2	9,000,000
Continue construction Grout	22,000,000
Fully fund construction Wall Stability	7,000,000
Engineering and Design – McCook Reservoir	2,000,000
Construction Management	3,000,000
<b>Total</b>	<b>45,000,000</b>

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue construction Grout	\$ 30,000,000
Engineering and Design – McCook Reservoir	1,000,000
Construction Management	2,500,000
<b>Total</b>	<b>\$ 33,500,000</b>

Division: Great Lakes and Ohio River

District: Chicago

McCook and Thornton Reservoirs, IL

5 February 2007

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below.

Requirements of Local Cooperation	Payment During Construction and Reimbursements	Maintenance, Repair, Rehabilitation, and Replacement Costs
McCook Reservoir: Provide lands, easements, rights of way, and borrow and excavated or dredged material disposal areas.	5,069,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	32,833,000	
Pay 17 percent of the costs allocated to flood control to bring the total non-Federal share of flood control costs to 25 percent and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	76,098,000	4,300,000
Total McCook Reservoir	\$114,000,000	4,300,000
Thornton Reservoir: Provide lands, easements, rights of way, and borrow and excavated or dredged material disposal areas.	26,882,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary, for the construction of the project, and less credits allowed for prior work per Section 501 of Water Resources Development Act of 1999.	27,518,000	
Pay approximately 5 percent of the costs allocated to flood control to bring the total non-Federal share of flood control costs to 25 percent and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	13,600,000	2,800,000
Total Thornton Reservoir	\$ 68,000,000	\$2,800,000
Total Non-Federal	\$182,000,000	\$7,100,000

Division: Great Lakes and Ohio River

District: Chicago

McCook and Thornton Reservoirs, IL

5 February 2007



**STATUS OF LOCAL COOPERATION:** The Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) is the local sponsor for the project. The Project Cooperation Agreement for McCook Reservoir was executed on 10 May 1999, and amended on 10 July 2003. Project Cooperation Agreement for Thornton Reservoir was executed on 18 September 2003. The non-Federal sponsor is expected to make all required payments concurrently with project construction. The current non-Federal cost estimate for the McCook Reservoir is \$114,000,000, which includes a cash contribution of \$ 76,098,000 and is a decrease of \$15,050,000 from the non-Federal cost estimate of \$129,050,000 noted in the Project Cooperation Agreement, which included a cash contribution of \$99,978,000. The current non-Federal cost estimate for the Thornton Reservoir is \$68,000,000, which includes a cash contribution of \$13,600,000 and is a decrease of \$5,000,000 from the non-Federal cost estimate of \$73,000,000 noted in the Project Cooperation Agreement, which included a cash contribution of \$14,600,000.

**COMPARISON OF FEDERAL COST ESTIMATE:** The current Federal cost estimate of \$547,000,000 is a decrease of \$7,000,000 from the latest estimate (\$554,000,000) presented to Congress (FY 2007). This change is due to price levels and inflation adjustments.

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT:** Public and Agency review of final Environmental Impact Statement and the Special Reevaluation Report (EIS/SRR) for the McCook Reservoir project was completed in December 1998 and the Record of Decision (ROD) was signed on May 5, 1999. The Thornton Reservoir Environmental Assessment and Finding of No Significant Impact were signed in June 2001 and December 2001 respectively. The Thornton Reservoir Limited Reevaluation Report was completed in July 2003.

**OTHER INFORMATION:** Funds to initiate PED were appropriated in FY 1988. Funds to initiate construction were appropriated in FY 1994. The scheduled completion date is the same as the latest presented to Congress (FY 2007), "To Be Determined".

SEPARABLE ELEMENT: McCook Reservoir, Illinois

SUMMARIZED FINANCIAL DATA

Estimated Federal Cost		\$ 343,000,000
Non-Federal Cost		114,000,000
Cash Contributions	76,098,000	
Other Costs	37,902,000	
Total Estimated Project Cost		\$ 457,000,000

REMAINING BENEFIT-REMAINING COST RATIO: 4.8 to 1 at 7 percent

TOTAL BENEFIT-COST RATIO: 2.4 to 1 at 7 percent

SEPARABLE ELEMENT: Thornton Reservoir, Illinois

SUMMARIZED FINANCIAL DATA

Estimated Federal Cost		\$204,000,000
Non-Federal Cost		68,000,000
Cash Contributions	13,600,000	
Other Costs	54,400,000	
Total Estimated Project Cost		\$272,000,000

REMAINING BENEFIT-REMAINING COST RATIO: 1.7 to 1 at 7 percent

TOTAL BENEFIT-COST RATIO: 1.2 to 1 at 7 percent.



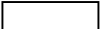





Division: Great Lakes and Ohio River

District: Chicago

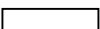



McCook and Thornton Reservoirs, IL

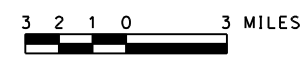
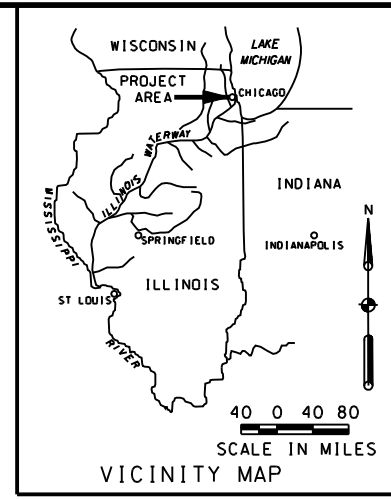
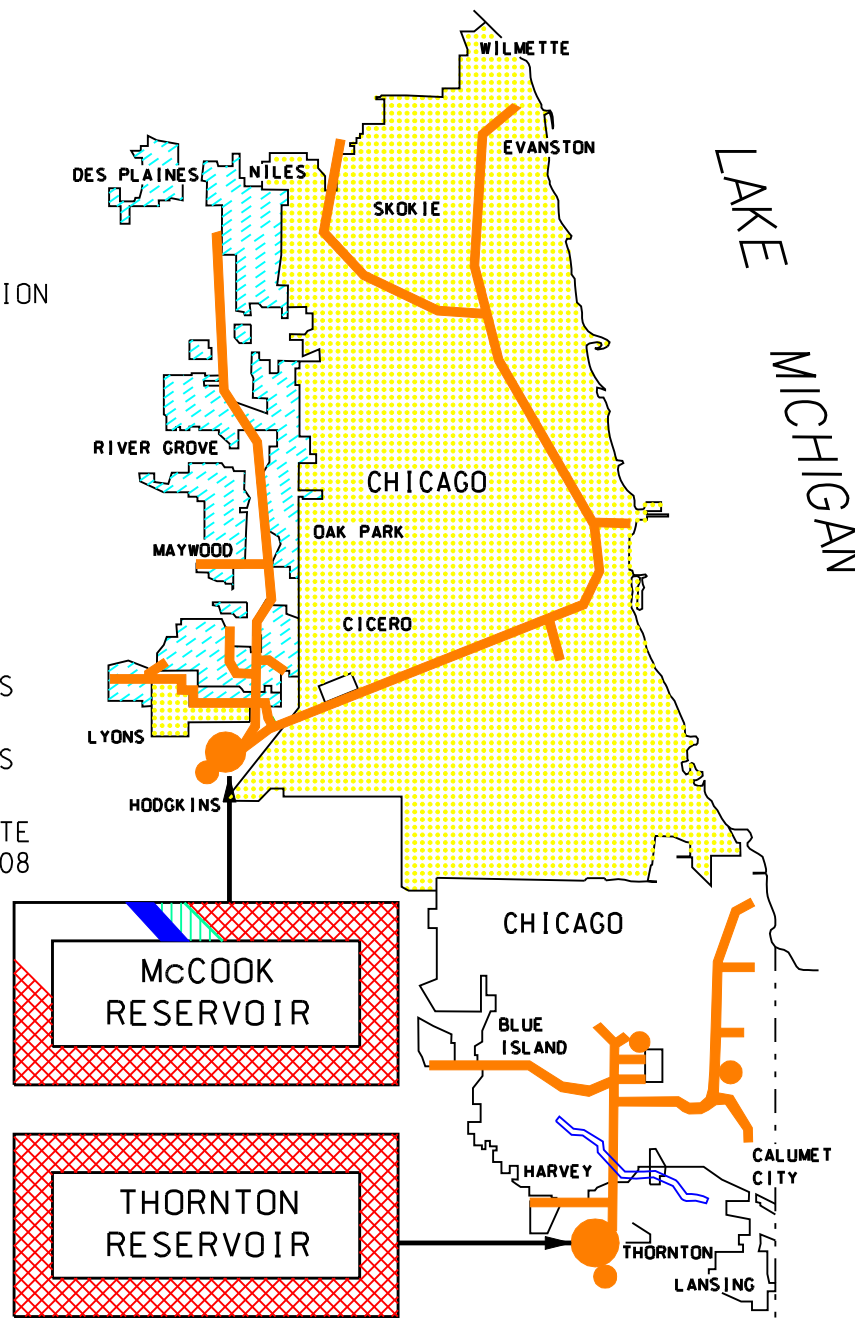
5 February 2007

SYMBOL LEGEND

-  DES PLAINES SYSTEM
-  MAINSTREAM SYSTEM
-  CALUMET SYSTEM
-  COMPLETED TUNNELS
-  TUNNELS UNDER CONSTRUCTION
-  FUTURE TUNNELS
-  STORAGE RESERVOIR
-  PUMPING STATIONS

LEGEND

-  WORK COMPLETED AS OF 30 SEPTEMBER 2006
-  WORK PROPOSED WITH FUNDS AVAILABLE FOR FY 2007
-  WORK PROPOSED WITH FUNDS REQUESTED FOR FY 2008
-  WORK REQUIRED TO COMPLETE THE PROJECT AFTER FY 2008



CHICAGOLAND UNDERFLOW PLAN  
ILLINOIS  
McCOOK & THORNTON RESERVOIRS  
CHICAGO DISTRICT  
GREAT LAKES AND  
OHIO RIVER DIVISION  
5 FEBRUARY 2007

APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Metropolitan Region of Cincinnati, Duck Creek, Ohio (Continuing)

LOCATION: The project encompasses 3.2 miles of stream reach in the City of Cincinnati and the Village of Fairfax, in Hamilton County, Ohio.

DESCRIPTION: The recommended plan consists of 1,200 feet of stream channel relocation; 8,500 feet of streambank protection; 3,300 feet of earth levees; 7,100 feet of concrete floodwalls; 1,250 feet of precast concrete arch culvert, widening of one railroad bridge; demolition of one abandoned highway bridge; one pump station for interior drainage; one automated floodgate closure; one emergency access road; one flood emergency warning system; 32.1 acres of permanent easements and 10.0 acres of temporary easements; and environmental mitigation. All work is programmed.

AUTHORIZATION: Water Resources Development Act of 1996 and Water Resources Development Act of 2000.

REMAINING BENEFIT-COST RATIO: 4.9 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 1.4 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 1.26 to 1 at 7 3/4 percent (FY 1997).

BASIS OF BENEFIT-COST RATIO: Project Design Memorandum for Duck Creek, Ohio, dated January 1996, at January 1996 price levels. An economic update of the Duck Creek, Cincinnati, OH study was completed in September 2000 at October 2000 price levels. An Engineering Document Report was approved in September 2003 at October 2002 price levels.

SUMMARIZED FINANCIAL DATA		STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$39,144,000	Entire Project	62	Sep 2009
Estimated Non-Federal Cost	4,200,000			
Cash Contribution	2,167,000			
Other Costs	2,033,000			
Total Estimated Project Cost	\$43,344,000			
			PHYSICAL DATA	
		Levees	3,300 ft.	Access Road 1
		Floodwalls	7,100 ft.	Widen R.R. Bridge 1
		Channel Relocation	1,200 ft.	Pump Station 1
		Streambank Protection	8,500 ft.	Permanent Easements 32ac
		Triple Box Culvert	1,250 ft.	Demolish Hwy Bridge

Division: Great Lakes & Ohio River

District: Louisville  
7 February 2007

Metropolitan Region of Cincinnati, Duck Creek, OH

SUMMARIZED FINANCIAL DATA (Continued)

		ACCUM. PCT OF EST. FED. COST
Allocations to 30 September 2004	\$ 18,376,000	
Allocations for FY 2005	1,638,000	
Allocations for FY 2006	1,633,000	
Conference Allowance for FY 2007	5,650,000	
Allocation for FY 2007	5,650,000	
Allocations through FY 2007	27,297,000 1/	70
Allocation Requested for FY 2008	\$11,847,000	100
Programmed Balance to Complete after FY 2008	0	
Unprogrammed Balance to Complete after FY 2008	0	

1/ Assumed allocation. Final, actual allocation yet to be determined.

JUSTIFICATION: Duck Creek suffers from frequent flash flooding affecting people, roads, utilities, 9 residential properties, and 32 commercial/industrial properties valued at \$62.4 million; threatens over 1,000 jobs in manufacturing; and disrupts production. There have been two drownings within the Duck Creek watershed since authorization of the project in WRDA 1996. During flood conditions, the velocity of the creek, at overbank locations, is approximately 2 feet per second. The depth of flooding is approximately 5 feet with a warning time for egress of about 20 minutes. Numerous cars and other vehicles have been damaged and swept away by the flash flooding. Occupants are often forced to climb from vehicle windows and wade to higher ground or await rescue by emergency responders. The most recent out-of-bank flooding causing property damage occurred in June 1997, July 2001, and May 2003. Threatening flood conditions occurred 3 times in a two-month period during 2005. The potential for frequent damaging floods and for less frequent but catastrophic flooding exists during any given year. Flood waters enter existing structures during events as small as a 2-year flood. Additional significant flooding occurred in 1982 and 1985. These two floods are estimated to have been a 25-year frequency event and a 10-year frequency event, respectively. Average annual damages are estimated at \$3.9 million. The recommended plan reduces average annual flood damages by 94 percent and provides a uniform 100-year level of protection for the three protected areas.

Average annual benefits at 7 percent are as follows

Annual Benefits	Amount
Flood Control	\$ 4,213,000
Advance Bridge Replacement Location	61,000 9,000
Total	\$ 4,283,000

JUSTIFICATION (Continued):

The Budget includes funding for this project primarily to address a significant risk to human safety. The Corps made this determination based on many factors such as the likelihood and magnitude of the potential flooding, the number of people living in the flood plain, the likely warning time, the availability of evacuation routes, and site-specific engineering factors.

FISCAL YEAR 2007: The allocated amount will be applied as follows:

Award Phase 4B contract	3,962,000
Federal Land Acquisition	800,000
Federal Admin of Real Estate	50,000
Continue Planning, Engineering and Design	477,000
Construction Management	361,000
Total	\$5,650,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Complete Phase 4B Contract	5,447,000
Award and Complete 4C Contract	3,974,000
Environmental Mitigation Contract	92,000
Complete Federal Land Acquisition	1,096,000
Federal Admin of Real Estate	50,000
Complete Planning, Engineering and Design	154,000
Construction Management	1,034,000
Total	\$11,847,000

NON-FEDERAL COSTS: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986 and modified by the Water Resources Development Act of 2000, the non-Federal sponsor must comply with the requirements listed below.

Requirements of Local Cooperation	Payments During Const/Reimb	Annual OMRR&R Costs
Provide lands, easements, rights of way, and borrow and excavated or dredged material disposal areas.	\$ 1,787,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	246,000	

NON-FEDERAL COSTS (Continued)

Pay approximately 5 percent of the costs allocated to flood control to bring the total non-Federal share of flood control costs to 25 percent and bear all costs of operation, maintenance, repair, replacement, and rehabilitation.	2,167,000	\$ 55,000
<b>Total Non-Federal Costs</b>	<b>\$ 4,200,000</b>	<b>\$ 55,000</b>

The non-Federal sponsors have agreed to make all payments concurrently with project construction.

STATUS OF LOCAL COOPERATION: The non-Federal sponsors are the City of Cincinnati, Ohio, and the Village of Fairfax, Ohio. The terms of the Project Cooperation Agreement (PCA) have been discussed with each sponsor and each understands its responsibilities. The PCA was executed in December 1997. A PCA amendment to support the new authorized total project cost and maximum non-federal cost was executed in September 2004. In May 1993, the Cincinnati City Council approved a rate increase by the Cincinnati Stormwater Management Utility that included funds for the city's share of project costs. Construction of flood damage reduction features is nearing completion in the Village of Fairfax.

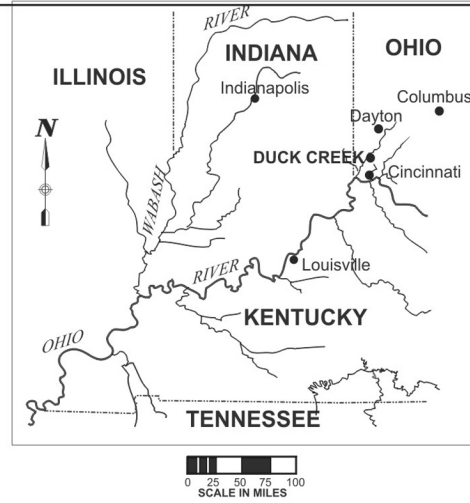
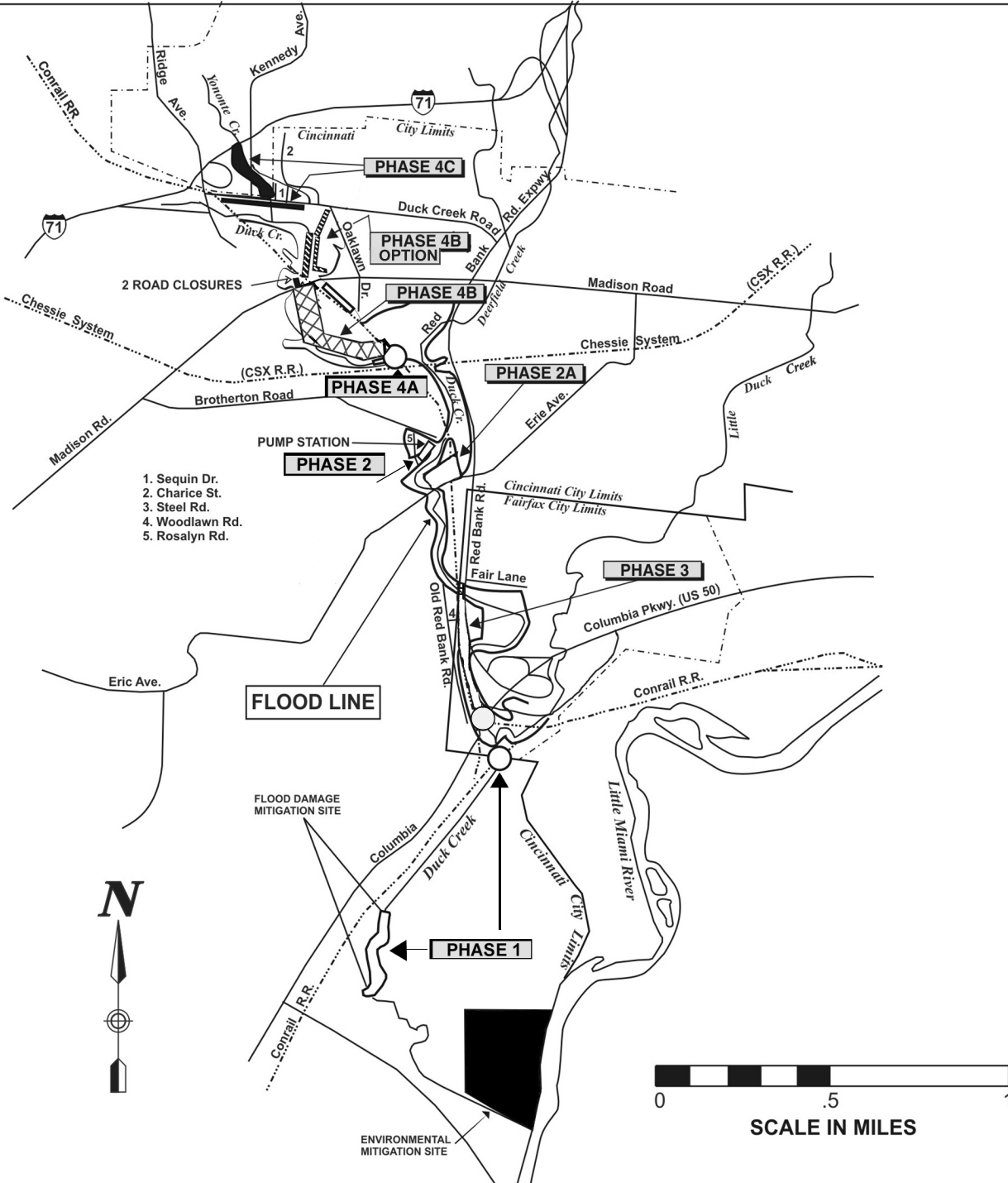
The current non-Federal cost estimate of \$4,200,000, which includes a cash contribution of \$2,167,000, is the same as the last non-Federal cost estimate presented to Congress (FY 2007). The cost estimate reflects the project's modified authorization in the Water Resources Development Act of 2000, which capped the non-Federal sponsor's costs.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$39,144,000 is an increase of \$2,060,000 from the latest estimate (\$37,084,000) presented to Congress (FY 2007). The change includes the following items:





Item	Amount
Design Changes	\$ 1,644,000
Price Escalation on Construction Features	\$ 416,000
<b>Total</b>	<b>\$ 2,060,000</b>

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: An Environmental Assessment was conducted and a Finding of No Significant Impact was signed on 14 January 1994.

OTHER INFORMATION: Funds to initiate preconstruction engineering and design were appropriated in FY 1994. Funds to initiate construction were appropriated in FY 1997. The scheduled completion date has changed from the latest present to Congress (FY 2007) "To Be Determined" to Sep 2009 due to the project being fully funded with the FY 08 Appropriation.



**Legend - Status of Work**

-  Work completed as of September 2006
-  Work underway with funds available for FY07
-  Work proposed with funds requested for FY08
-  Work required to complete the project after FY08

**DUCK CREEK, OHIO**

LOUISVILLE DISTRICT  
GREAT LAKES AND  
OHIO RIVER DIVISION <sup>84</sup>

5 February 2007



FLOOD AND COASTAL STORM DAMAGE REDUCTION

CONSTRUCTION

MISSISSIPPI VALLEY DIVISION

APPROPRIATION TITLE: Construction, General – Local Protection (Flood Control)

PROJECT: East St. Louis, Illinois (Continuing)

LOCATION: The project is located in St. Clair and Madison Counties, Illinois, along the left bank of the Mississippi River between river miles 175 and 195 above the Ohio River.

DESCRIPTION: The project consists of rehabilitation of 21 small gravity drains, 10 large gravity drains (gatewells), 20 closure structures, and 300 relief wells; minor floodwall and levee rehabilitation work; rehabilitation of 12 pumping stations and 3 drainage control structures; replacement of 3 bridge structures, abandonment and removal of 4 bridge structures and 6 segments of channel rehabilitation. All work, except bridges, is programmed. The bridge work, which is unprogrammed, will be performed at 100 percent non-Federal cost.

AUTHORIZATION: Energy and Water Development Appropriations Act of 1988 (PL 100-202).

REMAINING BENEFIT-REMAINING COST RATIO: 8.9 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 6.9 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 4.6 to 1 at 8 7/8 percent (FY 1988).

BASIS OF BENEFIT-COST RATIO: Benefits are from the Supplemental Project Report, completed March 1999.

SUMMARIZED FINANCIAL DATA			ACCUM PCT OF EST FED COST	STATUS (1 Jan 2007)	PCT CMPL	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost		\$ 39,636,000		Entire Project	93	To Be Determined
Programmed Construction	39,636,000					
Unprogrammed Construction	0					
PHYSICAL DATA						
Estimated Non-Federal Cost		16,956,000		Floodwall & Levee Work		
Programmed Construction	13,071,000			Small Gravity Drains		21
Cash Contributions	9,605,000 <sup>‡</sup>			Large Gravity Drains		10
Other Costs	3,466,000			Closure Structures		20
Estimated Non-Federal Cost				Relief Wells		300
Unprogrammed Construction	3,885,000			Pumping Stations		12
Other Costs	3,885,000			Drainage Control Structures		3
Total Estimated Programmed Construction Cost		\$ 52,707,000		Bridge Replacements		3
Total Estimated Unprogrammed Construction Cost		3,885,000		Bridge Abandonment and Removal		4
Total Estimated Project Cost		56,592,000		Channels		6 segments
Allocations to 30 September 2004		32,750,000				
Allocation for FY 2005		436,000				
Allocation for FY 2006		990,000				
Conference Allowance for FY 2007		TBD				
Allocation for FY 2007		2,960,000 *				
Allocations to 30 September 2007		37,136,000	94			
Allocation Requested for FY 2008		2,500,000	100			
Programmed Balance to Complete After FY 2008						
Unprogrammed Balance to Complete After FY 2008		0				
		0				

<sup>‡</sup> A cash contribution of \$12,504,000 is partially offset by a credit of \$2,899,000 for work-in-kind on completed work.

\* Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: The original project, authorized by the Flood Control Act of 1936, provides protection for 85,000 acres of business, industrial and residential areas, including East St. Louis, Granite City, Madison, Venice, Brooklyn, Fairmont and Sauget, Illinois. Urban design flood protection is provided for a Mississippi River flood stage of 52 feet on the St. Louis, Market Street gage. The project protects the largest urbanized Mississippi River floodplain north of New Orleans. The rehabilitation project was authorized by the Energy and Water Development Appropriations Act of 1988. As a result of failure of a deteriorated roller gate, localized flooding occurred in 1986 causing the evacuation of 1,200 persons and an estimated \$35,000,000 in damages. The need for extensive rehabilitation work was verified during preparation of a General Design Memorandum for the project during Fiscal Year 1990. The extensive rehabilitation work needed is the result of several decades of deferral of required project maintenance due to the limited financial capability of the local sponsor, Metro East Sanitary District. A tax referendum, which was passed in February 1989, provides the Metro East Sanitary District with increased tax revenue necessary to cost share in the rehabilitation project and to perform the necessary maintenance of the project after the rehabilitation is completed. The average annual benefits, all flood control, are \$30,159,000.

FISCAL YEAR 2007: Current year funds will be used as follows:

Complete:	
North Pump Station Triple Box Culvert, Phase 1	\$1,450,000
Sand Flank Levee Slurry Trench, Phase 2	900,000
Planning, Engineering, and Design	350,000
Construction Management	260,000
Total	\$2,960,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Complete North Pump Station Triple Box Culvert, Phase 2	\$2,000,000
Planning, Engineering, and Design	250,000
Construction Management	250,000
Total	\$2,500,000

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below.

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Provide lands, easements, rights-of-way, and dredged material disposal areas.	\$ 613,000	
Pay 23.9 percent of the costs allocated to flood control to bring the total non-Federal share of flood control costs to 25 percent, as determined under Section 103(m) of the Water Resources Development Act of 1986 to reflect the non-Federal sponsor's work-in-kind credit based on Section 215 of the Flood Control Act of 1968.	12,504,000	\$ 426,000
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities where necessary for construction of the project.	3,839,000	
<b>Total Non-Federal Costs</b>	<b>\$16,956,000</b>	<b>\$ 426,000</b>

Local interests are also required to operate and maintain all works after completion.

STATUS OF LOCAL COOPERATION: The local sponsor, the Metro East Sanitary District, is strongly supportive of the project. A tax referendum passed in February 1989, provided sufficient funds for local sponsorship of the project. Three Project Cooperation Agreements were executed for this project. The Project Cooperation Agreement for the first construction item was executed in November 1989. The second Project Cooperation Agreement was executed on 11 December 1990. The third Project Cooperation Agreement was executed on 11 March 1992. Amendment No. 1 to the third Project Cooperation Agreement, crediting the local sponsor for costs of work-in-kind (Clearing & Excavation of Drainage Channels), was executed on 9 August 1994. Amendment No. 2, executed on 2 September 1997, allows the Corps to award a contract for the previously identified work-in-kind and adds mitigation as a project cost feature. A Third Party Agreement, executed in August 1999 between Metro East Sanitary District and Canteen Creek Drainage District, eliminated the requirement for a fourth Project Cooperation Agreement for this project. The current non-Federal cost estimate of \$16,956,000, which includes a cash contribution of \$12,504,000, is an increase of \$9,352,000 from the non-Federal cost estimate of \$7,604,000 noted in the Project Cooperation Agreement, which included a cash contribution of \$7,062,000. In a financial document dated 19 May 1999, the non-Federal sponsor indicated they are financially capable and willing to contribute the increased non-Federal share. Our analysis of the non-Federal sponsor's financial capability to participate in the project affirms that the sponsor has a reasonable and implementable plan for meeting its financial commitment.

COMPARISON OF FEDERAL COSTS ESTIMATES: The current Federal cost estimate of \$39,636,000 is an increase of \$219,000 from the latest estimate (\$39,417,000) presented to Congress (FY 2007). This change includes the following items:

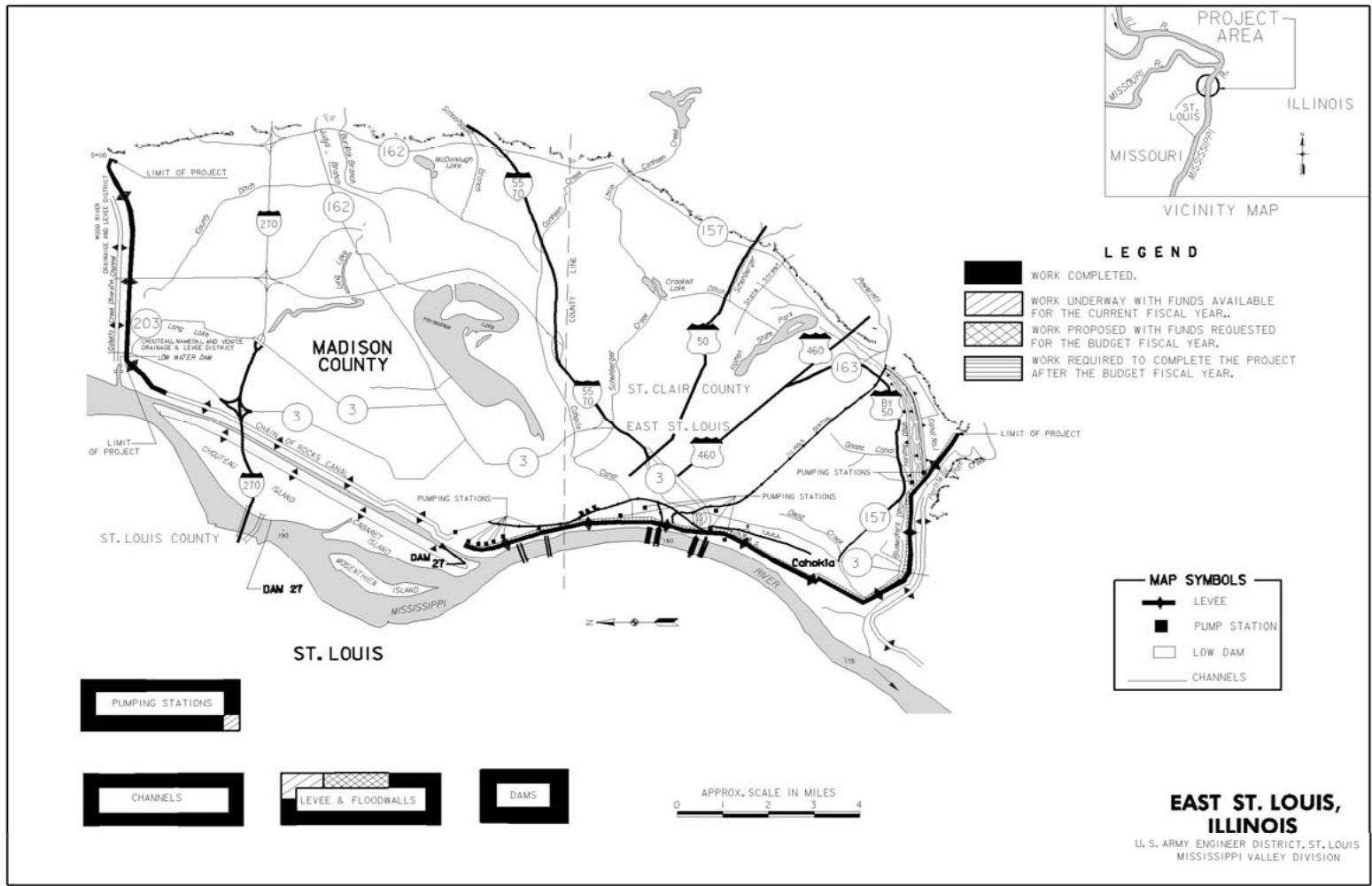
Item	Amount
Price Escalation on Construction Features	\$128,000
Post Contract Award and Other Estimated Adjustments (including Contingency Adjustments)	91,000
Total	\$219,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The project consists of rehabilitation of existing facilities and, for the major part of the project, will not affect environmental conditions except for short-term localized impacts. An environmental assessment and Finding of No Significant Impact was signed by the District Commander on 1 August 1991.

OTHER INFORMATION: Funds to initiate construction were appropriated in Fiscal Year 1988.

As a result of the drainage ditch clearing and excavation, mitigation was approved as a project cost per amendment Number 2 to the third Project Cooperation Agreement and was accomplished on project lands.

Fish and Wildlife mitigation costs are \$19,000.



FLOOD AND COASTAL STORM DAMAGE REDUCTION

CONSTRUCTION

NORTH ATLANTIC DIVISION



APPROPRIATION TITLE: Construction, General - Flood and Storm Damage Reduction

PROJECT: Atlantic Coast of New York City, Rockaway Inlet to Norton Point, Coney Island, New York (continuing)

LOCATION: The project is located on the South shore of Long Island in Brooklyn (Kings County), New York, approximately nine miles south of the Battery, New York City.

DESCRIPTION: Programmed work consists of construction of a 100-foot-wide berm at an elevation of 13 feet above mean low water, a groin at the western end of the restored beach, and a fillet of beachfill extending westward from the groin at West 37th Street. Also included is the construction of T-groins with beachfill westward of the groin at West 37<sup>th</sup> Street. Unprogrammed work includes construction of comfort and lifeguard stations, construction of a groin at east end of project and extending beach seaward of historic shoreline.

AUTHORIZATION: Water Resources Development Act of 1986 as modified by the Intermodal Surface Transportation and Efficiency Act of 1991, amended by WRDA 2000, Section 329.

REMAINING BENEFIT-REMAINING COST RATIO: 6.4 to 1 at 7 percent

TOTAL BENEFIT-COST RATIO: 3.2 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 2.8 to 1 at 8 7/8 percent (FY 1992).

BASIS OF BENEFIT-COST RATIO: Final General Design Memorandum entitled Atlantic Coast of New York City, Rockaway Inlet to Norton Point (Coney Island Area), New York, dated April 1992, at October 1990 price levels.

STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Programmed Work		
Initial Construction	85	To be determined
Periodic Nourishment	0	To be determined
Entire Project	20	To be determined
Unprogrammed Work		
Comfort and Lifeguard Stations	0	Indefinite
Groin and additional Beach Berm	0	Indefinite

Division: North Atlantic

District: New York

Atlantic Coast of New York City, Rockaway Inlet to  
Norton Point, Coney Island, NY

5 February 2007

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SUMMARIZED FINANCIAL DATA:

ACCUM.  
PCT. OF EST.  
FED COST

Estimated Federal Cost			105,800,000
Programmed Construction		71,900,000	
Initial Construction	21,700,000		
Periodic Nourishment		47,700,000	
Comfort and Lifeguard Stations	2,500,000		
Unprogrammed Construction		33,900,000	
Initial Construction	15,900,000		
Periodic Nourishment		0	
Comfort and Lifeguard Stations	18,000,000		
Estimated Non-Federal Cost			53,200,000
Programmed Construction		37,300,000	
Initial Construction	11,700,000		
Cash Contribution	11,700,000		
Other Costs	0		
Periodic Nourishment		25,600,000	
Cash Contributions	25,600,000		
Other Costs	0		
Unprogrammed Construction		15,900,000	
Initial Construction	15,900,000		
Cash Contribution	15,900,000		
Other Costs	0		
Periodic Nourishment		0	
Cash Contributions	0		
Other Costs	0		
Comfort and Lifeguard Stations		0	

PHYSICAL DATA

Berm 100 feet wide at 13 feet NGVD  
Extended berm 165 feet wide at  
8 feet NGVD.  
Groins at the eastern and western  
ends of the restored beach.

Fillet of beachfill extending  
westward from groin at West 37th St.  
Relocation and/or reconstruction  
of existing comfort and lifeguard  
stations.

Division: North Atlantic

District: New York

Atlantic Coast of New York City, Rockaway Inlet to  
Norton Point, Coney Island, NY

SUMMARIZED FINANCIAL DATA: (Continued)

ACCUM.  
PCT. OF EST.  
FED COST

Total Estimated Programmed Construction Cost	109,200,000	
Initial Construction	33,400,000	
Periodic Nourishment	73,300,000	
Comfort and Lifeguard Stations	2,500,000	
Total Estimated Unprogrammed Construction Cost	49,800,000	
Initial Construction	31,800,000	
Periodic Nourishment	0	
Comfort and Lifeguard Stations	18,000,000	
Total Estimated Project Cost		159,000,000
Initial Construction	65,200,000	
Periodic Nourishment	73,300,000	
Comfort and Lifeguard Stations	20,500,000	
Allocation to 30 September 2004	17,027,000	
Allocation for FY 2005	-700,000	
Allocation for FY 2006	800,000	
Conference allowance for FY 2007	0	
Allocation for FY 2007	2,400,000 *	
Allocations through FY 2007	19,527,000	18
Allocation Requested for FY 2008	8,500,000	26
Programmed Balance to Complete after FY 2008	43,873,000	
Unprogrammed Balance to Complete after FY 2008	33,900,000	

\*Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: Erosion had caused serious damage to the shoreline extending through the communities of Coney Island, Brighton Beach, and Sea Gate, New York. Due to this erosion, residential and commercial developments had become increasingly susceptible to storm damage from wave attack and inundation. In March 1962, a severe northeast storm caused breaching and failure of the breach and shore protection structures with damages estimated at \$18,000,000. A recurrence of the March 1962 storm would have caused damages of approximating \$56,000,000 (October 1989 price levels) without the project in place. A 100 year event would cause storm damage by wave attack in excess of \$156,000,000 at October 1993 prices. Project implementation has eliminated these damages.

Fiscal Year 2007: Funds are being used to initiate and complete plans & specifications of the T-Groins downdrift of West 37<sup>th</sup> Street terminal groins, execute PCA amendment and award the basic of "base plus option" construction contract.

Division: North Atlantic

District: New York

Atlantic Coast of New York City, Rockaway Inlet to Norton Point, Coney Island, NY

Fiscal Year 2008: The requested amount will be applied as follows:

Continue T-Groins Construction Sea Gate Area	\$ 8,100,000
Planning, Engineering and Design	\$ 100,000
Construction Management	\$ 300,000
Total	\$ 8,500,000

NON-FEDERAL COSTS: In accordance with the cost sharing and financial concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the Requirements listed below:

	Payments During Construction and Reimbursement	Annual Operation, Maintenance, and Replacement Costs
Requirement of Local Cooperation		
Pay 35 percent of the costs of periodic nourishment allocated to storm damage reduction and 50 percent of the costs allocated to recreation, bear all costs of operation, maintenance and replacement of storm reduction facilities	\$ 53,200,000	\$950,000
Total Non-Federal Costs	\$ 53,200,000	\$950,000

STATUS OF LOCAL COOPERATION: The non-Federal sponsor for this project is the New York State Department of Environmental Conservation. The Local Cooperation Agreement for this project was executed in October 1993. The PCA will be modified in May 2007.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of \$105,800,000 is the same as the latest estimate (105,800,000) presented to Congress (FY 2007).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: A final Supplemental Environmental Impact Statement was filed with the United States Environmental Protection Agency on 5 June 1992.

OTHER INFORMATION: Funds to initiate preconstruction engineering and design were appropriated in FY 1988 and funds to initiate construction were appropriated in FY 1992. The budget funds the initial construction phase of beach nourishment projects that reduce storm damages, but does not support follow-up work for such projects, except to the extent that the operation and maintenance of Federal navigation projects contributed to the erosion of the shoreline.

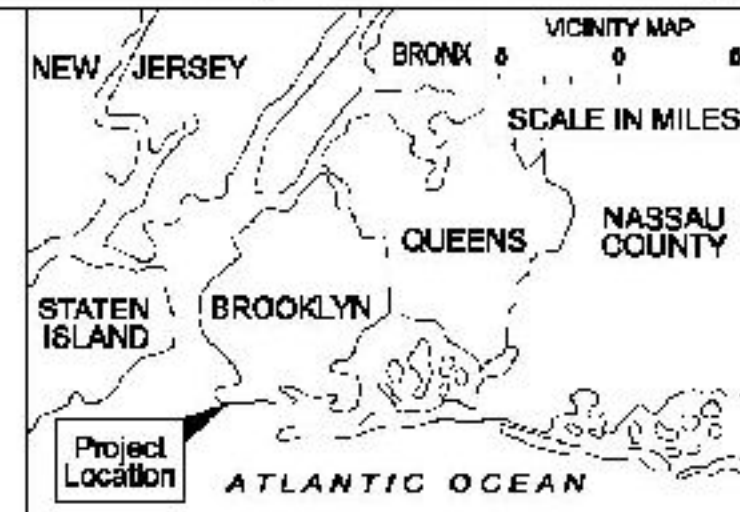
Division: North Atlantic

District: New York

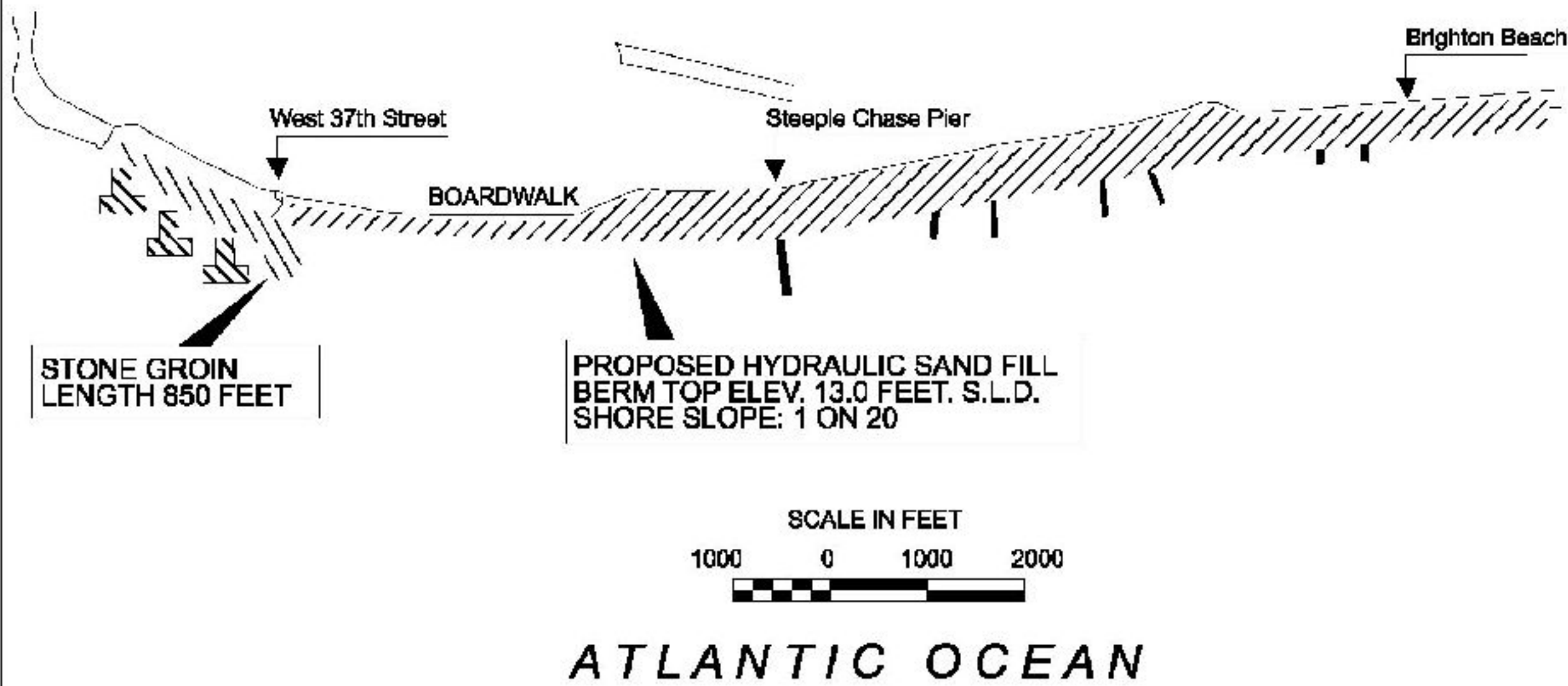
Atlantic Coast of New York City, Rockaway Inlet to Norton Point, Coney Island, NY

5 February 2007

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# CONEY ISLAND



-  Work Completed As of 30 September 2006
-  Work Proposed with Funds Available for FY 2008
-  Work Proposed with Funds Recommended for FY 2008
-  Work Required to Complete the Project after 30 September 2008

Atlantic Coast of New York City  
 Rockaway Inlet to Norton Point, New York  
**CONEY ISLAND AREA**  
 New York District  
 North Atlantic Division  
 1 January 2007

APPROPRIATION TITLE: Construction, General – Flood and Storm Damage Reduction

PROJECT: Fire Island Inlet to Montauk Point, New York (continuing)

LOCATION: The overall project area, extends from Fire Island Inlet easterly to Montauk Point along the Atlantic Coast of Suffolk County. The project is about 83 miles long and comprises about 70 percent of the total ocean frontage of Long Island. Fire Island Inlet is located about 50 miles by water East of the Battery, New York City.

DESCRIPTION: The project provides for beach erosion control and hurricane protection along five reaches of the Atlantic Coast of New York from Fire Island Inlet to Montauk Point. Work includes widening the beaches along the developed areas to a minimum width of 100 feet at an elevation of 14 feet above mean sea level and by raising dunes to an elevation of 20 feet above mean sea level from Fire Island Inlet to Hither Hills State Park and at Montauk and opposite Lake Montauk Harbor, supplemented by grass planting on the dunes, interior drainage structures, construction of up to 50 groins, and subsequent periodic beach nourishment. A reformulation study is underway to evaluate storm damage protection measures. An interim project at Westhampton Beach has been constructed prior to completion of an ongoing overall project reformulation effort. This interim project provides for 30 years of periodic nourishment to maintain a beach berm extending westwardly from Groin 15 to Moriches Inlet at an elevation of 9.5 feet above mean sea level backed by a dune with a height of +15 feet above msl. The Westhampton Beach Interim project also includes tapering of the existing westernmost two groins, construction of a new groin between groins 14 and 15, and beachfill as necessary within the existing groinfield to promote sand transport. A Breach Contingency Plan has been developed which permits closing of breaches of the barrier island with use of a pre-approved Project Cooperation Agreement format, provided that estimated breach costs are no greater than \$5 million. A Decision document was finalized and approved in July 2002 for an interim project to protect the area west of Shinnecock Inlet. This interim project provides for initial beachfill which was initiated in September 2004, in conjunction with the second nourishment of the Westhampton Interim Project. The study for an interim project along Fire Island has been discontinued due to lack of a Non-Federal sponsor.

AUTHORIZATION: River and Harbor Act 14 July 1960, modified by the Water Resources Development Act of 1974, the Water Resources Development Act of 1986, and the Water Resources Development Act of 1992.

REMAINING BENEFIT-REMAINING COST RATIO: 1.7 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 1.3 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 2.6 to 1 at 2 5/8 percent (FY 1963).

SUMMARIZED FINANCIAL DATA

Estimated Federal Cost		591,100,000
Programmed Construction	201,600,000	
Initial Construction	67,000,000	
Periodic Nourishment	134,600,000	
Unprogrammed Construction	389,500,000	
Initial Construction	113,400,000	
Periodic Nourishment	276,100,000	
Estimated Non-Federal Cost		295,200,000
Programmed Construction	83,200,000	
Initial Construction	19,500,000	
Cash Contributions	18,800,000	
Other Costs	700,000	
Periodic Nourishment	63,700,000	
Cash Contribution	63,700,000	
Other Costs	0	
Unprogrammed Construction	212,000,000	
Initial Construction	59,200,000	
Cash Contributions	48,850,000	
Other Costs	10,350,000	
Periodic Nourishment	152,800,000	
Cash Contribution	152,800,000	
Other Costs	0	
Total Estimated Programmed Construction	284,800,000	
Initial Construction	86,500,000	
Periodic Nourishment	198,300,000	
Total Estimated Unprogrammed Construction Cost	601,500,000	
Initial Construction	172,600,000	
Periodic Nourishment	428,900,000	
Total Estimated Project Cost		886,300,000
Initial Construction	259,100,000	
Periodic Nourishment	627,200,000	

STATUS: (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Reach 2		
11 groins	100	Oct 1966
4 groins	100	Nov 1970
8 groins	0	<u>1/</u>
Westhampton Interim		
Initial Construction	100	Dec 1997
Periodic Nourishment	20	Sep 2027
West of Shinnecock Interim		
Initial Construction	100	Mar 2005
Periodic Nourishment	30	Sep 2011
Balance of Reach	0	<u>1/</u>
Reach 4		
2 groins	100	Sep 1965
Beach Fill-18.4 mi.	0	<u>1/</u>
Balance of Project		
Dune/Beach Fill-39.7 mi	0	<u>1/</u>
27 groins	0	<u>1/</u>
Reformulation Study	90	Sep 2008
Studies for Interim Projects		
Fire Island	90	<u>2/</u>
West of Shinnecock	100	Dec 2002
Beach Contingency Plan	100	Jan 1996

1/ Schedule is dependent on the outcome of the Reformulation effort.

2/ Study terminated due to lack of a non-federal sponsor and environmental issues that will be addressed in the overall reformulation effort

PHYSICAL DATA  
 Dunes and beach replenishment:73,5 miles  
 Dunes: raise to elevation 20 feet above msl Beaches: widen to a minimum of 100 ft Interior drainage structures: 3 gated culverts  
 Groins: 52  
 Periodic nourishment: 480,000 cubic yards/yr

ACCUM.  
PCT. OF EST.  
FED. COST

SUMMARIZED FINANCIAL DATA (continued)

Allocations to 30 September 2004	68,137,000	
Allocation for FY 2005	7,547,000	
Allocation for FY 2006	1,856,000	
Conference Allowance for FY 2007	N/A	
Allocation for FY 2007	2,500,000	*
Allocations Through FY 2007	80,040,000	14/
Allocation Requested for FY 2008	4,150,000	14/
Programmed Balance to Complete		
After FY 2008	117,410,000	
Unprogrammed Balance to Complete		
After FY 2008	389,500,000	

\*Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: Erosion has seriously reduced the width of the shoreline in the study area with consequent exposure of the shore and the mainland to wave attack and inundation damages. A recurrence of the hurricane tide of record (September 1938) when 45 lives were lost, would cause inundation and wave damage estimated at \$717,000,000 (April 1996 price levels). As a result of the 11 December 1992 storm, in the Westhampton area (Section 1B of Reach 2), over 200 residential structures were destroyed and two breaches of the barrier island occurred. Closure costs for these breaches in 1992 was approximately \$6,600,000.

FISCAL YEAR 2007: The allocated amount is being used to continue West of Shinnecock and Westhampton Beach required environmental monitoring, and the reformulation study.

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue West of Shinnecock (Required Environmental Monitoring)	400,000
Continue Westhampton Beach(Required Environmental Monitoring)	400,000
Initiate and complete 3 <sup>rd</sup> cycle of Periodic Nourishment for Westhampton Interim Project	2,600,000
Complete Reformulation Study	750,000
Total	\$4,150,000

Division: North Atlantic

District: New York

Fire Island Inlet to Montauk Point, NY

5 February 2007

100



NON-FEDERAL COSTS: Local interests are required to bear 30 percent of the total project cost including periodic nourishment, for the Westhampton Interim project and 35 percent of the total project cost for the Reformulation project, which includes the value of lands, easements, and rights-of-way.

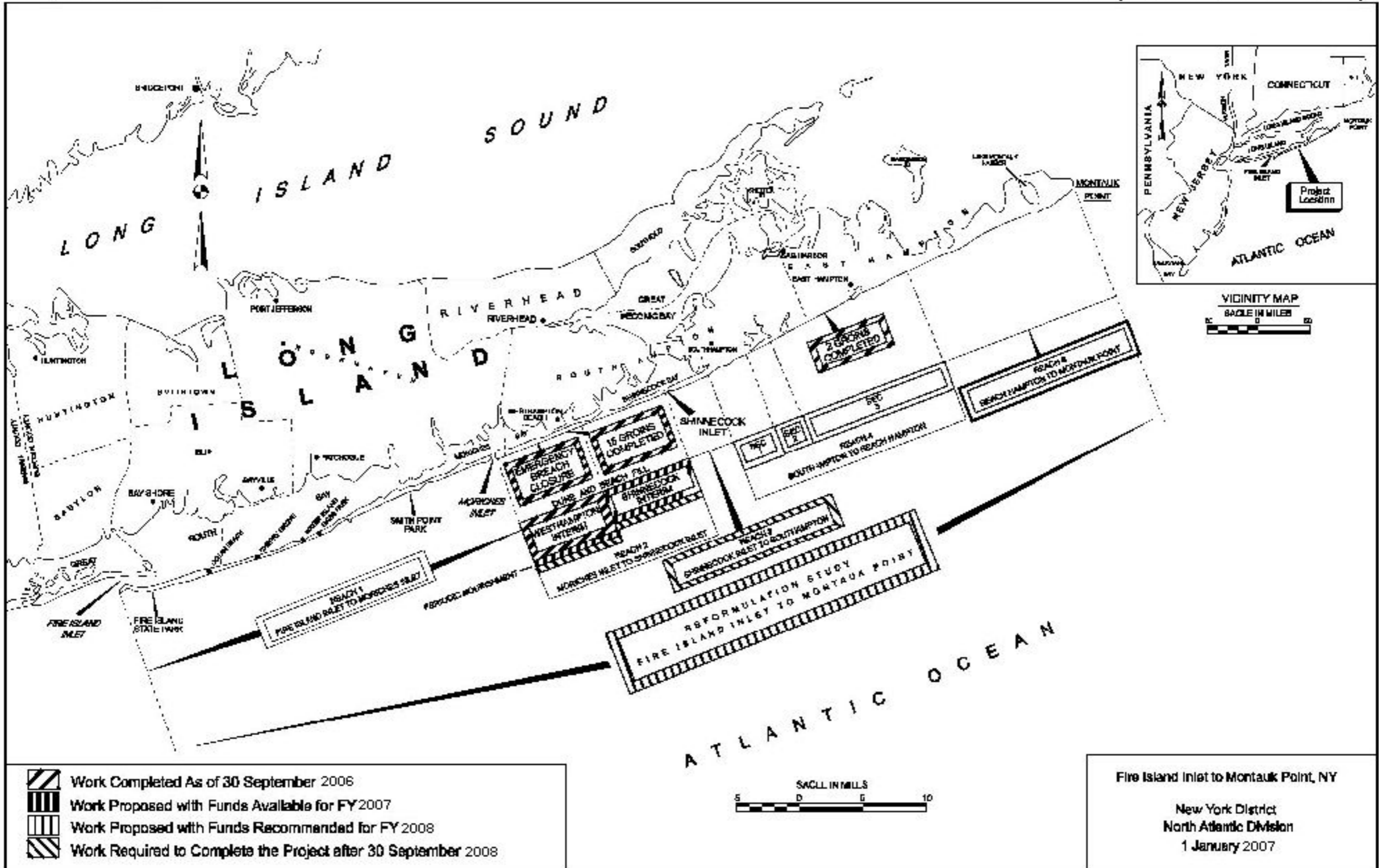
Requirements of Local Cooperation:	Payments During Construction and Reimbursements	Annual Operation Maintenance and Replacement Costs
Provide all lands, easements, and rights-of-way, and relocations.	\$ 11,050,000	
Pay 30 percent of the first costs for the Westhampton Interim project and 35 percent of the first costs for the remainder of the project including creditable lands and easements and rights of way, and bear all costs of operation and maintenance and replacement of storm damage reduction facilities.	67,650,000	\$0
Pay 30 percent of the periodic nourishment cost for the Westhampton Interim project and 35 percent of the periodic nourishment cost for the remainder of the project.	216,500,000	
Total Non-Federal Costs	\$ 295,200,000	\$0

STATUS OF LOCAL COOPERATION: The agency responsible for local cooperation is the New York State Department of Environmental Conservation (NYSDEC). Assurances of local cooperation were executed by the NYSDEC on 14 August 1963 and accepted by the Federal Government on 20 August 1963. A project cooperation agreement (PCA) for the Westhampton Interim project was executed in February 1996. A PCA for the West of Shinnecock project was executed in December 2003.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of \$591,100,000 is the same as the latest estimate (\$591,100,000) presented to Congress (FY 2007).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final Environmental Impact Statement (EIS) was filed with the Environmental Protection Agency (USEPA) on 28 January 1978. On 7 March 1978, the Department of the Interior (DOI), supported by other agencies referred the EIS to the Council on Environmental Quality (CEQ) as unacceptable. Subsequent to the strong objections on the projects final environmental impact statement, meetings were held between September 1978 and January 1980 with DOI, USEPA, U.S. Department of Commerce, and NYSDEC. Two public scoping meetings were held in October 1979. Subsequently, the Federal agencies agreed to a basis for the reformulation of the Fire Island to Montauk Point project, including a general agreement on the studies necessary to answer the outstanding concerns. An environmental analysis was included in Supplement No. 2 to GDM No. 1 to determine environmentally acceptable measures of beach protection for the critically eroded areas at Westhampton Beach.

OTHER INFORMATION: Initial planning and construction funds were appropriated in FY 1963. The work remaining to be done is completion of construction of Reach 2-Moriches Inlet to Shinnecock Inlet, Reach 4-Southhampton to Beach Hampton, initiation of construction of Reach 1-Fire Island Inlet to Moriches Inlet, Reach 3-Shinnecock to Southhampton, and Reach 5-Beach Hampton to Montauk, as well as the completion of the reformulation effort. The Corps of Engineers concurred with the request by the State of New York to initially construct 11 groins (Reach 2), and 2 groins (Reach 4) with beach fill to be added as necessary but not sooner than 3 years after groin completion. In recognition of the critical condition of the beaches due to earlier storms, the Corps recommended to the State in June 1967 that the 3 year observation period be waived and that construction of urgent hurricane protection be resumed. The State concurred and requested that work be undertaken on additional groins, replacement of beach fill and dunes in Reach 2, as well as construction of groins, drainage structures and dune fill in Reach 4. Suffolk county, however, did not endorse the placement of beach and dune fills. Continuing negotiations during FY 1969 resulted in agreement on a plan for construction for certain groins, drainage structures, beach fill, and dunes to an interim height of 16 feet in Reaches 2 and 4. In December 1973, the State requested planning for Reach 2 (Section 1b), (Westhampton Beach) and Reach 4 (Georgica Pond), indicating that it would provide funds. Planning resumed and assurances were requested from the State in October 1974. However, strong opposition developed with Suffolk County and the county legislature refusing to provide support. Subsequently, erosion of the shoreline downdrift of the groin field at Westhampton Beach accelerated to the point where Dune Road, the only access to the homes in this area, was under water during normal high tide. In December 1992, two breaches occurred in the barrier island near Westhampton Beach, which were subsequently closed. An interim plan for the severely eroded Westhampton Beach area was prepared in June 1994, which provides for a lower level of protection than that provided in the original authorization. This interim plan has been designed such that it could be modified based on future recommendations in the to-be-completed Reformulation study. The USEPA and DOI agreed in concept to the interim plan, provided that a full environmental assessment and/or environmental impact study was completed, and the reformulation of the overall project was reinstated. The planning engineering and design has been completed for an interim project to address the severely eroded shoreline west of Shinnecock Inlet. The initial construction contract for the West of Shinnecock Interim project was awarded in September 2004. An interim plan for Fire Island barrier island has been discontinued due to the lack of a non-federal sponsor and environmental concerns which will be addressed during the reformulation study. The cost of these interim studies is \$4 million. Additionally, a Breach Contingency Plan was approved in January 1996 to provide for rapid response to breaches along the islands while awaiting completion of the reformulation study. In 1984, a lawsuit was brought against Suffolk County, the State of New York and the United States of America, which claimed that the groinfield constructed in the early 1960's caused erosion and damage to downdrift properties. In October 1994, the Village of West Hampton Dunes intervened and a settlement agreement was reached between the plaintiffs and the county, state and Federal governments to provide for storm damage protection and the agreed upon monitoring as described in the Corps 1995 Decision Document, and include periodic nourishment for a period of 30 years



APPROPRIATION TITLE: Construction, General - Flood and Storm Damage Reduction

PROJECT: Muddy River, Boston and Brookline, Massachusetts (Continuing)

LOCATION: The Muddy River is a 3.5 mile urban waterway located in eastern Massachusetts in the communities of Boston, Brookline and Newton. The Muddy River originates at Jamaica Pond and flows through the heart of Frederick Law Olmsted's famed "Emerald Necklace", one of the most carefully crafted park systems in America. The park is located next to several residential neighborhoods and some of the area's most prominent businesses and institutions such as the Museum of Fine Arts, Longwood Medical Center, Northeastern University and Wentworth, Simmons and Emmanuel Colleges.

DESCRIPTION: The flood damage reduction portion of the project involves dredging approximately 65,000 cubic yards of sediment to deepen the Muddy River, removal or replacement of undersized culverts and streambank protection which will provide flood protection against the recurrence of a 20-year event. The ecosystem restoration portion of the project involves dredging approximately 135,000 cubic yards of sediment and restoration of riparian vegetation to improve water quality, enhance aquatic and riparian habitat, and promote recreational use of the river and surrounding parklands. Only flood damage reduction work is programmed. The project would be constructed in two phases. Phase I involves replacement of two undersized culverts, day-lighting two sections of the river and modification of a bridge and culvert headwall for flood damage reduction. Phase II involves dredging of the river for both flood damage reduction and ecosystem restoration.

AUTHORIZATION: Section 552 of the Water Resources Development Act of 2000.

REMAINING BENEFIT-REMAINING COST RATIO: 3.5 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 3.2 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 3.2 to 1 at 6 3/8 percent (FY 2003).

BASIS OF BENEFIT-COST RATIO: Flood damage reduction benefits are based on the economic evaluation contained in the Revised Draft Muddy River Decision Document, dated September 2003. Benefits are expressed at June 2001 price levels.

SUMMARIZED FINANCIAL DATA		ACCUMULATED PCT. OF EST. FED COST	STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$ 43,160,000		Flood damage reduction	0	To be determined
Estimated Non-Federal Cost	26,240,000		Ecosystem Restoration	0	Indefinite
Cash Contribution	\$ 26,150,000		Entire Project	0	Indefinite
Other Costs	90,000				
 Total Estimated Project Cost	 \$69,400,000				
Allocations to 30 September 2004	\$ 1,102,000				
Allocation for FY 2005	229,000				
Allocation for FY 2006	1,485,000				
Conference Allowance for FY 2007	1,000,000				
Allocation for FY 2007	1,000,000 *				
Allocations through FY 2007	3,816,000	9			
Allocation Requested for FY 2008	10,000,000	32			
Programmed Balance to Complete					
After FY 2008	6,194,000	46			
Unprogrammed Balance to Complete					
After FY 2008	23,150,000	100			

PHYSICAL DATA

Flood Damage Recudtion	
Dredging. . . . .	.65,000 cubic yards
Daylighting River. . . . .	.700 linear feet
Replace/Install Culverts. . . . .	.530 linear feet
Ecosystem Restoration	
Dredging. . . . .	135,000 cubic yards
Planting Emergent Vegetation. . . . .	3.5 acres

\*Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: During the past century the Muddy River watershed has experienced the effects of gradual urbanization and is now over 70 percent developed. Flooding has worsened because there is little natural storage remaining in the watershed and the carrying capacity of the river has been restricted by undersized culverts, accumulated sediment, vegetation and debris. Several residential neighborhoods and some of the area's most prominent businesses and institutions are subject to frequent flood damage. In October 1996 a 20 to 25-year storm, caused widespead flooding along the Muddy River. The Kenmore Square Subway Station, part of the Massachusetts Bay Transportation Authority's Green Line, was flooded with over 30 feet of water causing \$51 million in damages and disrupting service for about 6 months. Average annual damages for the Muddy River are estimated at about \$7 million. The proposed project would protect against damages from all floods up to an average recurrence frequency of once in 20 years, as well as reducing damages from larger, more infrequent floods. The average annual benefits, all flood damage reduction, are estimated at \$6,299,500 at June 2001 prices. The Muddy River is the only remaining small urban stream in Boston or Brookline that still provides significant aquatic habitat. Its location within one of the nation's premier historic park systems and close proximity to internationally known medical, cultural and educational institutions further adds to its significance. Accumulated sediment from urban runoff has contributed to poor water quality, loss of aquatic habitat, and proliferation of invasive aquatic and emergent wetland vegetation. Removal of nutrient rich sediment and invasive plant species will significantly improve water quality, restore 8 acres of open water habitat, create more diverse emergent and riparian habitat, and restore the aesthetic quality of the Muddy River.

Division: North Atlantic

District: New England  
5 February 2007

Muddy River, Boston and Brookline, MA

FISCAL YEAR 2007: Funds are being used to complete design of the flood damage reduction elements of the project. Work includes project surveys, geotechnical explorations, foundation design, hydrologic and hydraulic modeling, traffic analysis, project layouts and preparation of project plans and specifications.

FISCAL YEAR 2008: The requested amount will be applied as follows:

Initiate and complete Construction of Phase I Flood Damage Reduction Measures	\$ 9,000,000
Construction Management	950,000
Planning, Engineering and Design	50,000
<b>Total</b>	<b>\$ 10,000,000</b>

NON-FEDERAL COSTS: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below.

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation and Replacement Costs
Provide lands, easements, rights-of-way, and suitable borrow and dredged or excavated material disposal areas, and perform all relocations determined by the Federal Government to be necessary for the construction, operation and maintenance of the project.	\$ 90,000	
Pay 34.9 percent of the costs allocated to flood damage reduction and ecosystem restoration to bring the total non-Federal share of these costs to 35 percent, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood damage reduction and ecosystem restoration facilities.	23,150,000	\$ 197,000
Pay all additional costs for the locally preferred plan to dredge Wards Pond instead of the Federally implementable plan of aeration.	3,000,000	
<b>Total Non-Federal Costs</b>	<b>\$ 26,240,000</b>	<b>\$ 197,000</b>

STATUS OF LOCAL COOPERATION: The City of Boston, in cooperation with the Massachusetts Executive Office of Environmental Affairs and the City of Brookline, is the local sponsor for the project. The City of Boston signed an agreement for design of the entire project on 13 June 2005. The city understands the requirements of local cooperation and is prepared to enter into a Project Cooperation Agreement with the Corps in August 2007. The city will obtain all state and local permits, as well as acquire all lands, easements, rights-of-way, and dredged material disposal areas necessary for project construction.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$43,160,000 is an increase of \$9,750,000 from the latest estimate (\$33,410,000) presented to Congress (FY 2003). This change includes the following items:

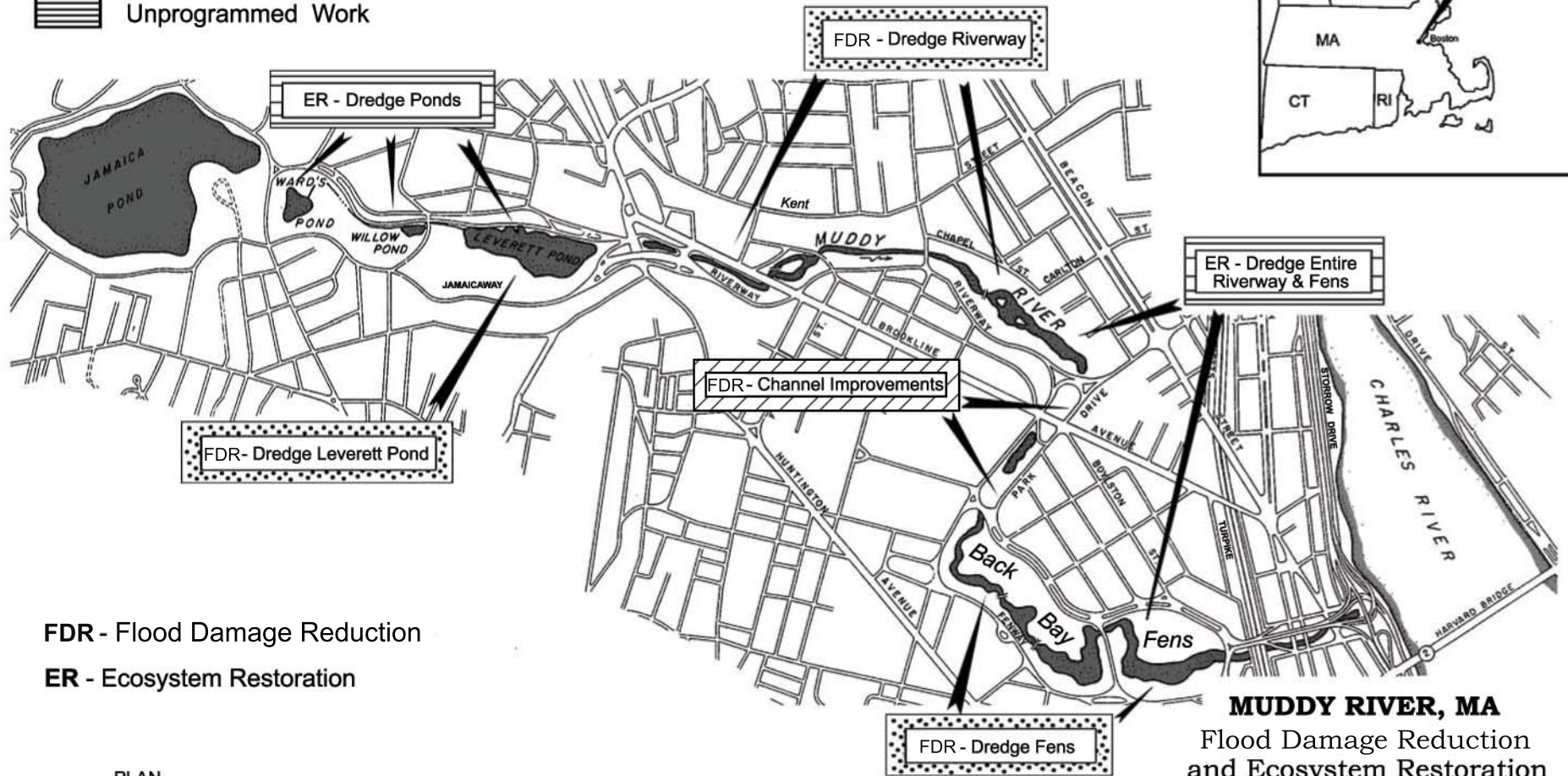
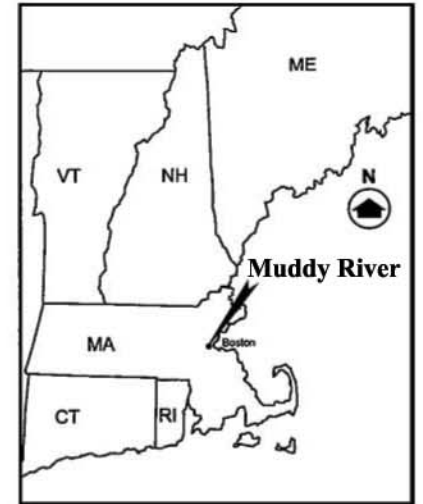
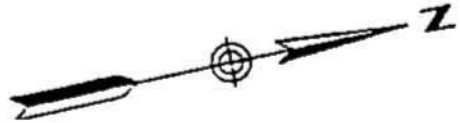
Item	Amount
Price Escalation on Construction Features	\$ 6,650,000
Other Estimating Adjustments	3,100,000
Total	\$ 9,750,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: A draft Environmental Assessment and Finding of No Significant Impact was completed in June 2003.

OTHER INFORMATION: Funds to initiate Preconstruction Engineering and Design (PED) were appropriated in FY 2001. The design agreement was signed on 13 June 2005 with the City of Boston. Funds to initiate construction of the project were first appropriated in FY 2003. In a letter dated 5 July 2004, the Assistant Secretary for the Army (Civil Works) expressed support for the flood damage reduction elements for the project, but determined that the ecosystem restoration elements do not demonstrate environmental significance and are therefore not justified.

**LEGEND**

- None Work Completed as of 30 September 2006
- None Work Underway with Funds available for FY 2007
- Work Proposed with Funds Requested for FY 2008
- Work Required to Complete the Project after FY 2008
- Unprogrammed Work



FDR - Flood Damage Reduction  
 ER - Ecosystem Restoration



**MUDDY RIVER, MA**  
 Flood Damage Reduction  
 and Ecosystem Restoration  
 1 January 2007  
 North Atlantic Division  
 New England District, Corps of Engineers



APPROPRIATION TITLE: Construction, General - Flood and Storm Damage Reduction

PROJECT: Raritan River Basin, Green Brook Sub-Basin, New Jersey (Continuing)

LOCATION: The Green Brook Sub-Basin project area is located within the Raritan River Basin in north-central New Jersey in Middlesex, Somerset and Union Counties. It drains approximately 65 square miles of primarily urban and industrialized area. It includes the following communities: Dunellen, Middlesex Borough, Piscataway, South Plainfield, Bound Brook, Bridgewater, Green Brook, North Plainfield, Warren, Watchung, Berkeley Heights, Plainfield, and Scotch Plains. The project area is divided into three sub-areas: the lower, upper and Stony Brook portions of the sub-basin.

DESCRIPTION: The Project plan consists of a system of levees and floodwalls in the lower portion of the basin, channel modifications and dry detention basins in the upper portion of the basin, and channel modifications in the Stony Brook portion of the sub-basin. The upper portion of the sub-basin has been deferred.

AUTHORIZATION: Water Development Act of 1986.

REMAINING BENEFITS-REMAINING COST RATIO: 2.6 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 1.4 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 1.3 to 1 at 7 5/8 percent (FY 1998).

BASIS OF BENEFIT-COST RATIO: Benefits are from the analysis contained in the Final General Reevaluation Report dated May 1997 at April 1996 price levels.

SUMMARIZED FINANCIAL DATA:		ACCUM. PCT. OF EST. FED. COST
Estimated Federal Cost		309,400,000
Programmed Construction	263,200,000	
Unprogrammed Construction	46,200,000	
Estimated Non-Federal Cost		104,000,000
Programmed Construction	87,700,000	
Cash Contributions	25,500,000	
Other Costs	62,200,000	
Unprogrammed Construction	16,300,000	
Cash Contributions	3,100,000	
Other Costs	13,200,000	
Total Estimated Programmed Construction Cost	350,900,000	
Total Estimated Unprogrammed Construction Cost	62,500,000	
Total Estimated Project Cost	413,400,000	
Allocations to 30 September 2004		52,489,000
Allocations to 30 September 2005		7,285,000
Allocations to 30 September 2006		4,950,000
Allocation for FY 2007		5,000,000
Allocations through FY 2007		69,724,000 23/
Allocation Requested for 2008		10,000,000 26/
Programmed Balance to complete after FY 2008		183,476,000
Unprogrammed Balance to complete after FY 2008		46,200,000

STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Element 1	27	To be determined
Element 2	0	Indefinite
Element 3	3	To be determined
Entire Project	22	Indefinite

PHYSICAL DATA  
Element 1 is lower portion of the basin  
It consists of levees, floodwalls, closure structures  
interior drainage facilities, a bridge reconstruction  
and non-structural measures  
including flood proofing and buyouts  
Element 2(Unprogrammed) is the Upper  
portion of the basin consists of channel  
modifications and two dry detention  
basins. Elements 3 is the Stony Brook Portion  
of the basin.

\*Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: The project area suffers annual flood damages of \$41,000,000 (Apr 96 P.L.) without the project. On August 28, 1971 Hurricane Doria caused \$85,200,000 in damages (Oct 95 P.L.). Another major storm occurred on August 2, 1973 which caused \$89,300,000 in damages (Oct 95 P.L.). Flooding was so extensive that the area was designated a Major Disaster Area. Six deaths were attributed to this storm, thirty four people were injured and there were more than 1,000 people evacuated from their residences. Average annual benefits, all flood control, are \$37,773,000 (April 1996 price level).

The Budget includes funding for this project primarily to address a significant risk to human safety. The Corps made this determination based on many factors such as the likelihood and magnitude of the potential flooding, the number of people living in the flood plain, the likely warning time, the availability of evacuation routes, and site-specific engineering factors.

Division: North Atlantic

District: New York

Raritan River Basin, Green Brook Sub-Basin, NJ

5 February 2007

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FISCAL YEAR 2007: The allocated amount is being used for the Conrail Bridge Removal Contract; and for the basic of "base plus option" Talmage Avenue Bridge Raising Contract.

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue Construction of Talmage Avenue Bridge Contract / (Element 1)	\$ 5,500,000
Initiate Segment R2 Levee Contract	\$ 3,500,000
Construction Management	\$ 500,000
Engineering and Design	\$ 500,000
Total	\$ 10,000,000

NON-FEDERAL COSTS: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below:

	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation, and Replacement Costs
Requirements of Local Cooperation Provide lands, easements, rights of way, relocations and borrow excavated or dredged material disposal areas.	\$ 62,200,000	
Pay 25 percent of cost associated with non-structural flood protection	16,300,000	
Pay 6 percent of the costs allocated to flood control, to bring the total non-Federal share of flood control costs to 25 percent, as determined under Section 103 (m) of the Water Resources Development Act of 1986, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	25,500,000	\$1,157,000
Total Non-Federal Costs	\$104,000,000	\$1,157,000

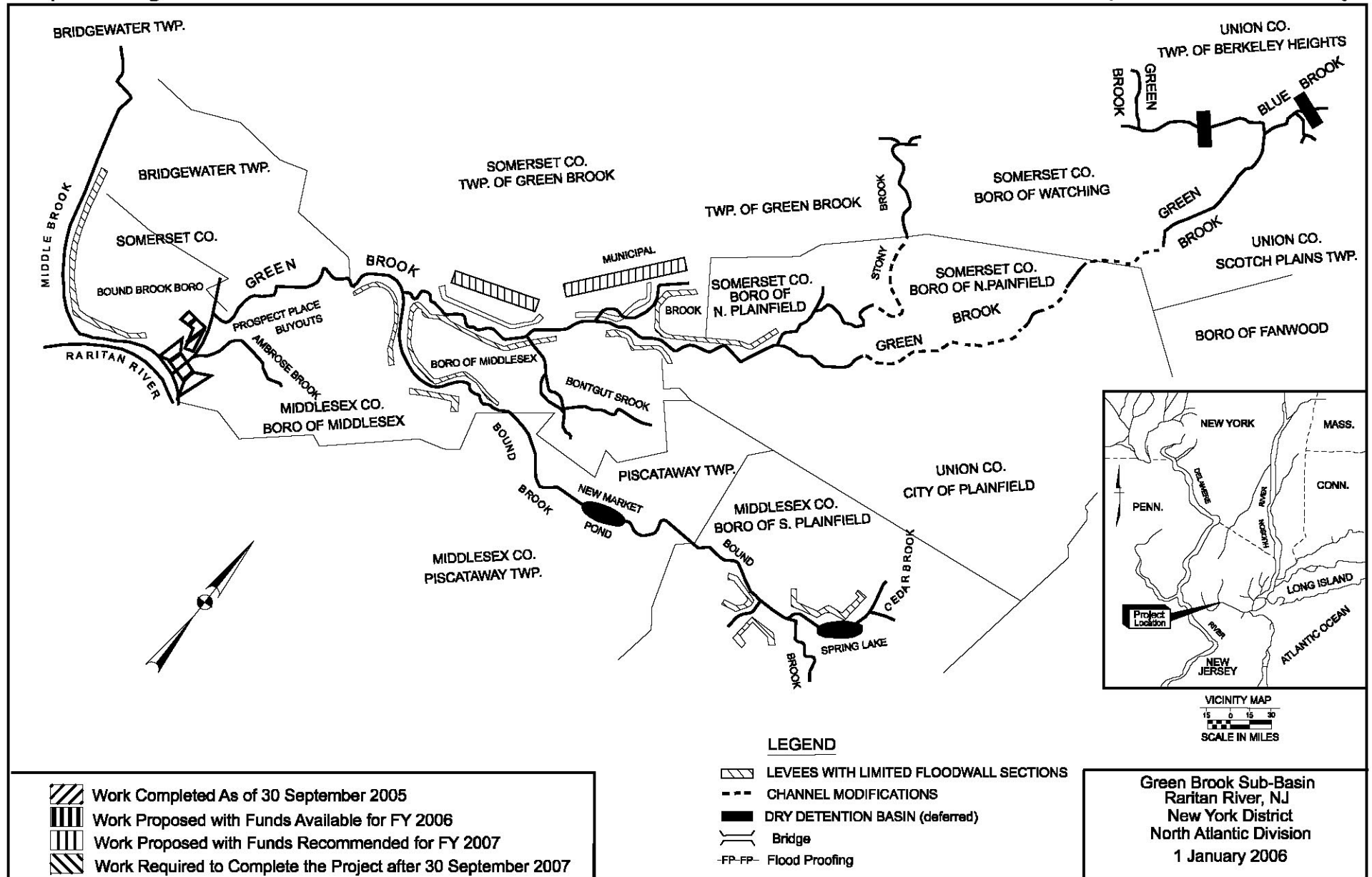
The non-Federal sponsor has also agreed to make all required payments concurrently with project construction.

STATUS OF LOCAL COOPERATION: The State of New Jersey Department of Environmental Protection, provided a letter dated 17 April 1997 stating their support and endorsement of the project. Governor Whitman also provided a letter of support on 26 February 1998. The Green Brook Flood Control Commission has stated their strong support for the project in a letter dated 4 October 1995. Also, several counties and municipalities have adopted resolutions endorsing and supporting the project. The Project Cooperation Agreement was executed in June 1999.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$309,400,000 is the same as the latest estimate (\$309,400,000) presented to Congress (FY 2005).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final Environmental Impact Statement (EIS) was filed in August 1980. A Supplemental Environmental Impact Statement with the Final General Reevaluation Report was released in May 1997 and the Record of Decision was issued in July 1998.

OTHER INFORMATION: Funds to initiate preconstruction engineering and design were appropriated in FY 1986 and funds to initiate construction were appropriated in FY 1998.



FLOOD AND COASTAL STORM DAMAGE REDUCTION  
CONSTRUCTION  
NORTHWESTERN DIVISION

APPROPRIATION TITLE: Construction, Flood Damage Reduction, Fiscal Year 2008

PROJECT: Antelope Creek, Lincoln, Nebraska (Continuing)

LOCATION: Antelope Creek is a right bank tributary of Salt Creek and is located in the city of Lincoln, which is in Lancaster County, Nebraska.

DESCRIPTION: The flood protection project consists of channel improvements upstream and downstream of an existing 4,060 foot long concrete conduit, construction of a channel west of the existing conduit (from the conduit entrance to the railroad bridge), railroad bridge modifications and bridge improvements. The project provides a recreation multipurpose trail to be constructed within the flood protection project limits.

AUTHORIZATION: Sec 101 of WRDA 2000.

REMAINING BENEFIT-REMAINING COST RATIO: 7.8 to 1 at 7 percent

TOTAL BENEFIT-COST RATIO: 1.34 to 1 at 7 percent

INITIAL BENEFIT-COST RATIO: 1.35 to 1 at 6.625 percent.

BASIS OF BENEFIT-COST RATIO: Benefits are from the Chief of Engineers Report (December 2000) based on May 2000 price levels.

SUMMARIZED FINANCIAL DATA:

		ACCUM PCT OF EST FED COST	STATUS (1 Jan 2007)	PCT CMPL	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$28,594,000				
Estimated Non-Federal Cost	\$28,594,000				
Cash Contribution	\$ 3,489,000		Entire Project	72	To be determined
Other Costs	\$25,105,000				
Total Estimated Project Cost	\$57,188,000				
Allocations through 30 September 2004	5,203,000				
Allocations for FY 2005	444,000				
Allocations for FY 2006	2,193,000				
Allocations for FY 2007	7,500,000 *				
Allocations through FY 2007	15,340,000	54			
Allocations Requested for FY 2008	9,000,000	85			
Programmed Balance to Complete after FY 2008	4,254,000				
Unprogrammed Balance to Complete after FY 2008	0				

\* Assumed allocation. Final, actual allocations yet to be determined

## PHYSICAL DATA

### Relocations:

101 utilities,  
2 streets (bridge replacements)  
5 streets (new bridges),  
46 structures (buildings)

### Control Structure:

1 labyrinth weir structure

### Channel:

Length: 2.1 miles  
Contains 100-year flood plain

### Multipurpose Trail (Recreation):

Length: 2.3 miles  
3 trail bridges

### Bridges:

5 new bridges for streets  
2 existing bridge replacements  
1 existing street bridge modification  
1 existing railroad bridge modification

**JUSTIFICATION:** The flood control project will reduce flood damages and the threat to human life along Antelope Creek. The project will confine the 100-year flood within the channel banks and conduit by constructing a channel segment west of the existing conduit which will also restore an open water feature on Antelope Creek that was obliterated when the conduit was constructed in 1915. The existing conduit currently has a capacity of less than a 5-year event. The residential, downtown urban and University of Nebraska-Lincoln city campus areas are subject to frequent flooding when the conduit capacity is exceeded above the 5-year event. Significant flooding recently occurred in the Antelope Creek project area in June 2003. Flood damages in excess of \$1.5 million occurred as the result of an approximate 5-year rainfall event. Any funding delays in constructing the remainder of the project will subject a major portion of the Lincoln downtown urban and residential area and the University of Nebraska-Lincoln campus to prolonged exposure to potentially devastating flood damages. The flood control project will provide annual net benefits of \$4,710,000 and total recreation benefits of \$176,000. The project would remove 219 commercial, industrial, and public structures, and 202 residential structures out of the existing regulatory 100-year flood plain.

The Budget includes funding for this project primarily to address a significant risk to human safety. The Corps made this determination based on many factors such as the likelihood and magnitude of the potential flooding, the number of people living in the flood plain, the likely warning time, the availability of evacuation routes, and site-specific engineering factors.

**FISCAL YEAR 2007:** The allocation amount of \$7,500,000 will be used as follows:

Real Estate Activities	\$ 200,000
Phase 2 construction	6,800,000
Continue Engineering & Design	200,000
Construction Management Activities	<u>300,000</u>
Total	\$ 7,500,000



FISCAL YEAR 2008: The requested amount of \$9,000,000 will be used as follows:

Real Estate Activities	\$ 100,000
Phase 2C/3A Channel Improvements Construction (new contract)	8,000,000
Continue Engineering & Design	100,000
Construction Management Activities (300k continuing contract, 500k new contract)	<u>800,000</u>
Total	\$9,000,000

NON-FEDERAL TOTAL COST: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986 and the project authorization, the non-Federal sponsor must comply with the requirements listed below.

Requirements of Local Cooperation	Payments during Construction and Reimbursements	Annual Operation Maintenance, Repair, Rehabilitation and Replacement Costs
Provide all lands, easements, right-of-ways, and Dredged material disposal areas.	\$19,034,000	
Relocate utilities, buildings, roads, bridges (except railroad bridges), and other facilities required for construction of the project.	\$9,673,000	
Pay 5 percent of the cost allocated to flood control, and bear all cost of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	\$ 2,788,000	\$28,000
Pay 50 percent of costs allocated to recreation, and bear all cost of operation, maintenance, repair, rehabilitation and replacement of recreation facilities.	\$ 700,000	\$19,000
Total Non-Federal Costs	\$32,195,000	
Federal reimbursement of costs in excess of 50 percent of all flood control project costs.	\$ 3,601,000	
Ultimate Non-Federal cost	\$28,594,000	

Communities must agree to adopt additional flood plain management activities, beyond the requirement to participate in the National Flood Insurance

Program, to qualify for Federal participation in a structural flood damage reduction project. These activities include public information and education on flood hazards within the community, flood plain regulation to promote sound use and reduce future flood damages, control of storm water runoff, and preservation of open space.

STATUS OF LOCAL COOPERATION: The City of Lincoln, the University of Nebraska-Lincoln, and the Lower Platte South Natural Resources District are the non-Federal sponsors. The sponsors formed a Joint Antelope Valley Authority (JAVA) that is sponsoring the project. The sponsors strongly support the project and are proceeding with project implementation. The Project Cooperation Agreement (PCA) with JAVA to sponsor the Antelope Creek flood control project was signed on 21 October 2002.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$28,594,000 is an increase of \$786,000 from the latest estimate (\$27,808,000) presented to Congress (FY 2007). This change includes the following items:

Item	Amount
Price Escalation on Construction Features and Changes in Projected Inflation Rates	\$ 256,000
Other Estimating Adjustments	<u>\$ 530,000</u>
Total	\$ 786,000

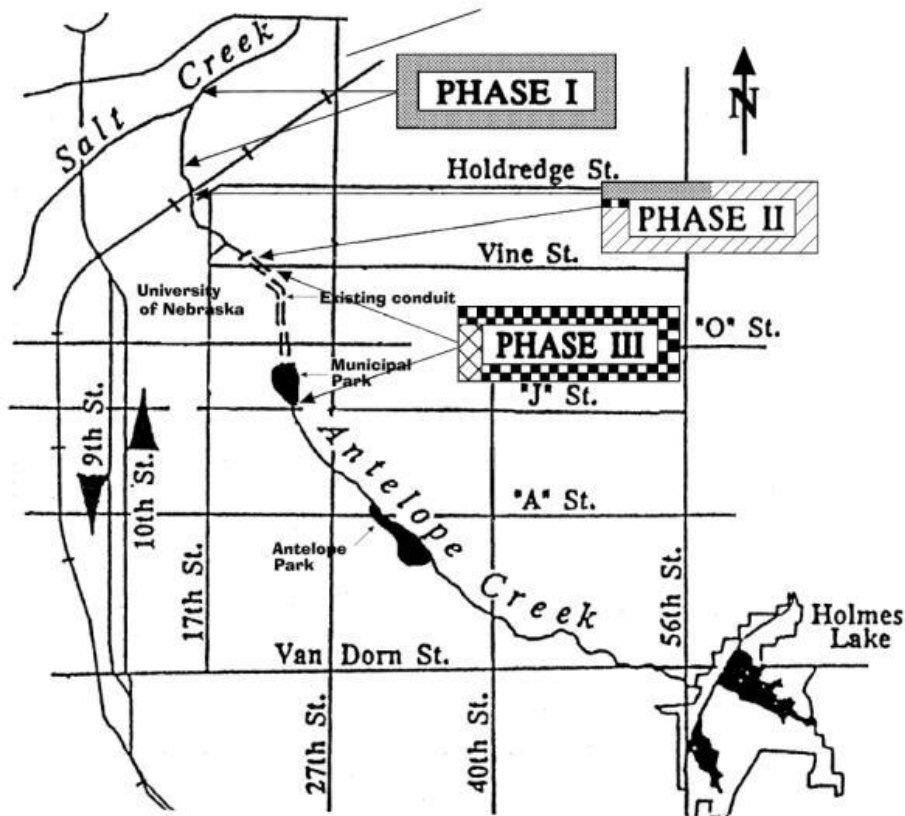
STATUS OF ENVIRONMENTAL IMPACT STATEMENT: An Environment Assessment was prepared and included in the Feasibility Report released to the public for review in June 2000. The Environmental Assessment and the Findings of No Significant Impact was filed with the Environmental Protection Agency on 10 October 2000.





OTHER INFORMATION: Initial funds were appropriated for Pre-construction, engineering and design in Fiscal Year 2000. Congress in the FY02 Energy and Water Appropriations Act added initial construction funding. A construction contract for the downstream ½ mile channel of the 2-mile project was awarded 13 December 2002. The project was not included in the President's Budget request for FY03, FY04, FY05, or FY06 due to budget priorities and constraints.

The Transportation Act passed by Congress in 1998 included \$5.6 million for work associated with a major component (overpass) of the roadway project proposed parallel to the flood control project. The flood control project and the roadway project involve joint right-of-way acquisition and easement actions that benefits both Federal projects.

The sponsor has initiated over \$90 million of financial investments (acquisitions, relocation projects, and construction projects compatible with the flood control project). The sponsors \$90 million (of a planned \$230 million) of financial investments are dependent upon completion of the flood control project. This is a major sponsor investment undertaking compared to the \$15.3 million that the Federal government has already invested (of a planned \$28.6 million) on the flood control project. Sponsor projects also involve Federal Highway Administration funding and coordination. Any delays will impact the successful completion of projects that coordinate the use of Federal funding from multiple Federal agencies.

# ANTELOPE CREEK LINCOLN, NEBRASKA



-  WORK COMPLETED
-  WORK UNDERWAY WITH FUNDS AVAILABLE FOR THE CURRENT FISCAL YEAR
-  WORK PROPOSED WITH FUNDS REQUESTED FOR THE BUDGET FISCAL YEAR
-  WORK REQUIRED TO COMPLETE THE PROJECT AFTER THE BUDGET FISCAL YEAR

**ANTELOPE CREEK  
AT LINCOLN, NEBRASKA**  
U.S. Army Engineer District, Omaha  
Northwestern Division

PROJECT: Blue River Channel, Kansas City, Missouri – (Continuing)

LOCATION: The project is located along the Blue River and tributaries in Kansas City, Jackson County, Missouri, and extends from near its mouth (located at Missouri river mile 358.0) to 63rd Street, channel mile 12.5.

DESCRIPTION: The project plan consists of a channel modification along 12.5 miles of the Blue River channel providing flood protection for a once in 30-year flood and reducing flooding for less frequent events.

AUTHORIZATION: 1970 Flood Control Act

REMAINING BENEFIT - REMAINING COST RATIO: 5.1 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 3.0 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 1.6 to 1 at 6 5/8 percent (FY 1979).

BASIS OF BENEFIT-COST RATIO: Benefits are from the Supplemental Report dated 24 October 1990 to the General Design Memorandum and approved on 14 December 1990 at October 1990 price levels.

SUMMARIZED FINANCIAL DATA:

		STATUS (1 Jan 07)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$244,401,000			
Estimated Non-Federal Other Costs	35,372,000	Entire Project	92	To be determined.
Cash Contribution	\$ 0			
Other Costs	35,372,000			
Total Estimated Project Cost	\$279,773,000			
Allocations to 30 September 2004	\$192,432,000			PHYSICAL DATA
Allocation for FY 2005	8,570,000	ACCUM		Bridge Alterations at Federal Cost:
Allocation for FY 2006	4,950,000	PCT OF EST		Railroad Bridges - Modify - 15
\$23,868,000				
Conference Allowance for FY 2007	TBD	FED COST		
Allocation for FY 2007	9,750,000 *			Bridge Alterations at Non-Federal Cost:
Allocations to 30 September 2007	215,702,000	88%		Highway Bridges - Modify - 4
\$7,502,000				
Allocation Requested for FY 2008	3,500,000	90%		
Programmed Balance to Complete after FY 2008	25,199,000			Channel Improvement: Length Main Stem, Blue River Channel 12.5 miles

\* Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: The Blue River basin lies completely in the Kansas City Metropolitan Region, with a 2000 population of 1,776,000 persons. The basin drains an area of 272 square miles and is subject to cloudbursts, prolonged rainstorms, floods, and extended drought periods. The maximum flood of record in the basin occurred in September 1961 and caused an estimated \$8 million in damages. An August 1982 flood caused an estimated \$3.3 million in damages, and an October 1986 flood along the Brush Creek tributary of the river caused an estimated \$209,000 in damages in the lower flood plain. A major flood occurred on the lower portion of the river in May 1990 and caused damages estimated at \$100.8 million. The July 1993 flood was not severe in this basin, causing damages estimated at \$60,000. The authorized project would have prevented all but minor damages caused by the 1961 event, and all damages caused by the later events. The channel project provides for about a 30-year level of protection to 3,400 acres in the lower basin, including the Blue River Valley Industrial District. Estimated annual average benefits, all flood control, based on 1 October 1990 prices, are \$57.3 million, of which \$53.7 million are existing benefits and \$3.6 million are future benefits.

FISCAL YEAR 2007: FY07 funds are being applied as follows:

Item	Amount
Award Grade Control Structure Contract	8,730,000
Engineering & Design	800,000
Construction Mgmt	<u>220,000</u>
Total	9,750,000

FISCAL YEAR 2008: The requested amount of \$3,500,000 will be applied as follows:

Item	Amount
Continue Construction Grade Control Structure	\$ 3,000,000
Engineering and Design	300,000
Construction Management	<u>200,000</u>
Total	\$3,500,000

NON-FEDERAL COSTS: Local interests are required to furnish without cost to the United States all lands, easements, and rights-of-way required for construction and subsequent maintenance of the project; hold and save the United States free from damages due to construction; perform without cost to the United States necessary highway, highway bridge, and utility alterations required in connection with this project; maintain and operate the project after completion in accordance with regulations prescribed by the Secretary of the Army; and adequately inform all affected persons, at least annually, that the project will not provide complete flood protection. The investment is broken down as follows:

	Payments During Construction Costs	Annual Operation, Maintenance and Replacement
Requirements of Local Cooperation:		
Provide lands, easements, rights of way, and borrow and excavated or dredged material disposal areas.	\$20,786,000	\$50,000
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities.	\$14,586,000	\$32,000
Total Non-Federal Costs	\$35,372,000	\$82,000

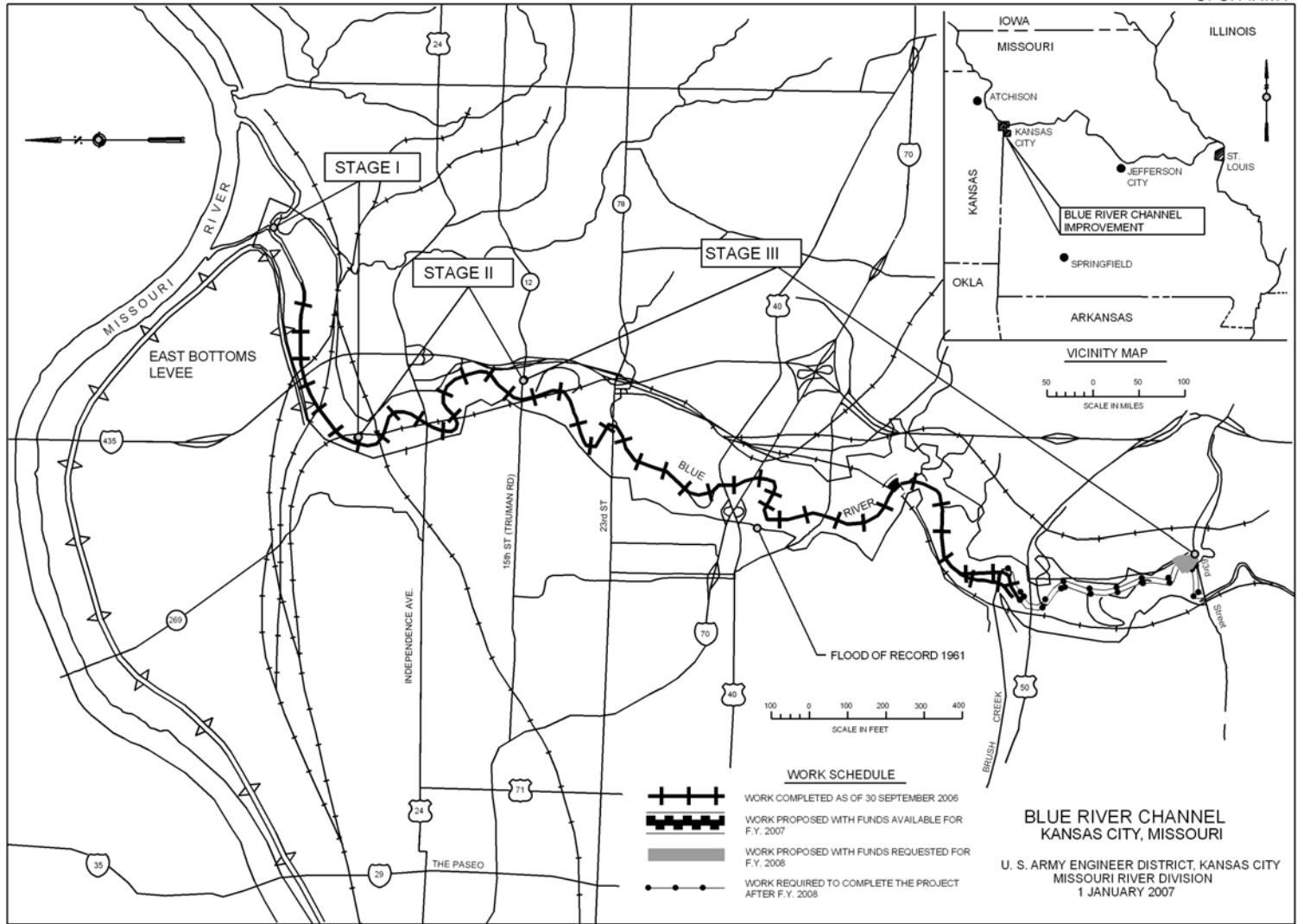
STATUS OF LOCAL COOPERATION: The Section 221 Local Cooperation Agreement (LCA) was signed by the Kansas City District Engineer on 8 September 1983. The City of Kansas City, Missouri provided all rights-of-way for Stages 1 and 2 construction that have been completed. Acquisitions for Stage 3 construction are substantially complete.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$244,401,000, which reflects actual completed construction costs, is an increase of \$2,697,000 over the estimate last presented to Congress (FY 2007). This change includes the following items.

Item	Amount
Price Escalation on Construction Features	\$2,187,000
Post Contract Award and Other Estimating Adjustments	\$510,000
Total	\$2,697,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: Final statement on Blue River Basin plan made in connection with preauthorization studies was filed with the Council on Environmental Quality (CEQ) on 13 November 1970. A more complete draft statement on the Blue River Basin plan, including specific information on the impacts of the Blue River Channel, was filed with the CEQ on 11 April 1974. The final statement was forwarded to HQUSACE on 24 October 1974, and was filed with the CEQ on 8 September 1975.

OTHER INFORMATION: Funds to initiate preconstruction engineering and design were appropriated in FY 1973, and funds to initiate construction were appropriated in FY 1979.



APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: Elk Creek Lake, Oregon (Continuing)

LOCATION: In Jackson County, on Elk Creek, a tributary of Rogue River, at river mile 1.7 about 26.5 miles north of Medford, Oregon.

DESCRIPTION: The Elk Creek Lake Project was authorized as one of three multiple-purpose dams in the Rogue River Basin. The three dams were designed to operate as a system to reduce flooding and to accomplish additional purposes of water supply, irrigation, fish and wildlife enhancement, hydropower, and recreation. Two of the three dams are complete and operating. Authorized features of the Elk Creek Lake project include a 249-foot high, roller-compacted concrete gravity dam, a gate controlled concrete chute spillway, regulating outlet conduits, a diversion for power penstock, and a multiple use intake tower attached to the upstream face of the dam. Based on the selected alternative described in final EIS Supplement Number 2, filed 1 May 1991, the project would be redesigned for interim operation with no conservation pool and with fish passage.

Elk Creek Dam was partially completed prior to a court injunction halting construction. Fish passage through the partially completed facility remains an issue. The Corps' analysis determined that removing a section of the dam to provide a fish passage corridor through the project is the most cost effective and biologically sound method to provide fish passage with the partially completed project.

AUTHORIZATION: 1962 Flood Control Act

REMAINING BENEFIT - REMAINING COST RATIO: The remaining benefit-remaining cost ratio has not been calculated because the project was enjoined and the agency decided not to complete dam construction. The portion of the project funded in FY08 is only for mitigation purposes.

TOTAL BENEFIT - COST RATIO: The total benefit-cost ratio is 0.48 to 1 at 7 percent.

INITIAL BENEFIT - COST RATIO: The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1971) was 1.01 to 1 at a 3 1/4% rate and was based on allocating a share of the system benefits to this project.

BASIS OF BENEFIT - COST RATIO: Benefits are from the latest available evaluation reported in June 1983 at 1983 price levels.

SUMMARIZED FINANCIAL DATA:

ACCUM PCT OF EST FED COST	STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
	Entire Project	63%	To Be Determined

Division: Northwestern

District: Portland

Elk Creek Lake, OR

11 January 2007



SUMMARIZED FINANCIAL DATA (Continued)

Estimated Federal Cost		\$179,400,000	1/
Programmed Construction	\$134,154,000		
Unprogrammed Construction	\$ 45,246,000		
Estimated Non-Federal Cost		\$	0
Total Estimated Project Cost		\$179,400,000	
Allocations to 30 September 2004		111,893,000	
Allocation for FY 2005		254,000	
Allocation for FY 2006		297,000	
Conference Allowance for FY 2007			
Allocation for FY 2007		1,440,000	2/
Allocations through FY 2007		113,884,000	63%
Allocation Requested for FY 2008		11,030,000	70%
Programmed Balance to Complete after FY 2008		9,240,000	
Unprogrammed Balance to Complete after FY 2008		45,246,000	

PHYSICAL DATA (authorized)

Dam: Type - Roller compacted concrete  
 Height - 249 feet; Length - 2,580;  
 Concrete Volume - 1,100,000 cubic yards  
 Spillway: Type - Concrete gravity  
 Gate Ogee Section: Design discharge- 68,400 cfs;  
 Gates - 3 (33 feet x 34 feet) tainter  
 Lands and Damages: Acres - 3,570  
 Land Use: Irrigated - 130 acres;  
 Pasture - 182 acres; Wooded - 3,151 acres (of which 841 acres are Government owned); Lesser Interests- 67 acres;  
 Building Sites - 40 acres  
 Relocations: County Road - 7.9 miles;  
 Power and Telephone lines - 15 miles, Cemetery Reservoir  
 Capacity: Total storage at elev 1,726 - 101,000 acre feet  
 Usable Storage - 95,000 acre feet  
 Flood Control Storage (elev 1726- 1665) - 60,000 acre feet  
 Conservation Storage (elev 1665 - 1581) - 35,000 acre feet  
 Inactive Storage (elev 1581-1500) - 6,000 acre feet

1/ Reflects the cost of the selected alternative described in the 1991 EIS Supplement Number 2. Estimate excludes deferred costs for future potential modification to operate with a conservation pool. This estimate must be significantly updated if the project is completed in the future.

2/ Assumed FY 2007 allocation.

JUSTIFICATION: Passage through the existing diversion tunnel and continued operation of the existing temporary trap and haul facility is not a viable long-term solution to address the endangered species concerns in the watershed. The Corps biological assessment and NOAA-Fisheries biological opinion found that a fish passage corridor would be a better option in the long-term, from a biological perspective. The current Biological Opinion concludes that the temporary trap and haul facility can be operated without jeopardy through 30 September 2008. It is unlikely that NOAA Fisheries will extend a no jeopardy opinion beyond that date. Elk Creek Lake could be operated without conservation storage on an interim basis together with Lost Creek and Applegate Lakes as the three-dam Rogue River Basin system to provide flood control. The project would control run-off from about 132-square miles upstream from Elk Creek site. The flood problems occur principally in discontinuous areas in the 50-mile reach of the Rogue River from the junction of Elk Creek downstream to about ten miles past Grants Pass and in scattered areas in the lower 100-mile reach of the Rogue River. The major flood plain comprises some 7,400 acres of hay, alfalfa, pasture orchards (peaches, pears), and hops and affects a population of 14,560. Damages from past floods include agricultural crop losses and land damage due to inundation and erosion, and destruction of industrial, residential, commercial, and recreation developments. A total of 95,000 acre-feet of usable storage would be available at Elk Creek

Division: Northwestern

District: Portland

Elk Creek Lake, OR

11 January 2007

for flood control. The maximum flood that could be completely controlled at the Elk Creek site would have a peak flow of about 19,200 cubic feet per second and a frequency of occurrence of once in about 40 years. During the flood of 1964, the most severe flood since 1861, damages to the area downstream from Elk Creek and Lost Creek Lakes amounted to \$13,161,000 of which about \$2,350,000 would have been prevented by Elk Creek Lake. The peak stage of a flood such as that of 1964 would be reduced about 5.6 feet at Grants Pass by Lost Creek, and 7.4 feet by Lost Creek and Elk Creek Lakes combined.

FISCAL YEAR 2007: The allocated amount of \$1,440,000 will be used to continue operation of the existing temporary fish trap and haul facility, conduct basic O&M activities of the partially completed dam structure, and continue planning, design, and endangered species consultation for a permanent fish passage solution.

FISCAL YEAR 2008: The requested amount of \$11,030,000 will be applied as follows:

Operate and maintain the temporary trap and haul and the partially completed dam structure.....	\$ 498,000
Prepare contract procurement documentation.....	\$ 200,000
Award a fully funded contract to notch the dam for fish passage.....	\$10,332,000

NON-FEDERAL COST: N/A

STATUS OF LOCAL COOPERATION: N/A

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$179,400,000 remains unchanged from the latest estimate submitted to Congress (FY 2007).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Final Statement was filed with CEQ on September 17, 1971. Supplement No. 1, addressing water quality effects, was filed with EPA on December 24, 1980, and a Record of Decision was filed with EPA in February 1982. An environmental assessment addressing design changes (such as roller compacted concrete instead of embankment dam) was completed on October 11, 1983. Supplemental Information Reports dated September 23, 1985 and January 14, 1986 were provided to the public. These reports described the findings of the 1983 environmental assessment and other new information that had become available since the 1980 EIS Supplement. Another EIS supplement was prepared as a result of litigation. This Supplement was completed and filed with the EPA on May 1, 1991. A Record of Decision, selecting the no conservation pool as the interim operating alternative, was signed on January 24, 1992.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1965, and for construction in FY 1971. After initiation of construction, an injunction was placed against completion of the project. Construction of the project was terminated with the project at 83 feet, one-third its design height. After completion of the final EISS #2, the Department of Justice filed a motion with the Court to remove the injunction. The Ninth Circuit Court of Appeals issued a ruling on April 21, 1995. In a decision, the Court also reversed the District Court decision that EISS #2 met the requirements of the earlier Ninth Circuit opinion and awarded attorneys fees to the plaintiffs. The case was remanded with instructions to prepare a third supplement adequately addressing all issues raised under the NEPA process.

Division: Northwestern

District: Portland

Elk Creek Lake, OR

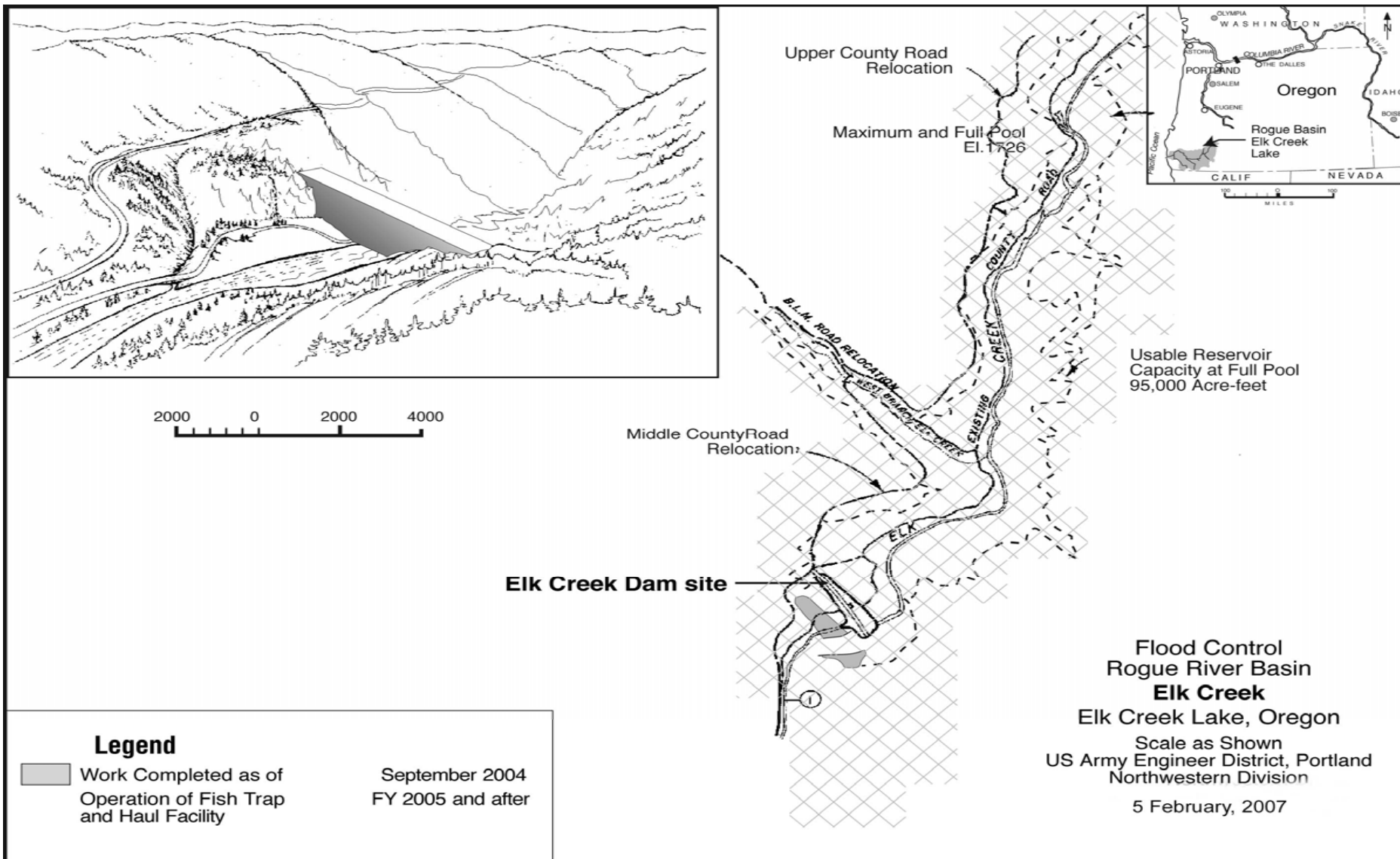
11 January 2007

Due to the Ninth Circuit Court of Appeals decision and status of local support, the Corps did not perform the environmental studies under the National Environmental Policy Act (NEPA) necessary to remove the Federal court injunction against completion of the project. Therefore, an evaluation of the requirements for long-term management of the project in its partially completed state was required. The Division Engineer notified the Congressional Appropriations Committees on 6 November 1995 of the Corps' intention to study options for long-term management of the project in its partially completed state. Temporary fish passage was initiated until a long-term fish passage solution is implemented.

Consultation began with the National Marine Fisheries Service (NMFS) concerning alternatives for long-term fish passage at Elk Creek under the Endangered Species Act. Four potential upstream fish passage alternatives were evaluated in the Corps biological assessment. Based on this analysis, it was determined that passage through the existing diversion tunnel and continued operation of the existing temporary trap and haul facility would result in jeopardy to the continued existence of coho salmon in Elk Creek over a ten to fifty year period. The assessment found that construction of a new trap and haul facility designed to function effectively with the partially completed project or removal of a section of the dam to provide a fish passage corridor would not impact the continued existence of the species. Removing a section of the dam would provide long-term passive fish passage and was the most cost-effective method to provide fish passage over the long term with the project in an partially completed state, even when including the cost to replace the removed section of the dam if it is completed in the future.

NMFS issued a biological opinion in January 2001. The opinion concurred with the Corps' assessment that passage through the existing diversion tunnel and continued operation of the existing temporary trap and haul facility would result in jeopardy. They also concurred with the Corps' assessment that the fish passage corridor would not result in jeopardy, and would be the best alternative from a biological perspective. Their opinion stated that a new trap and haul facility could result in jeopardy, but stated that impacts of a new trap and haul facility could potentially be reduced to an acceptable level. The opinion recognized the need to operate the existing trap and haul facility in the interim until an acceptable, long-term solution is implemented. In FY 2003, 2004, 2005, and 2006 Congress included language that specifically prohibited use of project funding for the fish passage corridor (notch).

The current Biological Opinion concludes that the temporary trap and haul facility can be operated without jeopardy through 30 September 2008. It is unlikely that NOAA Fisheries will extend a no jeopardy opinion beyond that date.



APPROPRIATION TITLE: Construction, Flood Damage Reduction, Fiscal Year 2008

PROJECT: Mt. St. Helens Sediment Control, Washington (Continuing)

LOCATION: A sediment retention structure on the North Fork Toutle River, 3 miles upstream from its confluence with the Green River; a Fish Collection Facility located on the North Fork Toutle River, 8,500 feet downstream of the Sediment Retention Structure; levee improvements at Kelso, Washington on the Cowlitz river (river mile 3 to river mile 8); and dredging in the Cowlitz River (river mile 0 - to river mile 20); all located in Cowlitz County, southwest Washington. The river systems impacted by the project include the Toutle, Cowlitz and a portion of the Coweeman River. Most of the population affected by the problems resides in the communities of Longview, Kelso, Lexington and Castle Rock, Washington.

DESCRIPTION: An earth and rock fill sediment retention structure with a spillway height of 125 feet, length of 1,800 feet and a retention capacity of 258 million cubic yards of sediment; a barrier type fish trap facility with a length of 300 feet and a 210 foot fish ladder; levee raise and improvements on the Cowlitz River at Kelso, WA; dredging in the Cowlitz River from the mouth to river mile 20; and provide system-wide flood protection throughout the fifty year life cycle (1985-2035) at congressionally authorized levels.

AUTHORIZATION: Supplemental Appropriations Act, 1985, PL 99-88.

REMAINING BENEFIT - REMAINING COST RATIO: The remaining benefit-remaining cost ratio is 4.1 to 1 at 7 percent.

TOTAL BENEFIT - COST RATIO: The total benefit cost ratio is 1.6 to 1 at 7 percent.

INITIAL BENEFIT - COST RATIO: The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1986) is 3.0 to 1 at 8-5/8 percent. The benefit to cost ratio is based on the project functioning independently.

BASIS OF BENEFIT - COST RATIO: Benefits are from the latest available evaluation reported in the Chief of Engineers Report, April 1985 at 1988 price levels.

SUMMARIZED FINANCIAL DATA	ACCUM PCT OF EST FED COST	STATUS (1 Jan 2007)	PCT CMPL	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$202,500,000			
Programmed Construction	\$155,608,000			
Unprogrammed Construction	46,892,000			
		Sediment Retention		
		Structure	100	Feb 90
		Dredging	100	Mar 90
Estimated Non-Federal Cost	24,600,000	Future Dredging	0	To Be Determined
Programmed Construction	24,600,000	Entire Project	60	To Be Determined
Cash Contribution	\$ 3,600,000			
Other	21,000,000			
Unprogrammed Construction	0			

SUMMARIZED FINANCIAL DATA (Continued)

Total Estimated Programmed Construction Cost	\$180,208,000	
Total Estimated Unprogrammed Construction Cost	46,892,000	
Total Estimated Project Cost	\$227,100,000	
Allocations to 30 September 2004	117,317,000	
Allocation for FY 2005	301,000	
Allocation for FY 2006	590,000	
Conference Allowance for FY 2007		
Allocation for FY 2007	500,000 *	
Allocations Through FY 2007	118,708,000	59%
Allocation Requested for FY 2008	10,200,000	64%
Programmed Balance to Complete after FY 2008	26,700,000	
Unprogrammed Balance to Complete after FY 2008	46,892,000	

PHYSICAL DATA

Dam: Type - Earth and Rockfill  
 Spillway Height - 125 feet  
 Length - 1,800 feet  
 Spillway Width - 400 feet  
 Fish Facility: 300 feet long, concrete  
 with stilling basin  
 Fish Ladder: 210 feet long by  
 6 feet wide, concrete  
 Lands and Damages: Acres -  
 5,374 (Sediment Retention Structure)  
 1,300 (Disposal Sites for Dredging)  
 25 (Levee Improvements)  
 Ultimate Sediment Capacity:  
 258 million cubic yards

\* Assumed allocation. Final, actual allocation yet to be determined.

JUSTIFICATION: The eruption of Mount St. Helens dramatically altered the hydraulic and hydrologic regimes of the Cowlitz and Toutle River Valleys. The Supplemental Appropriation Act, 1985 authorized the Corps to construct, operate and maintain a sediment retention structure (SRS) with such design features and associated downstream actions necessary to provide flood protection to the communities of Longview, Kelso, Castle Rock and Lexington. About 50,000 people and their property are at risk if the flood protection is not maintained.

Changing hydraulic and hydrologic conditions impact downstream deposition of sediment that is now infringing on the congressionally authorized levels of flood protection. It is likely that without dredging in the Cowlitz River the authorized level of flood protection will not be maintained through the winter of 2006/07.

The ongoing data collection and sediment management analysis work is a critical step in determining what additional measures should be implemented to maintain long-term flood protection for these communities. Potential alternatives to regain/maintain the authorized levels of protection through 2035 include: dredging, improving levee integrity, increasing flood control storage, develop sediment storage sump, establish a main channel above the SRS to reduce sediment delivery.

The Budget includes funding for this project primarily to address a significant risk to human safety. The Corps made this determination based on many factors such as the likelihood and magnitude of the potential flooding, the number of people living in the flood plain, the likely warning time, the availability of evacuation routes, and site-specific engineering factors.

FISCAL YEAR 2007: Continue annual sediment monitoring, interim sediment management measures, and continue analysis of potential follow-on long-term alternatives for system-wide flood and navigation protection.

FISCAL YEAR 2008: The requested amount of \$10,200,000 will be applied as follows:

Continue annual sediment monitoring; continue analysis of potential follow-on long-term alternatives for system-wide flood and navigation protection .....	\$ 500,000
Complete dredging report, initiate and complete incremental dredging .....	\$ 8,200,000
Complete fish passage report, initiate and complete fish passage construction .....	\$ 1,500,000

NON-FEDERAL COST: In accordance with the agreement between the United States of America and the State of Washington for local cooperation at, along and near the Cowlitz and Toutle Rivers, Cowlitz County, State of Washington, the total estimated non-federal cost for construction is \$24,600,000 including allowances for inflation. The non-Federal sponsor must comply with the requirements listed below:

Requirements of Local Cooperation	Payments During Construction	Annual Operation Maintenance and Replacement Costs
Provide lands, easements, rights-of-way, and dredged material disposal areas.	\$16,200,000	
Modify or relocate buildings, utilities, roads, bridges (except railroad bridges), and other facilities, where necessary in the construction of the project.	400,000	
Mitigation for dredging operations	4,400,000	\$846,000
Sales & Use Tax Offset from the State of Washington	3,600,000	
<b>Total Non-Federal Payments During Construction</b>	<b>\$24,600,000</b>	

STATUS OF LOCAL COOPERATION: A local cooperation agreement (LCA) for the Sediment Control project was signed on 26 April 1986. The State of Washington is the sponsor for the Sediment Retention Structure (SRS) and dredging portions of the project. Consolidated Diking Improvement District No. 3 and Drainage Improvement District No. 1 are sponsors for the Kelso levee improvement.

Land rights have been obtained by the State over the lands required for initial construction of the SRS. All persons residing within the SRS acquisition boundary have been relocated. The Diking and Drainage Districts have been furnished right-of-way requirements and are continuing their acquisition program. The State is continuing to acquire rights-of-way for additional dredge disposal areas should future dredging be required to preserve authorized flood protection levels.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of \$202,500,000 is an increase of \$3,000,000 from the latest estimate submitted to Congress (FY 2006). Increase is due to price leveling.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final EIS was filed with the EPA in December, 1984.

OTHER INFORMATION: Funds to initiate preconstruction planning were allotted in FY 1985 and construction in FY 1986. The project remains open because of the unique circumstances created by the eruption of Mt. St. Helens. Since the small explosive eruption that occurred 1 October 2004, there have been several larger eruptions of steam and ash, with some additional growth of the lava dome within the mountain's existing crater. Sediment deposition in the lower Cowlitz River is beginning to infringe on the authorized level of flood protection. As a result, the project is at the end of the "natural pause" in construction work. Resumption of physical construction is appropriate.



**Schedule**

Flood protection monitoring and annual sediment survey	Sept 2004
Risk assessment for levee systems, sediment monitoring and analysis	FY 2005
Continuing long term solutions with sediment handling alternatives report	FY 2006 and after

Flood Control  
**Mt. St. Helens Sediment Control**  
 Washington  
 Scale as Shown  
 US Army Engineer District, Portland  
 Northwestern Division  
 5 February, 2007



APPROPRIATION TITLE: Construction, Flood Damage Reduction (Dam Safety Assurance), Fiscal Year 2008

PROJECT: Mud Mountain Dam, Washington (Fish Passage Facilities) (Continuing)

LOCATION: Mud Mountain Dam is located at river mile 29.6 on the White River, 6 miles upstream and southeast of Enumclaw, WA and 38 miles southeast of Tacoma, WA in western Washington State.

DESCRIPTION: The dam safety project consists of raising and strengthening the dam with a concrete cut-off wall placed at the centerline of the dam, raising the spillway chute wall to contain spillway discharge during the design flood event, reconstructing access roads, constructing a new outlet tower and modifying the two existing flood control discharge tunnels. Work is based on supplemental design memorandums (SDM) #1 and #2. After completion of the two discharge tunnels improvements, inspections identified greater than expected erosion in the concrete invert of the 23-foot tunnel and in the entrance chamber of the outlet tower. Immediate remedial action was completed in 2001. Follow-on inspections revealed additional erosion damage to concrete surfaces on the 9-foot and 23-foot tunnel trash racks, the trash rack walls, the mixing chamber walls, the 9-foot tunnel walls and the 23-foot tunnel exit floor and walls.

The fish facility currently collects salmon and is trucked upstream using the existing fish collection facility. The current facility is deteriorated and unsafe. Replacement will allow the Corps to continue meeting mitigation requirements for the Mud Mountain Dam Project.

AUTHORIZATION: Flood Control Act of 1936 authorized the Mud Mountain Dam and reservoir on the White River as the main unit of the Puyallup River flood control project.

REMAINING BENEFIT - REMAINING COST RATIO: Not applicable

TOTAL BENEFIT-COST RATIO: THE INITIAL BENEFIT - COST RATIO: Not applicable

BASIS OF BENEFIT-COST RATIO: Not applicable

SUMMARIZED FINANCIAL DATA

		Accum.	STATUS	PERCENT	
COMPLETION		Pct. of Est.	(1 Jan 2007)	COMPLETE	
SCHEDULE					
Estimated Federal Cost	\$ 121,537,000	Fed Cost	Entire Project	80	TBD
Estimated Non-Federal Cost	0				
Total Estimated Project Cost	\$ 121,537,000				

SUMMARIZED FINANCIAL DATA (Continued)

Accum.  
Pct. of Est.  
Fed Cost

Allocations to 30 September 2004	\$84,497,227	
Allocation for FY 2005	2,836,000	
Allocation for FY 2006	4,356,000	
Conference Allowance for FY 2007	TBD	
Allocation for FY 2007	5,470,000 *	
Allocations through FY 2007	97,159,227	80%
Allocation requested for FY 2008	11,500,000	89%
Programmed Balance to Complete after FY 2008	12,877,773 1/	
Unprogrammed Balance to Complete after FY 2008	0	

\* Assumed allocation. Final, actual allocations yet to be determined

1/ See Other Information

PHYSICAL DATA:

Dam: Type - Rockfill with earth core and concrete cutoff wall	Spillway: Type - Uncontrolled	Fish Trap
Height - 425 feet above bedrock	Previous Design Capacity - 139,000 cfs	and Haul Facilities
Crest - 700 feet long	New Constructed Capacity - 220,000 cfs	Improvements
Width - 1,600 feet at base, 26 feet at crest		

JUSTIFICATION: Mud Mountain Dam (MMD) became operational in 1948, and presently provides flood damage protection for about 850 acres of land along the White River and approximately 6,200 acres along the Puyallup River, with a combined population of more than 80,000 people. These areas are used for agriculture, residential, industrial, commercial, and transportation developments related to the expanding Port of Tacoma area. Major transportation facilities include the Burlington Northern and the Tacoma Beltline Railroads, Interstate Highway 5, and U.S. Highways 99 and 410. The project has prevented more than \$300 million in flood damages.

The original spillway was determined inadequate for the Spillway Design Flood (SDF). With an SDF, the dam would have been overtopped resulting in probable dam failure. Widespread flooding would have resulted in catastrophic damages with a high potential for loss of human life. Potential damages during SDF conditions without dam failure was estimated at \$3.6 billion and with dam failure was estimated at \$5.5 billion based on October 2004 prices and conditions. Should the dam fail, costs to repair the dam structure are estimated at \$200 million and yearly flood losses would continue until the dam was replaced.

Record floods tested the modified dam in November 1995 and February 1996 when the reservoir reached a record elevation of 1198 ft. The dam and new outlet tower also withstood a magnitude 6.8 earthquake on 28 Feb 2001.

JUSTIFICATION (continued):

Upstream migratory fish passage is currently provided at the Buckley fish trap & haul facility which is co-located with a privately owned barrier dam 6 miles downstream of Mud Mountain Dam. The barrier dam is also used to divert water to a recreational lake and a future regional water supply facility and is in need of replacement. The current owner of the diversion dam, Puget Sound Energy, is terminating operations at the project and the Corps is taking possession of the facility. Since 2002, funds have been provided to plan and design a replacement facility to meet ESA requirements.

FISCAL YEAR 2007: The current year amount will be used as follows:

DAM SAFETY AND FISH PASSAGE

Complete critical remaining dam safety construction	\$4,400,000
Initiate Fish Passage Real Estate Acquisition	\$770,000
Complete Fish Passage Engineering and Design	<u>300,000</u>
Total	5,470,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

FISH PASSAGE

Initiate and complete construction of improvements for right bank hatchery to use as temporary trap & haul facility during barrier replacement	\$1,070,000
Award fully funded contract to construct levee (part of fish passage facility)	1,500,000
Award first fully funded contract of the fish passage barrier replacement.	<u>8,930,000</u>
Total	11,500,000

NON-FEDERAL COSTS: N/A. Required dam safety and fish passage improvements are a Federal cost. If fish passage improvements are completed with local improvements of the diversion structure, costs allocated to the diversion structure will be 100% non-Federal.

STATUS OF LOCAL COOPERATION: N/A.

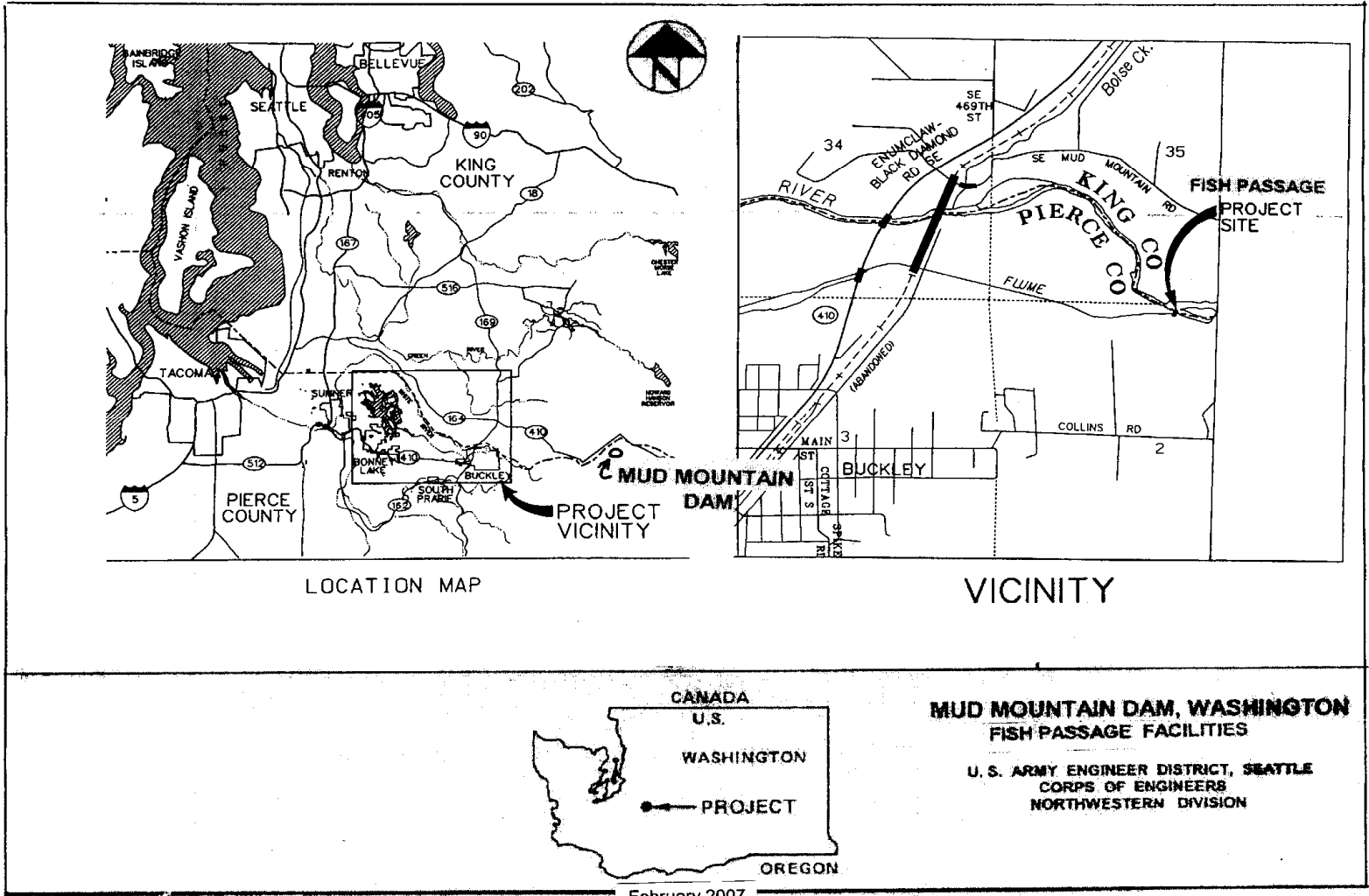
COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of \$121,537,000 is unchanged from the last estimate presented to the Congress in FY 2006 (See Other Information).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: An Environmental Assessment for the Dam Safety Assurance Program was completed in June 1986 with an additional Environmental assessment and Finding of No Significant Impact completed in June 1999. An Environmental Assessment and draft Finding of No Significant Impact for the replacement of the barrier dam was completed in March 2005. Final NEPA coordination is on-going. A programmatic biological assessment under ESA for the Operations and Maintenance of MMD as well as the replacement of the barrier dam was completed in June 2005.

OTHER INFORMATION: The Dam Safety Assurance project began in 1986 and the new outlet tower became operational in 1995.

The engineering document for fish passage is currently under review and the project costs will be revised accordingly. The engineering document will include a more current MCACES cost estimate based on a more detailed design than was used to generate the current total project cost estimate.

Congress added \$500,000 to the project in FY 2002 for “the design of fish passage facilities”. In FY 2003, Congress also “provided \$2,500,000 to continue work on dam safety measures and the fish passage facility.” Funding for FY 2004 and FY 2005 included appropriations for the fish passage facility but no specific language. FY 2006 funding included specific language for the fish passage facility.



LOCATION MAP

VICINITY

**MUD MOUNTAIN DAM, WASHINGTON  
FISH PASSAGE FACILITIES**  
U. S. ARMY ENGINEER DISTRICT, SEATTLE  
CORPS OF ENGINEERS  
NORTHWESTERN DIVISION

February 2007

FLOOD and COASTAL STORM DAMAGE REDUCTION, Fiscal Year 2008

NORTHWESTERN DIVISION

APPROPRIATION TITLE: Construction, Flood Damage Reduction, Fiscal Year 2008

PROJECT: Turkey Creek Basin, Kansas City, Kansas and Missouri – (Continuing)

LOCATION: The 23 square mile urban Turkey Creek basin drains Johnson and Wyandotte Counties in Kansas, and a portion of Kansas City, Missouri. Turkey Creek parallels Interstate Highway 35 for much of its length and flows through a tunnel into the Kansas River approximately three miles upstream of its confluence with the Missouri River.

DESCRIPTION: The plan of improvement consists of approximately ten thousand feet of urban channel modification, a levee section, the raising of two railroad bridges, 12.7 acres of riparian planting and four large drainage interceptor pipelines. A dual flood threat exists in the affected area, which consists of Turkey Creek over-bank flow and localized hillside runoff. Either flood source can cause considerable damage. The channel modification addresses the channel flooding threat, and the interceptors address the hillside component. All work is programmed.

AUTHORIZATION: Section 101 of the Water Resources Development Act of 1999 and Section 123 of the Consolidated Appropriations Act of 2003.

REMAINING BENEFIT – REMAINING COST RATIO: 1.4 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 1.2 to 1 at 7 percent.

BASIS OF BENEFIT-COST RATIO: Benefits are from the General Reevaluation Report dated January 2003 at October 2003 price levels.

SUMMARIZED FINANCIAL DATA:	ACCUM PCT. OF EST. FED COST	STATUS (1 Jan 07)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$56,852,000			
Estimated Non-Federal Cost	35,695,000			
Cash Contribution	23,956,000	Entire Project	8	To be determined.
Other Costs	11,739,000			
Total Estimated Project Cost	92,547,000			
Allocations to 30 September 2004	2,729,000			
Allocation for FY 2005	207,000			
Allocation for FY 2006	2,970,000			
Conference Allowance for FY 2007	TBD			
Allocation for FY 2007	4,000,000 *			
			PHYSICAL DATA	
			Channel Modification: 10,000 feet	
			Levee: 2,800 feet	

\* Assumed allocation. Final, actual allocations yet to be determined.

SUMMARIZED FINANCIAL DATA (continued):

Allocations through FY 2007	9,906,000	17%	Railroad Bridge Raises: 2 each
Allocation Requested for FY 2008	9,000,000	33%	Interceptors: 16,000 feet
Programmed Balance to Complete after FY 2008	37,946,000		Riparian Planting: 12.7 Acres

JUSTIFICATION: The Turkey Creek basin is a 23-square-mile area within Kansas City, Kansas and suburbs in Johnson and Wyandotte Counties. The basin is nearly 100 percent urbanized, and a significant amount exists within the flood plain. Commercial and industrial investment, valued at over \$139 million, along with residential and other property valued at approximately \$9 million are subject to flood damage. There are almost 500 businesses within the project area accounting for more than 6,000 jobs. Phasing of channel construction to coincide with widening of Interstate Highway 35 by the Kansas Department of Transportation (KDOT) will result in significant project cost savings. KDOT work on the channel is nearly complete. A dual flood threat exists in the study area that consists of Turkey Creek over-bank flows and localized hillside runoff. Either flood source can cause considerable damage. Average annual damages without the project are estimated at \$11.7 million and with the project at \$3.2 million. Six damaging floods have occurred since 1977. The flood of record occurred in July 1993 causing one fatality and damages estimated at \$20 million in 1993 or \$28 million at current price level. Another flood of similar magnitude to the 1993 event occurred in October of 1998. The recent severe floods have occurred at night and on weekends when the commercial industrial corridor was inactive. A flood of similar magnitude occurring during normal business hours has the potential to result in multiple fatalities. The recommended project will include construction of channel modifications with a one-percent level of protection and tributary floodwater diversion. Average annual benefits are \$8,487,000.

The Budget includes funding for this project primarily to address a significant risk to human safety. The Corps made this determination based on many factors such as the likelihood and magnitude of the potential flooding, the number of people living in the flood plain, the likely warning time, the availability of evacuation routes, and site-specific engineering factors.

FISCAL YEAR 2007: FY07 funds will be used as follows:

Continue Tunnel Contract	\$1,200,000
Continue Construction of Railroad Bridge	2,000,000
Engineering and Design	600,000
Construction Management	<u>200,000</u>
Total	\$4,000,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Complete Tunnel Contract	\$3,200,000
Continue Construction of Railroad Bridge	4,300,000
Engineering and Design	1,000,000
Construction Management	<u>500,000</u>
Total	\$9,000,000



NON-FEDERAL COSTS: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, as amended, the non-Federal sponsor must comply with the requirements listed below.

	Payments During Construction And Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Requirements of Local Cooperation		
Provide lands, easements, rights of way, and borrow and excavated material disposal areas.	4,976,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	6,763,000	
Pay 100% of the cost allocated to the Mission Road Interceptor and increasing the level of protection of the Missouri Interceptor from 10 years to 15 years (Locally Preferred Plan).	4,587,000	
Credit allowed based on prior work.	5,082,000	
Pay 22 percent of the costs allocated to flood control to bring the non-Federal share of flood control costs to 35 percent, as determined under Section 103 (m) of the Water Resources Development Act of 1986, as amended, to reflect non-Federal sponsor's ability to pay as reduced for credit allowed based on prior work, or pay 5 percent of the costs allocated to flood control, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	14,287,000	112,000
<b>Total Non-Federal Costs</b>	<b>35,695,000</b>	<b>112,000</b>

STATUS OF LOCAL COOPERATION: The City of Kansas City, Missouri and the Unified Government of Wyandotte County and Kansas City, Kansas expressed their intent to sponsor the project and a statement of financial capabilities in letters provided in January 2003 and November 2002 respectively.

The Project Cooperation Agreement (PCA) was signed 17 July 2006, following completion of tunnel work initiated by the Sponsor.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate is \$56,852,000, an increase of \$5,885,000 over the cost last presented to Congress (FY 2007). This change includes the following items.

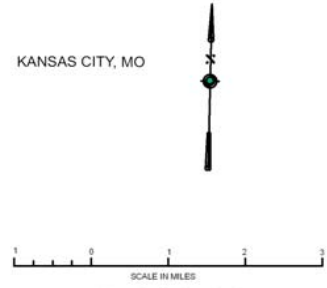
Item	Amount
Price Escalation on Construction Features	\$5,885,000

Total

\$5,885,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: A Revised Environmental Assessment, dated January 2003, concluded that no significant impacts, which would adversely affect the quality of the environment, were identified for the plan for flood protection measures for the lower Turkey Creek Basin. The District Commander signed a Finding of No Significant Impact February 4, 2003.

OTHER INFORMATION: Funds to initiate preconstruction engineering and design were appropriated in FY 1998. Preconstruction Engineering and Design (PED) was completed in September 2004. Funds to initiate construction were first appropriated in FY04.



- Work Schedule**
- ✕ Work proposed with funds for FY 2007 and FY 2008
  - Work required to complete the project after FY 2008

**TURKEY CREEK BASIN**  
 KANSAS AND MISSOURI  
 U. S. ARMY ENGINEER DISTRICT, KANSAS CITY  
 NORTHWESTERN DIVISION  
 1 JANUARY 2007

APPROPRIATION TITLE: Construction, Flood Damage Reduction (Dam Safety Assurance), Fiscal Year 2008

PROJECT: Tuttle Creek Dam, Manhattan, Kansas – (Continuing)

LOCATION: Tuttle Creek Dam is located in northeastern Kansas on the Big Blue River, 12.3 miles above its confluence with the Kansas River and 6 miles upstream of the City of Manhattan, Kansas.

DESCRIPTION: The Tuttle Creek Dam Safety Assurance project will provide for increased safety to the existing Tuttle Creek Dam and Lake during seismic and flood events through construction of foundation treatment, flood wave run-up barriers, and spillway gate improvements. As an interim measure, a dam failure warning system was installed for the period of construction. The system provides warning for the area from the dam to the confluence of the Big Blue and Kansas Rivers where the highest population density and lowest warning times exist.

To withstand ground motions from the Maximum Credible Earthquake, soil stabilization will be performed on the liquefiable foundation (alluvial sands) beneath the dam using deep soil mixing beneath the downstream slope. Treatment of the downstream foundation will require temporary removal of the existing downstream berm. The implementation of soil stabilization will include conducting additional exploratory borings and soil testing, a soil stabilization technology demonstration, replacement of upstream slope protection due to construction damage and disturbance, and general road and park modifications to accommodate construction and mitigate impacts.

The Probable Maximum Flood (PMF) creates a static pool, which would be within 2 feet of the crest of the dam. Wave action of 5 feet could overtop the dam by 3 feet. Concrete traffic barriers will be installed in place of the upstream guardrail to withstand wave action. The ability of the project to safely pass the PMF is dependent upon the reliability of the spillway tainter gates. The original spillway gate design did not fully consider friction in the bearings for all of the appropriate load cases. Reanalysis indicates that the gate structure is not adequate under all loading conditions. The inability to open two gates would result in overtopping of the dam during a Probable Maximum Flood. In order to ensure the ability to safely pass these flows and avoid overtopping of the dam by the static pool, the structural integrity of the spillway gates must be ensured. As such, general spillway rehabilitation and spillway gate modification are critical to the safety of the dam and will be performed.

AUTHORIZATION: Flood Control Acts of 1938, 1941, and 1944.

REMAINING BENEFIT – REMAINING COST RATIO: Not applicable.

TOTAL BENEFIT-COST RATIO: Not applicable.

INITIAL BENEFIT-COST RATIO: Not applicable.

BASIS OF BENEFIT-COST RATIO: Not applicable.

SUMMARIZED FINANCIAL DATA:

		STATUS (1 Jan 07)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$209,215,000			
Estimated Non-Federal Cost	0	Construction Initiated	20	To be determined.
Total Estimated Project Cost	209,215,000			
Allocations to 30 September 2004	9,190,000			
Allocation for FY 2005	6,858,000	ACCUM		
Allocation for FY 2006	26,730,000	PCT. OF EST.		
Conference Allowance for FY 2007	TBD	FED COST		
Allocation for FY 2007	38,000,000 *			
Allocations to 30 September 2007	80,778,000	39%		
Allocation Requested for FY 2008	28,500,000	52%		
Programmed Balance to Complete after FY 2008	99,937,000			

\* Assumed allocation. Final, actual allocations yet to be determined.

PHYSICAL DATA (All Federal):

Dam:	Type - Rolled earth and rock fill and hydraulic fill	Spillway: Type - Controlled 952 feet wide chute
	Height - 137 feet above valley floor	Gates: 18 Tainter gates 20 feet (high) x 40 feet (wide)
	Crest - 7,500 feet long	Design Capacity – 600,000 cfs
	Width - 1,200 – 1,600 feet at base, 50 feet at crest	

JUSTIFICATION: Tuttle Creek Dam became operational in 1962 and has prevented more than \$3.9 billion in flood damages. The project provides flood protection for the Big Blue, Kansas and Missouri River valleys, as well as the other authorized purposes of fish and wildlife, water quality, water supply, and supplemental releases for navigation, on the Missouri River downstream of Kansas City.

Tuttle Creek Dam was evaluated for adequacy, considering the design earthquake (Maximum Credible Earthquake, moment magnitude 6.6 at 20 km from the site). The design earthquake is capable of inducing liquefaction of the foundation sands, failure of the embankment slopes, significant deformation of the entire embankment, and probable release of the lake within 2 to 6 hours. A 5.7 magnitude earthquake could induce limited liquefaction beneath the downstream toe, and damage to the relief wells due to slope deformation. With the loss of the relief wells, uncontrolled release of the pool initiated by piping through the foundation could occur. A damaging earthquake in the 5.7 to 6.6 magnitude range that could impact Tuttle Creek Dam would most likely originate from the Humboldt Fault Zone, near Wamego, Kansas. The 6.6 magnitude earthquake is the largest possible earthquake that is believed to be possible and the approximate probability of the 5.7 magnitude earthquake is 3 percent over 50 years. The consequences of an earthquake induced dam breach would include the loss of the project, loss of all project benefits (\$56.2 million), extensive downstream damage (estimated \$458 million), and high potential for loss of life (estimated at 384 of the 13,000 population at risk).

FISCAL YEAR 2007: The FY07 amount of \$38,000,000 will be applied as follows:

Item	Amount
Continue QA Lab Testing	\$ 800,000
Continue Ground Modification	33,000,000
Engineering and Design	3,100,000
Construction Management	900,000
Continue Operating Dam Failure Warning System	<u>200,000</u>
Total	\$38,000,000

FISCAL YEAR 2008: The requested amount of \$28,500,000 will be applied as follows:

Item	Amount
Continue QA Lab Testing	\$ 800,000
Complete current phase of Ground Modification	23,500,000
Engineering and Design	3,000,000
Construction Management	1,000,000
Continue Operating Dam Failure Warning System	<u>200,000</u>
Total	\$28,500,000

NON-FEDERAL COSTS: Not applicable.

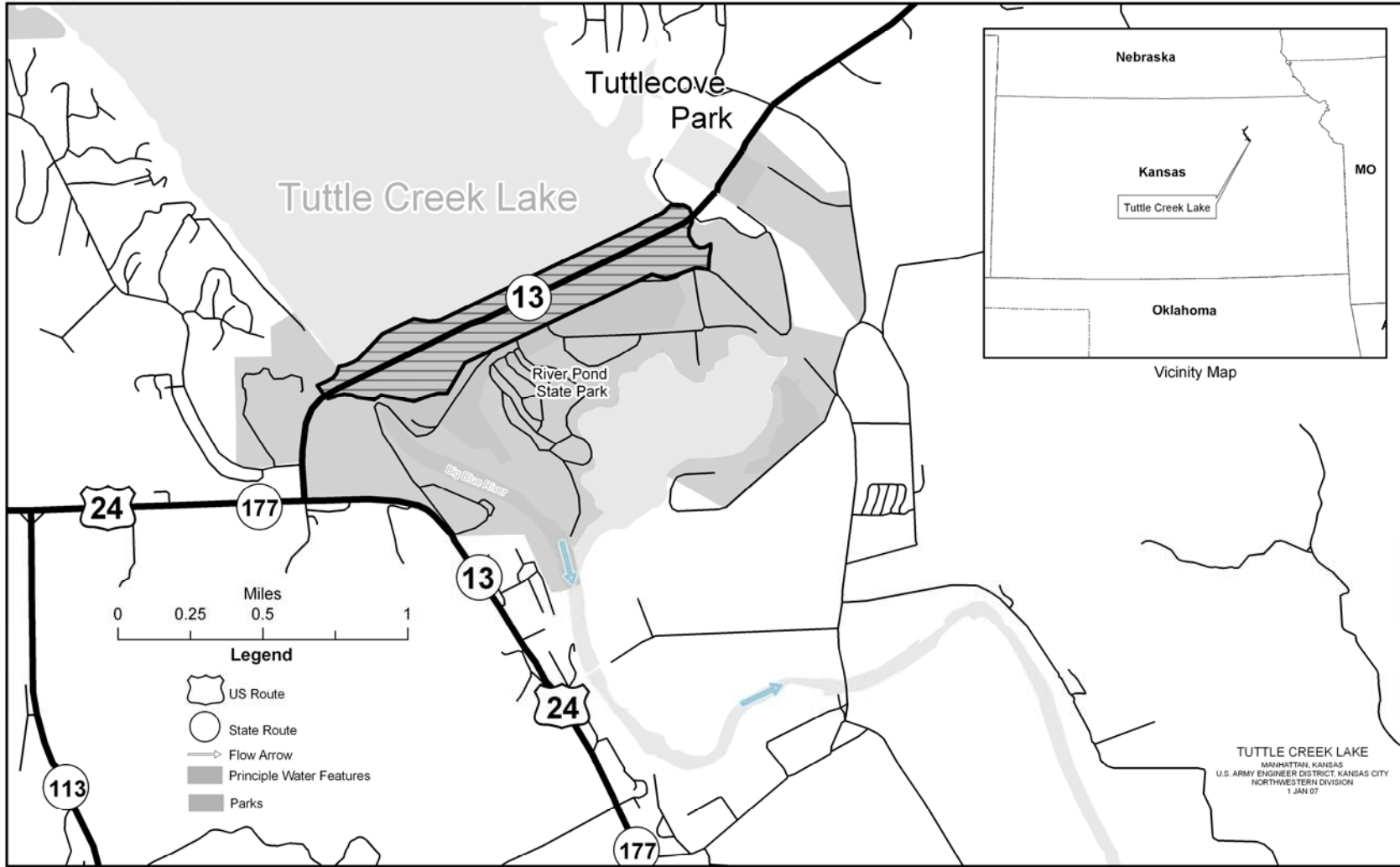
STATUS OF LOCAL COOPERATION: A cost sharing agreement is not required for the proposed dam safety improvements. However, there is an existing water supply contract with the State of Kansas for water supply storage and the State has provided reimbursement for 0.3735 percent of the original cost of construction and is continuing annual reimbursements for operation and maintenance. Accordingly, the State will be required to reimburse 0.3735 percent of costs of scheduled dam safety improvements, or approximately \$770,000. The state has been formally notified of the requirement and concurs with scheduled work.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of \$209,215,000 is an increase of \$3,500,000 over the cost last presented to Congress (FY 2007). This change includes the following items.

Item	Amount
Price Escalation on Construction Features	\$3,500,000
Total	\$3,500,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Environmental Impact Statement and associated Evaluation Report were completed in July 2002. The final National Environmental Policy Act public comment period ended on November 2002, and Northwestern Division and Headquarters USACE approved the documents in December 2002. The Record of Decision was signed at Headquarters USACE on 06 January 2003.

OTHER INFORMATION: The Dam Safety Evaluation Report was approved in December 2002. Construction funds were first provided in FY 2003 through the Construction General, Dam Safety and Seepage/Stability Correction Program account. Based on recent analysis and National Risk Ranking criteria, the schedule and scope of work is currently under review. Efforts in FY07 and F08 will be used to complete ongoing work.





FLOOD AND COASTAL STORM DAMAGE REDUCTION

CONSTRUCTION

SOUTH ATLANTIC DIVISION

APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Cedar Hammock (Wares Creek), Florida (Continuing)

LOCATION: The project area is located in Bradenton and unincorporated Manatee County on the southwest coast of Peninsular Florida.

DESCRIPTION: The project provides for clearing and snagging from approximately 500 feet upstream of Manatee Avenue bridge and extending 17<sup>th</sup> Avenue West; trapezoidal grass-lined channel, 1V:2H side slopes, 26-foot-bottom width from 17<sup>th</sup> Avenue West to 21<sup>st</sup> Avenue West; Vertical Sheet Pile Wall channel from just upstream of 21<sup>st</sup> Avenue West to 14<sup>th</sup> Street West (B.R. 41) with a 40-foot-bottom; and trapezoidal grass-lined channel, 1V:2H side slopes, 26-foot-bottom width from upstream of 14<sup>th</sup> Street West (B.R. 41) and extending to just downstream of 44<sup>th</sup> Avenue West (Cortez Road) bridge.

AUTHORIZATION: Water Resources Development Act of 1996

REMAINING BENEFIT-REMAINING COST RATIO: 4.1 to 1 at 7.000 percent.

TOTAL BENEFIT-COST RATIO: 3.3 to 1 at 7.000 percent.

INITIAL BENEFIT-COST RATIO: 3.3 to 1 at 7.125 percent.

BASIS OF BENEFIT-COST RATIO: Benefits are included in the Cedar Hammock (Wares Creek) Final Detailed Project Report and Environmental Assessment Report completed in April 1995 revised in 1996 at October price levels.

SUMMARIZED FINANCIAL DATA		ACCUM. PCT OF EST FED COST	STATUS (1 January 2007):	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost		13,700,000			
Estimated Non-Federal Cost		10,600,000	Channels & Canals	43	TBD
Cash Contribution	4,354,000		Total Project	61	TBD
Other	6,246,000				
Total Estimated Project Cost		24,300,000			
Allocations through 30 September 2004		1,504,500			
Allocation for FY 2005		10,000			
Allocation for FY 2006		742,000			
Conference Allowance for FY 2007		6,000,000			
Allocation for FY 2007		6,000,000	*		
Allocations through FY 2007		8,256,500	60%		
Allocation Requested for FY 2008		5,000,000	97%		
Scheduled Balance to Complete After FY 2008		443,500			
Unscheduled Balance to Complete After FY 2008		0			

\* Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: The Cedar Hammock (Wares Creek) are is urban, and existing development has encroached upon the channel in several areas. Heavy rains in September 1988 and June 1992 caused extensive flooding to the area and impacted residential as well as commercial development. Under existing conditions, average annual flood damages are estimated at \$6,725,000.

Annual Benefits	Amount
Flood Protection	3,735,000
Total	3,735,000

FISCAL YEAR 2007: Fiscal Year 2007 funds will be used to continue construction of the project channels; engineering during construction; and construction management.

Division: South Atlantic

District: Jacksonville

Cedar Hammock (Wares Creek), Florida

5 February 2007

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue Work under Excavation Contract	\$ 4,400,000
Engineering and Design	270,000
Supervision & Administration	330,000
Total	\$ 5,000,000

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below:

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Provide lands, easements, rights of way, and borrow and excavated or dredged material disposal areas.	5,718,000	
Modify or relocate utilities, roads, bridges, and other facilities, where necessary for the construction of the project.	528,000	
Pay 8.2 percent of the costs allocated to flood damage reduction during construction.	4,354,000	
Total Non-Federal Costs	10,600,000	

STATUS OF LOCAL COOPERATION: Manatee County, Florida strongly supports this project. The Project Cooperation Agreement will be executed in the 3rd quarter of FY 2007.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal (Corps of Engineers) cost estimate of \$13,700,000 is an increase over the latest estimate (\$13,300,000) presented to Congress (FY 2007). This change includes the following items:

Item	Amount
Price escalation on construction features	\$ 400,000
Total	\$ 400,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: Final Environmental Assessment was signed April 13, 1995.

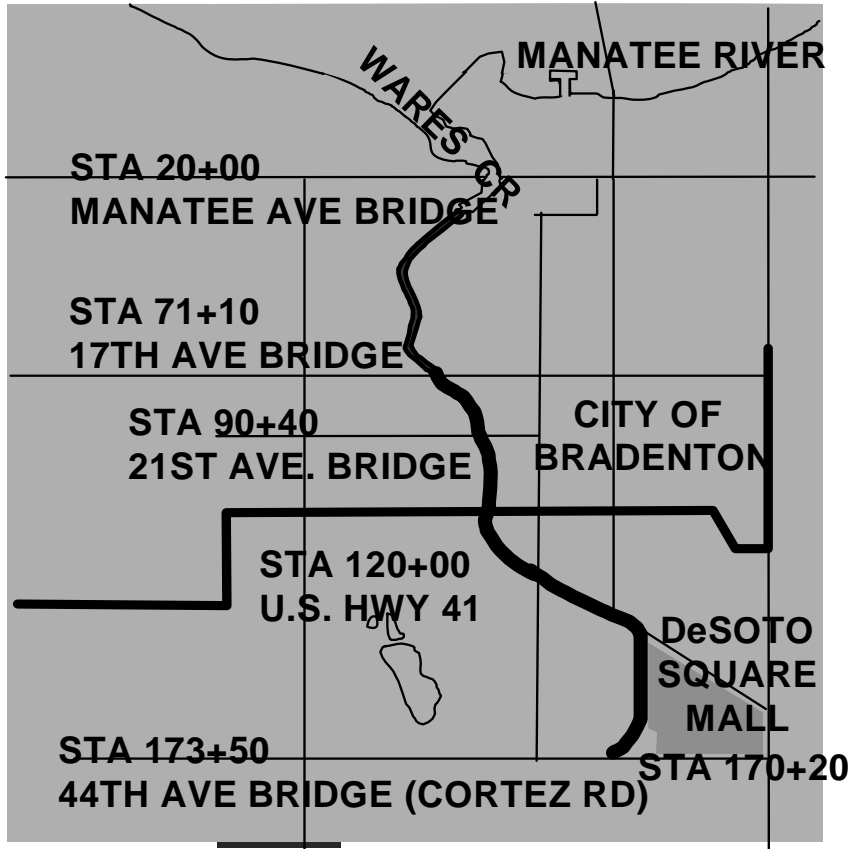
OTHER INFORMATION: Preconstruction, Engineering, and Design was initiated in August 1997 and is scheduled for completion in the 3<sup>rd</sup> quarter of FY 2007.




Division: South Atlantic

District: Jacksonville

Cedar Hammock (Wares Creek), Florida

5 February 2007



-  CLEARING AND SNAGGING
-  VERTICAL SHEET PILE WALL, 40 FT. BOTTOM WIDTH
-  TRAPEZOIDAL GRASS-LINED CHANNEL, 1V:2H, 26 FT. BOTTOM WIDTH

**CEDAR HAMMOCK,  
BRADENTON, FLORIDA**

Division: South Atlantic

District: Jacksonville

Cedar Hammock (Wares Creek), Florida

5 February 2007

APPROPRIATION TITLE: Construction, General - Major Rehabilitation

PROJECT: Herbert Hoover Dike, FL (Continuing)

LOCATION: The Herbert Hoover Dike system encircles Lake Okeechobee entirely, except in the vicinity of Fisheating Creek on the western shore. The existing embankments total about 143 miles in length with typical crest elevations rising about 25 feet above adjacent land elevations. Reach 1 extends 22 miles from the Hillsboro Canal to the St. Lucie Canal in the southeast quadrant of the dike and Reaches 2 and 3 extend from Hillsboro Canal westward to C-43 (Caloosahatchee River).

DESCRIPTION: The Major Rehabilitation Report (MRR), approved in November 2000, divided the dike into 8 Reaches and included a detailed analysis of alternatives in the 1<sup>st</sup> Reach. The MRR proposed construction of a seepage/drainage berm along the landside toe of the dike for Reach 1. Following recent input from a variety of expert sources and, in consideration of lessons learned following Hurricane Katrina, the Jacksonville District convened an independent Technical Review (ITR) panel to further evaluate the design of the HHD rehabilitation project. Subsequently, the HHD rehabilitation project was redesigned. The new design concept includes toe-ditch fill, cut-off wall at the center of the dike, and seepage berm.

AUTHORIZATION: Herbert Hoover Dike is a component of the Central and Southern Florida (C&SF) Project for Flood Control and Other Purposes. The C&SF Project was authorized in the Flood Control Act of 1948, 1954, 1958, 1960, 1965 and 1968; Authorization in 1970 under Section 201 of the Flood Control Act of 1965, the Water Resources Development Acts of 1986, 1988, 1990, 1992 and 1996 and the Rivers and Harbors Act of 1930.

REMAINING BENEFIT - REMAINING COST RATIO: .94 to 1 at 6 1/8 percent.

TOTAL BENEFIT - COST RATIO: .96 to 1 at 7 percent.

BASIS OF BENEFIT - COST RATIO: Benefits are from the latest economic analyses performed for the November 2000 Major Rehabilitation Evaluation Report at October 2000 price levels. The Benefit Cost Ratio and Remaining Benefit Remaining Cost Ratio do not reflect the new design concept, and do not reflect the benefits of reduced human suffering and loss of life, since these cannot be quantified nor included in the calculation.

Division: South Atlantic

District: Jacksonville

Herbert Hoover Dike Major Rehabilitation, FL

5 February 2007

SUMMARIZED FINANCIAL DATA		ACCUM PCT OF EST FED COST	STATUS (1 January 2007)	PCT CMPL	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	855,900,000		Levees Reach 1	0	TBD
Estimated Non-Federal Cost	31,300,000		Levees Reaches 2 thru 8	0	Unscheduled
Cash Contributions	0		Total Project	0	Unscheduled
Other Costs	31,300,000				
<b>Total Estimated Project Cost</b>	<b>887,200,000</b>				
Allocation to 30 September 2004	3,548,000				
Allocations for 2005	1,384,000				
Allocations for 2006	16,221,000				
Conference Allowance for 2007	39,884,000				
Allocations for 2007	39,884,000	*			
Allocations through 2007	61,037,000	7%			
Allocation Requested for 2008	55,776,000	14%			
Programmed Balance to Complete after 2008	152,285,000	1/			
Unprogrammed Balance to Complete after 2008	586,802,000				

\* Assumed allocation. Final, actual allocations yet to be determined.  
1/ Reflects funding for Reach 1 only.

#### PHYSICAL DATA

Levees – Miles – Reach 1	22.4
Levees – Miles – Reaches 2-3	27.1
Levees – Miles – Reaches 4-8	85.3

Division: South Atlantic

District: Jacksonville

Herbert Hoover Dike Major Rehabilitation, FL

5 February 2007

JUSTIFICATION: The Major Rehabilitation of Reach 1 involves the construction of a cutoff wall with seepage berm and toe-ditch fill. Currently, there is a serious risk of catastrophic dike failure due to piping. Such an event, with subsequent flooding would result in extreme socio-economic and environmental damages; however, of paramount importance is the real potential for significant human suffering, including loss of life, which is not quantified in the benefit-cost analysis.

The average annual benefits are as follows:

Item	Amount
Flood Damage Reduction	4,986,977
Total Annual Benefits	4,986,977

FISCAL YEAR 2007: Fiscal Year 2007 funds will be used to complete design for Reach 1, award construction contracts of toe-ditch fill, seepage berm and cut-off wall on Reach 1, complete Supplemental Major Rehabilitation Report (MRR) and Environmental Impact Statement (EIS) on Reaches 2 & 3, initiate design for Reaches 2 & 3. Supplemental MRR 2 & 3 is scheduled for completion by June 2007.

FISCAL YEAR 2008: The requested amount of \$55,776,000 will be applied as follows:

Continue Reach 1 Construction Cnt	\$ 48,037,000
Planning, Engineering, and Design	3,943,000
Construction Management	3,796,000
Total	\$ 55,776,000

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the authorizing legislation, the non-Federal sponsor must comply with the requirements listed below.

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Provide lands, easements, and rights of way	31,300,000	
Total Non-Federal Costs	31,300,000	

Division: South Atlantic

District: Jacksonville

Herbert Hoover Dike Major Rehabilitation, FL

5 February 2007



STATUS OF LOCAL COOPERATION: A Project Cooperation Agreement (PCA) is not required for the Herbert Hoover Dike Project. There are resolutions through which the sponsor, South Florida Water Management District (SFWMD) commits to items of local cooperation. This consists of Resolutions 12 (1948) and 398(1949).

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps) cost estimate of \$855,900,000 is an increase of \$562,300,000 from the latest estimate (\$293,600,000) submitted to Congress (FY2007). This change includes the following items:

Item	Amount
Design Changes	\$539,100,000
Price Escalation on Construction Features	8,808,000
Schedule Changes	14,392,000
Total	\$562,300,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The draft EIS for the project was completed December 1998. A Supplemental EIS was prepared and completed in January 2005. Environmental Assessment (EA) for Reach 1 toe-ditch fill was released for public review on 11 December 2006. Draft Supplemental EIS for Reaches 2 & 3 will be published in federal register on 22 December 2006.

OTHER INFORMATION: A value engineering (VE) study was done on design for Reach 1 described in the 2000 MRR. The VE recommendation was a modified plan of the recommended plan in the MRR. Subsequently, a Detailed Design Report (DDR) analyzed the VE plan and determined it permitted too much seepage flow through the section and impacted local flood control. Following review by an outside expert panel, the design was modified to include toe-ditch fill, cut-off wall at the center of the dike, and seepage berm. The most recent approved MCASES is contained in the 2000 MRR. Cost estimates for the recently revised design of Sub-Reach 1A have been extrapolated to the remainder of the dike to provide a conservative estimate of costs. Supplemental reports will be prepared to review seepage and stability in other reaches of the dike. Preliminary analyses indicate that similar construction of a cut-off wall with seepage berm will be required in the 27-mile stretch of Reaches 2 and 3, which would completely rehabilitate the southern boundary. The plan would also implement tailwater control measures in Reaches 5 and 7, and portions of Reaches 4, 6, and 8. The total length of embankment along which tailwater control measures are proposed is 54.5 miles; therefore, the comprehensive rehabilitation plan involves some type of rehabilitation effort along 91 miles of the 143-mile long dike system.

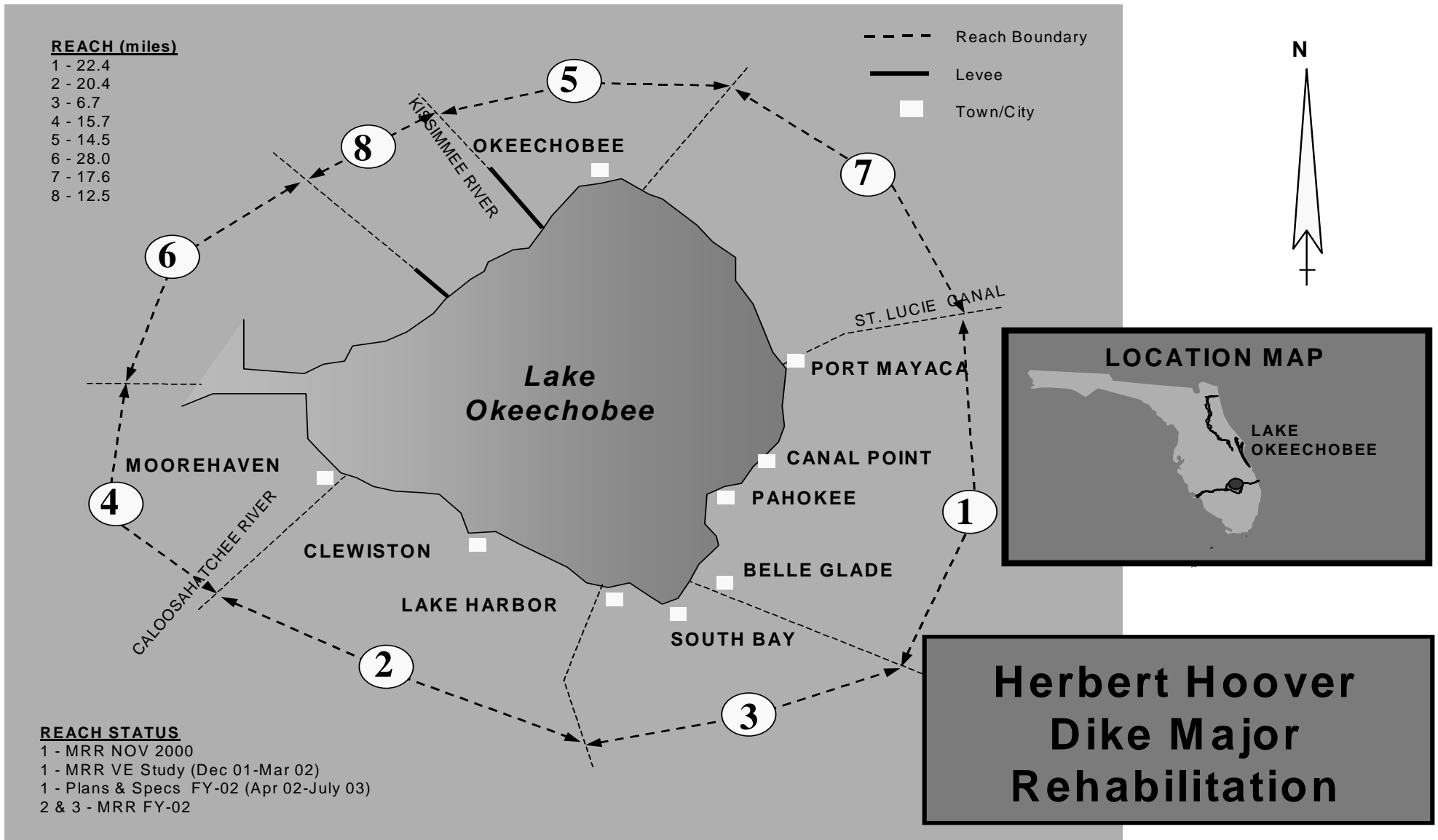
SUMMARIZED FINANCIAL DATA: HHD REACH 1

Estimated Federal Cost		269,098,000 <sup>1</sup>
Estimated Non-Federal Cost		10,300,000
Cash Contributions		
Other Costs	10,300,000	
Total Estimated Project Cost		279,398,000

1. Cost is estimated based upon recent design changes for sub-reach 1A.

REMAINING BENEFIT-REMAINING COST RATIO: N/A

TOTAL BENEFIT-COST RATIO: N/A



Division: South Atlantic

District: Jacksonville

Herbert Hoover Dike Major Rehabilitation, FL

5 February 2007

APPROPRIATION TITLE: Construction, General - Local Protection Projects (Flood Control)

PROJECT: Portugues and Bucana Rivers, Puerto Rico (Continuing)

LOCATION: Flood control improvements related to Portugues and Bucana Rivers are in, and near, the Municipality of Ponce, on the south coast of Puerto Rico.

DESCRIPTION: The SPF flood protection project involves construction of 9.1 miles of channel improvements, two multi-purpose dams with uncontrolled emergency spillways, a dependable water supply for the Ponce area, and recreational facilities on the lakes and channels. The Cerrillos Dam is located on the Cerrillos (Upper Bucana) River 9.5 miles above its mouth. The Cerrillos Dam is 323 feet high and its reservoir will provide 47,900 acre-feet of flood control and water supply storage. The estimated water supply yield of Cerrillos is 22 m.g.d. The Portugués Dam flood control structure will be located on the Portugués River 8.3 miles above its mouth. The Portugués Roller Compacted Concrete (RCC) Dam will be 219 feet high. The final reservoir will provide a total storage of 12,325 acre-feet. All work is programmed except the water supply increment of Portugues Dam.

AUTHORIZATION: Flood Control Act of 1970 and Water Resources Development Act of 1986.

REMAINING BENEFIT - REMAINING COST RATIO: 2.7 to 1 at 7 percent.

TOTAL BENEFIT - COST RATIO: 2.1 to 1 at 7 percent.

INITIAL BENEFIT - COST RATIO: 2.0 to 1 at 5.625 percent.

BASIS OF BENEFIT - COST RATIO: Benefits are from the July 1973 Design Memorandum Phase 1, Plan Formulation and Site Selection Report at July 1973 prices levels except for Portugues Dam where benefits are from the Post Authorization change report dated April 2004 and approved by MSC in July 2005.

SUMMARIZED FINANCIAL DATA			ACCUM PCT OF EST FED COST	STATUS (1 Jan 2007)	PCT CMPL	PHYSICAL COMPLETION SCHEDULE
Estimated Total Appropriation Requirement		\$531,900,000		Channels and Canals		
Programmed Construction	531,900,000			Lower Channels	100	Aug 1978
Unprogrammed Construction	0			Upper Bucana Channel	100	Jun 1983
Future Non-Federal Reimbursement		182,300,000		Upper Portugues Channel	95	TBD
Programmed Construction	182,300,000			Bucana River Debris Basin	100	Jun 1987
Unprogrammed Construction	0			Portugues Debris Basin	100	Mar 1987
Estimated Federal Cost (Ultimate)		349,600,000		Dams		
Programmed Construction	349,600,000			Cerrillos	100	Sep 1994
Unprogrammed Construction	0			Portugues (Flood Control)	30	TBD
Estimated Non-Federal Cost		396,274,000		Portugues (Water Supply)	0	Indefinite
Programmed Construction	372,387,000			Recreation		
Cash Contributions	53,700,000			Channels	60	TBD
Other Costs	104,713,000			Cerrillos	45	Nov 2007
Reimbursement				Portugues	0	TBD
Water Supply	213,974,000			Entire Project	85	TBD
Unprogrammed Construction	23,887,000					
Cash Contributions	23,887,000					
Other Costs	0					
Reimbursement	0					
Total Estimated Programmed Construction Cost		690,313,000				
Total Estimated Unprogrammed Construction Cost		23,887,000				
Total Estimated Project Cost		\$714,200,000				

Division: South Atlantic

District: Jacksonville

Portugues and Bucana Rivers, PR

5 February 2007

SUMMARIZED FINANCIAL DATA (Continued)

ACCUM  
PCT OF EST  
FED COST

Allocations to 30 September 2004	\$403,402,000	
Allocations for FY 2005	2,619,441	
Allocation for FY 2006	12,219,000	
Conference Allowance for FY 2007	2,500,000	
Allocation for FY 2007	2,500,000	*
Allocations through FY 2007	420,740,441	79%
Allocation Requested for FY 2008	35,000,000	86%
Programmed Balance to Complete After FY 2008	\$76,159,559	
Unprogrammed Balance to Complete After FY 2008	0	

\* Assumed allocation. Final, actual allocations yet to be determined.

PHYSICAL DATA

Dam	Portugues	Cerrillos
Type	Roller Compacted Concrete	Earth and rock-fill
Height	220 feet	323 feet
Crest Length	1,317 feet	1,555 feet
Spillway Type	Ungated concrete 150 feet wide	Ungated rock cut 400 feet wide
Reservoir Capacity (Acre-Feet)		
Flood Control	9,484	17,065
Water Supply	12,858	25,200
Sediment	2,841	5,635
Total	25,183	47,900
Portugues River Channel Enlargement		2.1 miles
Bucana River Channel Enlargement		5.7 miles
Diversion Channel Connecting Portugues River to the Lower Bucana River		1.3 miles

Division: South Atlantic

District: Jacksonville

Portugues and Bucana Rivers, PR

5 February 2007

JUSTIFICATION: The completed components of the project (lower channels of Cerrillos Dam) provides over 100 year flood event level of protection to the eastern urban side of the city but less than 25 years to the city's main residential, commercial, public and industrial areas. Only with completion of the Portugues Dam will these areas receive the SPF level of protection as designed and authorized. There are over 15,000 families and several billion dollars worth of property subject to flooding due to the un-completed Portugues Dam. This component is an integral part of the entire Portugues and Bucana project, and without it, the lower channels will not perform effectively. Close to \$10 million has been expended during the last 10 years to repair the lower channels and lower area due to high velocities and erosion from flood waters that are designed to be held back by the Portugues Dam. Potential annual flood damages in the area are still over \$25 million, and this is seriously undermining the economic base of the city and holding back its redevelopment into a service oriented (education, health, financial, information management, trade) economy. The additional investment of about \$125 million to complete the Portugues Dam is holding back, to a large extent, the beneficial economic development impact of the already invested \$500 million of the lower channels and Cerrillos Dam. The construction of the Portugues Dam will provide annual benefits of over \$25 million. Average annual benefits for the total project are as follows:

Annual Benefits	Amount
Flood Control	43,387,000
Water Supply	13,968,000
Recreation	2,418,000
Area Redevelopment	1,116,000
Total	60,889,000

FISCAL YEAR 2007: Fiscal Year 2007 funds will be used to award a geotechnical drilling contract in the quarry, complete engineering and design activities, and associated construction management.

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue Portugues Dam Construction Contract	\$30,000,000
Engineering During Construction	1,400,000
Construction Management	3,600,000
Total	\$35,000,000

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the Flood Control Act of 1970 and the Water Resources Act of 1986, the non-Federal sponsor must comply with the requirements listed below.

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, and Replacement Costs
Provide lands, easements, and rights-of-way.	\$83,325,000	
Modify or relocate buildings, utilities, roads, bridges, and other facilities, where necessary in the construction of the project.	21,388,000	
Pay additional cash required to bring the total Non-Federal share of the flood control costs to 25 percent and bear all costs of operation, maintenance, and replacement of flood control facilities.	37,721,000	249,900
Pay one-half of the separable costs allocated to recreation and bear all costs of operation, maintenance, and replacement of recreation facilities.	15,779,000	258,300
Pay all costs allocated to municipal and industrial water supply and bear all costs of operation, maintenance, and replacement of municipal and industrial water supply facilities.	23,887,000	85,700
Reimbursement for water supply on Cerrillos Dam	213,974,000	
<b>Total Non-Federal Costs</b>	<b>\$396,274,000</b>	<b>593,900</b>

STATUS OF LOCAL COOPERATION: The Commonwealth of Puerto Rico Department of Natural and Environmental Resources is the local sponsor. The following contract agreements are required pursuant to Section 221 of the River and Harbor and Flood Control Act of 1970 and the Water Resources Development Act of 1986:

Contract	Actual or Anticipated Execution Date
Section 221 – Cerrillos Reservoir Channels	15 Mar 1982 22 Jul 1974
Water Supply – Cerrillos Reservoir	15 Mar 1982
Recreation – Cerrillos Reservoir Channels	15 Mar 1982 24 Jun 1987
Project Cooperation Agreement – Portugues Reservoir	9 Aug 1993

Division: South Atlantic

District: Jacksonville

Portugues and Bucana Rivers, PR

5 February 2007



STATUS OF LOCAL COOPERATION (Continue):

Portugues Dam is a roller compacted concrete dam. The dam is designed as a multi-purpose dam to be constructed in two phases. The Commonwealth of Puerto Rico has requested that the dam be constructed as soon as possible for flood control and recreation, but to defer the water supply feature to a later date. By letter dated May 2003, the Commonwealth restated their commitment to the full and complete multi-purpose Portugues Dam, and agreed to pay the additional costs required for the phased construction.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps) cost estimate of \$531,900,000 is a decrease of \$4,500,000 from the estimate (\$536,400,000) last presented to Congress (FY 2006). This change includes the following items:

Item	Amount
Price Escalation on Construction Features	\$2,500,000
Design Changes	-7,000,000
Total	\$-4,500,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final EIS was filed with CEQ on 25 February 1974. A Supplemental EIS for the Portugues Dam was submitted in November 1992.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in Fiscal Year 1972. Funds to initiate construction were appropriated in Fiscal Year 1975.

SUMMARIZED FINANCIAL DATA FOR PROGRAMMED SEPARABLE ELEMENTS

Channels and Canals			
Estimated Federal Cost			
Programmed Construction		118,752,000	\$118,752,000
			62,107,000
Estimated Non-Federal Costs			
Programmed Construction		62,107,000	
Cash Contributions	3,726,000		
Other Costs	58,381,000		
Total Estimated Programmed Construction Cost			\$180,859,000
Total Estimated Project Cost			\$180,859,000

REMAINING BENEFIT - COST RATIO: Not applicable because construction is substantially complete.

SUMMARIZED FINANCIAL DATA FOR PROGRAMMED SEPARABLE ELEMENTS (Continued)

Cerrillos Dam

Estimated Total Appropriation Requirement		\$230,648,000
Future Non-Federal Reimbursement (Water Supply)		213,974,000
Estimated Federal Cost Ultimate		16,674,000
Estimated Non-Federal Cost Ultimate		247,567,000
Cash Contributions	9,713,000	
Other Costs	23,880,000	
Reimbursement:		
Water Supply	213,974,000	
Total Estimated Project Cost		\$264,241,000

REMAINING BENEFIT-REMAINING COST RATIO: Not applicable because construction is substantially complete.

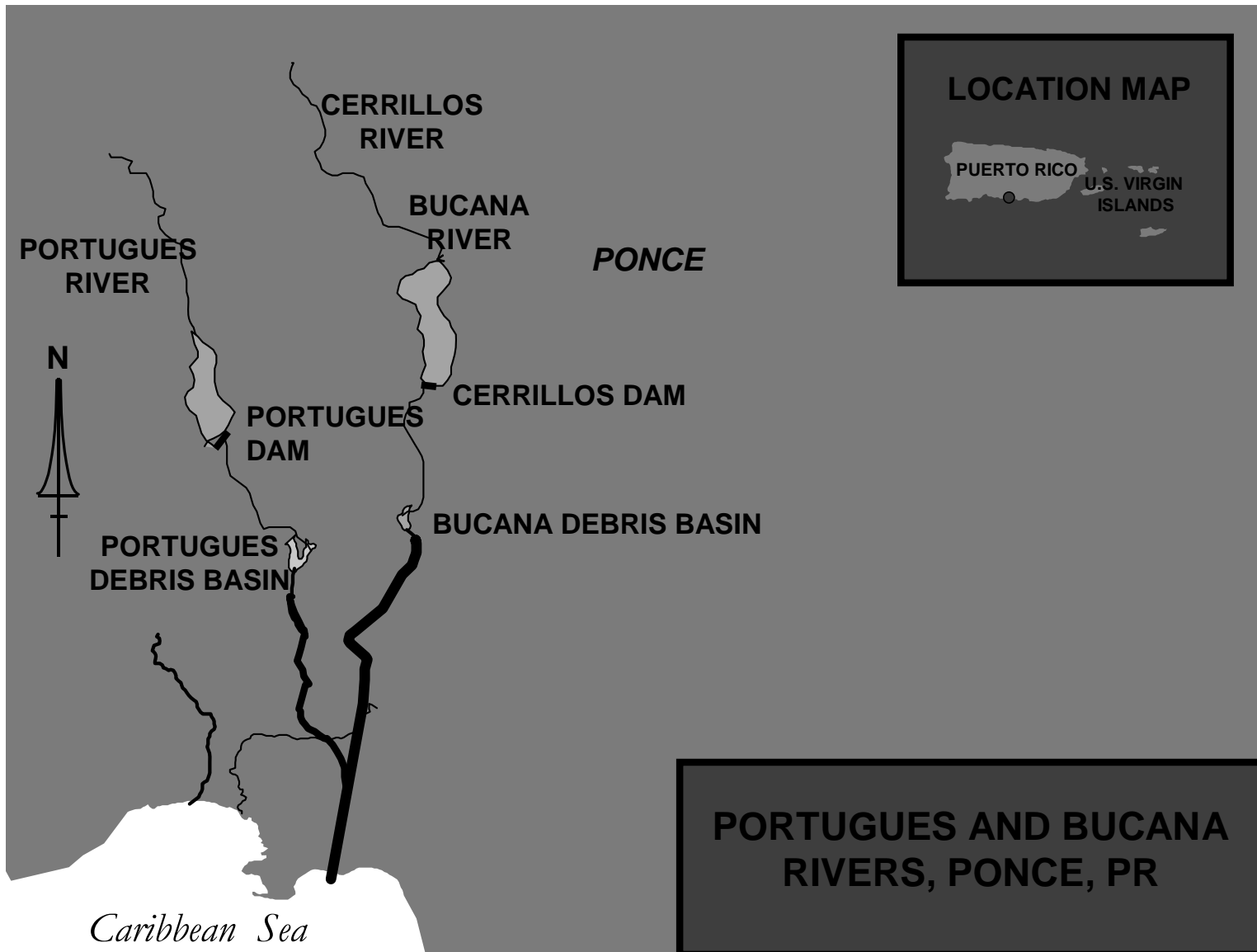
SUMMARIZED FINANCIAL DATA FOR PROGRAMMED SEPARABLE ELEMENTS (Continued)

Portugues Dam

Estimated Total Appropriation Requirement		\$182,500,000
Programmed Construction	182,500,000	
Unprogrammed Construction	0	
Estimated Non-Federal Cost		86,600,000
Programmed Construction	62,713,000	
Cash Contribution	41,439,000	
Other Costs	21,274,000	
Unprogrammed Construction	23,887,000	
Cash Contributions	23,887,000	
Other Costs	0	
Total Estimated Programmed Construction Cost		245,213,000
Total Estimated Unprogrammed Construction Cost		23,887,000
Total Estimated Project Cost		\$269,100,000

REMAINING BENEFIT-REMAINING COST RATIO: 2.7 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 2.1 to 1 at 7 percent.



APPROPRIATION TITLE: Construction, General - Local Protection Project (Flood Control)

PROJECT: Rio Puerto Nuevo, Puerto Rico (Continuing)

LOCATION: The Rio Puerto Nuevo drainage basin is located within the San Juan Metropolitan Area along the northern coast of Puerto Rico. The basin joins the southeast side of San Juan Harbor and extends south and up into the foothills of the central mountains of Puerto Rico. The Rio Piedras, Rio Puerto Nuevo, Quebrada Margarita, Quebrada Josefina, Quebrada Dona Ana, Quebrada Buena Vista, and Quebrada Guaracanal traverse the basin. The Río Puerto Nuevo Basin drains 24 square miles, 75 percent of which is highly developed with a population of 250,000 persons.

DESCRIPTION: The plan of improvement protects against the 100-year flood by the construction in the Puerto Nuevo River and its tributaries of 1.7 miles of earth lined channel, 9.5 miles of concrete lined channels (of which 5.1 miles are high velocity) and two debris basins. The plan will also require the construction of five new bridges, the replacement of 17 bridges, and the modification of eight existing bridges.

AUTHORIZATION: Water Resources Development Act of 1986.

REMAINING BENEFIT - REMAINING COST RATIO: 5.2 to 1 at 7 percent.

TOTAL BENEFIT - COST RATIO: 3.2 to 1 at 7 percent.

INITIAL BENEFIT - COST RATIO: 4.5 to 1 at 8.000 percent.

BASIS OF BENEFIT - COST RATIO: Benefits are from the economic analyses performed for the revised General Design Memorandum dated June 1991 at October 1989 price levels.

SUMMARIZED FINANCIAL DATA		ACCUM PCT OF EST FED COST	STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	347,000,000		Relocations	39	TBD
			Roads, Railroads, Bridges	45	TBD
Estimated Non-Federal Cost	130,500,000		Channels and Canals	46	TBD
Cash Contributions	53,423,000		Recreation	0	TBD
Other Costs	77,077,000				
Total Estimated Project Costs	477,500,000		Entire Project	43	TBD
Allocations thru 30 September 2004	119,667,000				
Allocation for FY 2005	15,450,000				
Allocation for FY 2006	18,800,000				
Conference Allowance for FY 2007	25,000,000				
Allocation for FY 2007	25,000,000	*			
Allocations through FY 2007	178,917,000	52%			
Allocation Requested for 2008	11,500,000	55%			
Programmed Balance to Complete after FY 2008	156,583,000				
Unprogrammed Balance to Complete after FY 2008	0				

\* Assumed allocation. Final, actual allocations yet to be determined.

#### PHYSICAL DATA

Relocations - Bridges (Replacement)	17
Relocations - Bridges (Modification)	8
Relocations - Bridges (Construction)	5
Canals - Miles	11.2
Debris Basins	2
Stilling Areas	2

JUSTIFICATION: The Rio Puerto Nuevo flows thru the middle of the San Juan Metropolitan area. The intense development in the basin has altered the natural discharge patterns, significantly increased the runoff rates and restricted the flows in the floodplain. In very short time, discharges reach over 30,000 cfs with stages of over 4 ft and velocities approaching 12 – 15 ft per second. There are over 250,000 people living in the 25 square mile drainage basin and over a quarter of a million people commute every day to work, study and visit the area. The area is 100% developed. About 125,000 persons are directly or indirectly affected by the 100-year flood. Property subject to flooding includes over 8,000 housing structures, several hospitals, police stations, dozens of schools and higher education colleges, San Juan Harbor ports facilities, electric power plants, wastewater treatment plant, main highways and bridges, the financial district and several regional shopping centers valued at over \$10 billion. Overflow of Rio Puerto Nuevo, even from very small floods resulting from frequent rainfalls of 2 inches or more in a few hours, bring the San Juan area to a stand still situation for hours several times per year. This results in millions of dollars of damages. San Juan is always part of Presidential Disaster Declarations for Puerto Rico associated with floods. There have been 8 of these during the last 20 years. Recently, Tropical Storm Jeanne, in 2004, resulted in FEMA expending over \$350 million in damage relief over the Island. Average annual inundation damage in the Rio Puerto Nuevo area is estimated at over \$75 million, over 90% of these damages will be reduced by the proposed flood control measures. Average annual benefits are as follows:

Annual Benefits	Amount
Flood Control	66,750,000
Total	66,750,000

FISCAL YEAR 2007: Fiscal Year 2007 funds will be used to continue the De Diego Bridge contract, the Bechara Channel contract, engineering during construction and construction management for the two construction contracts.

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue de Diego Bridge contract	\$ 4,785,000
Continue Bechara Channel contract	5,220,000
Planning, Engineering, and Design	575,000
Supervision and Administration	920,000
Total	\$ 11,500,000

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the authorizing legislation, the non-Federal sponsor must comply with the requirements listed below for programmed work.

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Provide lands, easements, right-of-way, and dredged material disposal areas.	31,782,000	0
Modify or relocate buildings, utilities, roads, bridges (except railroad bridges), and other facilities, where necessary in the construction of the project.	45,295,000	0
Pay one-half of the separable costs allocated to recreation and bear all costs of operation, maintenance, and replacement of recreation facilities.	449,000	0
Pay 12.37 percent of the first costs allocated to flood control, and bear all cost of operation, maintenance, repair, rehabilitation, and replacement of flood control structures.	52,974,000	0
<b>Total Non-Federal Costs</b>	<b>130,500,000</b>	<b>0</b>

The non-Federal sponsor has also agreed to make all required payments concurrently with project construction.

STATUS OF LOCAL COOPERATION: The Commonwealth of Puerto Rico Department of Natural and Environmental Resources is the local sponsor. A Project Cooperation Agreement for the project was executed in March 1994.

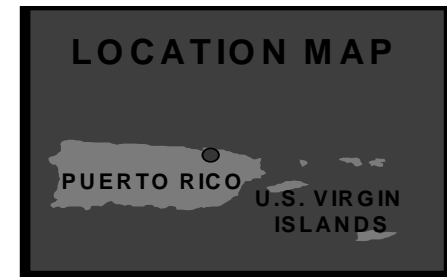
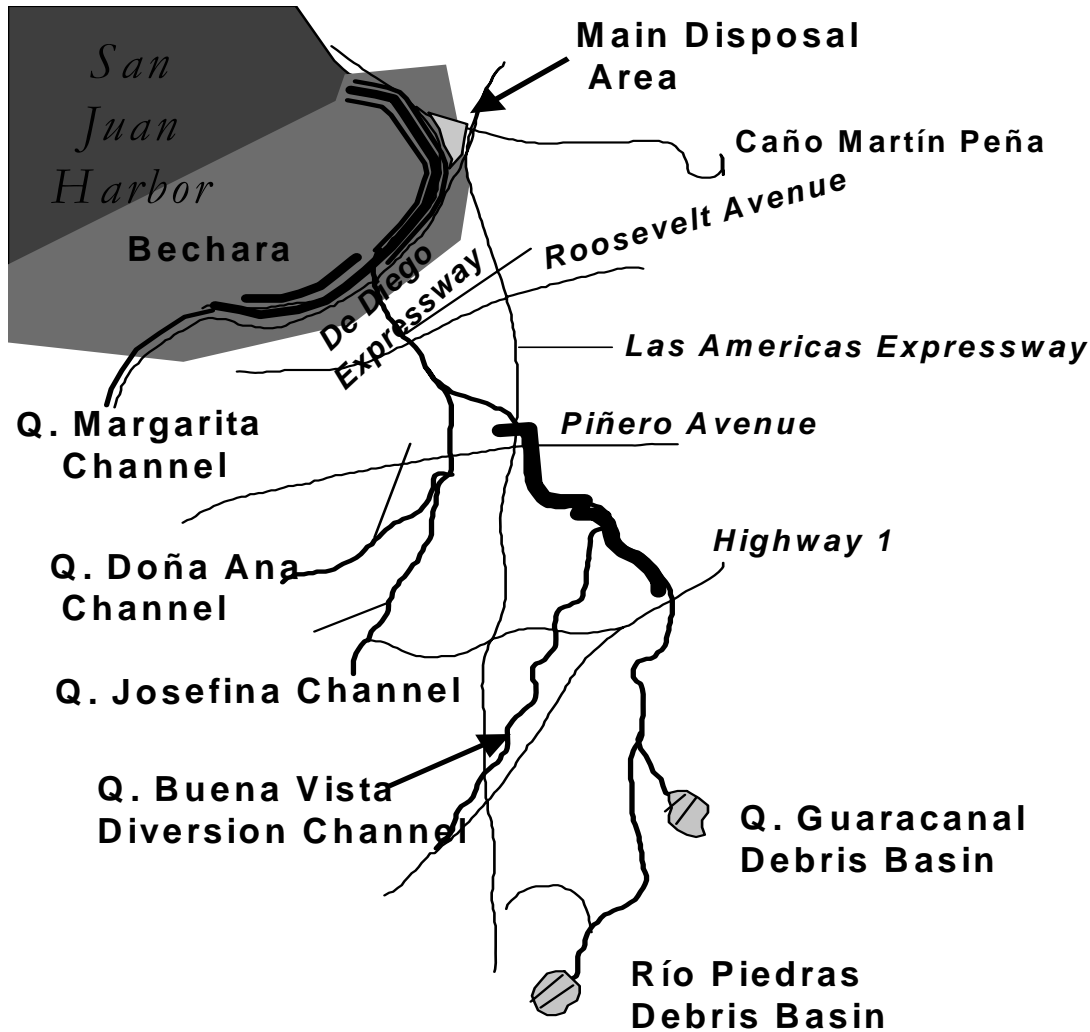
COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps) cost estimate of \$347,000,000 is an increase of \$7,500,000 over the last estimate (\$339,500,000) presented to Congress (FY 2007). This change includes the following items:

Item	Amount
Price escalation on construction features	\$ 5,425,000
Post contract award and other estimating adjustments	2,075,000
<b>Total</b>	<b>\$ 7,500,000</b>








STATUS OF ENVIRONMENTAL IMPACT STATEMENT: Environmental Impact Statement for the project was filed on 6 December 1985. The Finding of No Significant Impact (FONSI) was approved in July 1992.

OTHER INFORMATION: Funds to initiate preconstruction, engineering and design were appropriated in Fiscal Year 1987. Funds to initiate construction were appropriated in Fiscal Year 1994.





**LEGEND**

-  MAIN DISPOSAL AREA
-  CONCRETE CHANNELS
-  EARTH CHANNEL
-  VERTICAL WALLS
-  RECREATION FEATURE
-  MITIGATION AREA
-  LEVEE



# RIO PUERTO NUEVO PUERTO RICO

APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Roanoke River Upper Basin, Virginia, Headwaters Area (Continuing)

LOCATION: The project is located on the Roanoke River in the City of Roanoke, Virginia.

DESCRIPTION: The project includes about 6.2 miles of channel widening along the 10 miles of river through the City of Roanoke, Virginia. Channel widening will be accomplished with the construction of a benched channel above the elevation of the average stream flow. Other flood damage reduction features include flood proofing at two locations, training walls to prevent floodwater intrusion into low areas along the river, replacement of two low-level bridges that constrict stream flows, and a flood warning system. Recreation facilities consist of a 9.5-mile recreation trail along the project reach and access and parking areas. All work is programmed.

AUTHORIZATION: Water Resources Development Act of 1986, Energy and Water Development Appropriation Act of 1990 and Energy and Water Development Appropriation Act of 2004.

REMAINING BENEFIT - REMAINING COST RATIO: 2.5 to 1 at 7 percent.

TOTAL BENEFIT - COST RATIO: 1.6 to 1 at 7 percent.

INITIAL BENEFIT - COST RATIO: 1.1 to 1 at 8-7/8 percent (FY 1990).

BASIS OF BENEFIT - COST RATIO: Benefits are from the General Design Memorandum approved in January 1990 at 1988 price levels.

SUMMARIZED FINANCIAL DATA		ACCUM PCT OF EST FED COST	STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost		\$45,300,000	Entire Project	46	TBD
Estimated Non-Federal Cost		\$19,700,000			
Cash Contributions	8,357,150				
Other Costs	11,342,850				
Total Estimated Project Cost		\$65,000,000			
Allocations to 30 September 2004		\$12,390,000			
Allocation for FY 2005		2,782,000			
Allocation for FY 2006		5,250,000			
Conference Allowance for FY 2007		8,300,000			
Allocation for FY 2007		8,300,000	*		
Allocations through FY 2007		28,722,000	63		
Allocation Requested for 2008		10,150,000	86		
Programmed Balance to Complete after FY 2008		6,428,000			
Unprogrammed Balance to Complete after FY 2008		0			

\* Assumed allocation – Final, actual allocations yet to be determined.

#### PHYSICAL DATA

##### Project Features:

Channel Excavation	27,000 linear feet
Training Wall	6,300 linear feet
Paved Recreation Trail	50,160 linear feet
Parking/Access Areas	3 each
Riprap	28,000 tons

##### Relocations:

Utility	3,880 linear feet
Roads	2,000 linear feet
Overhead Line	6,350 linear feet
Buildings	13 each

Division: South Atlantic

District: Wilmington

Roanoke River Upper Basin, VA, Headwaters Area

5 February 2007

PHYSICAL DATA - Continued

Land Acquisition (acres):

Total Rights of Way Requirement	195
Flood Control Rights of Way	185
Disposal Areas (Temporary)	40
Recreation Rights of Way (Separable)	20
Right of Way Underwater	110

JUSTIFICATION: The project will provide improvements for flood protection and recreation. Most of the property that would be protected is industrial and commercial with a value of \$680,000,000. The average annual damages in the project area are estimated at \$5,777,000 at October 1988 price levels and 1988 level of development over the next 50 years if no flood control facilities are provided. The project would reduce these damages by \$3,126,200. The maximum flood of record, November 1985, caused damages estimated at \$112,424,000 under 1985 conditions of development and price levels. Damages at 1988 levels of development and October 1988 price levels would be \$119,997,000. Floodplain development is not promoted by the project. Return on investments by local businesses is adversely affected by the flood problem. Firms have to use resources to repair and attempt flood proofing that could be used for expansion and modernization. In this respect, return on investment is suppressed. The project will have a beneficial effect on a variety of firms and increase return on investment throughout the floodplain. Average annual benefits are as follows:

Annual Benefits	Amount
Flood Damage Prevention	\$5,111,000
Recreation	1,642,000
Total	\$6,753,000

FISCAL YEAR 2007: The allocated amount of \$8,300,000 will be used to continue construction, continue monitoring of endangered species, planning, engineering and design and construction management.

FISCAL YEAR 2008: The requested amount of \$10,150,000 will be applied as follows:

Complete work under Contract for Bench Cuts between Wasena Park and Walnut Street	\$3,000,000
Award and Complete Contract for Bench Cuts between Wasena Park and Blue Ridge Industrial Park	5,900,000
Continue Monitoring of Endangered Species	300,000
Planning, Engineering and Design	500,000
Construction Management	450,000
Total	\$10,150,000

Division: South Atlantic

District: Wilmington

Roanoke River Upper Basin, VA, Headwaters Area

5 February 2007

NON-FEDERAL COSTS: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below:

Requirements of local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Provide all lands, easements, and rights of way including suitable spoil disposal areas	\$ 6,220,000	
Modify or relocate buildings, utilities, roads and other facilities except railroad bridges, where necessary for construction of the project.	5,122,850	
Pay 25 percent of the cost of the flood warning system (partially offset by a credit for lands, easements, rights of way, and relocations).	10,000	
Pay 5 percent of the total cost allocated to flood control in cash in addition to all lands, easements, rights of way and relocations, and bear all costs of operation, maintenance, and replacement of flood control facilities.	2,680,150	\$101,000
Pay one-half of the separable cost allocated to recreation (partially offset by a credit for land, easements, rights of way and relocations) and bear all costs of operation, maintenance and replacement of recreation facilities	5,300,000	9,000
Pay 25 percent of the cost of the non-structural flood proofing (partially offset by a credit for lands, easements, rights of way and relocations).	367,000	
Total Non-Federal Costs	\$19,700,000	\$110,000

The non-Federal sponsor has also agreed to make all required payments concurrently with project construction.

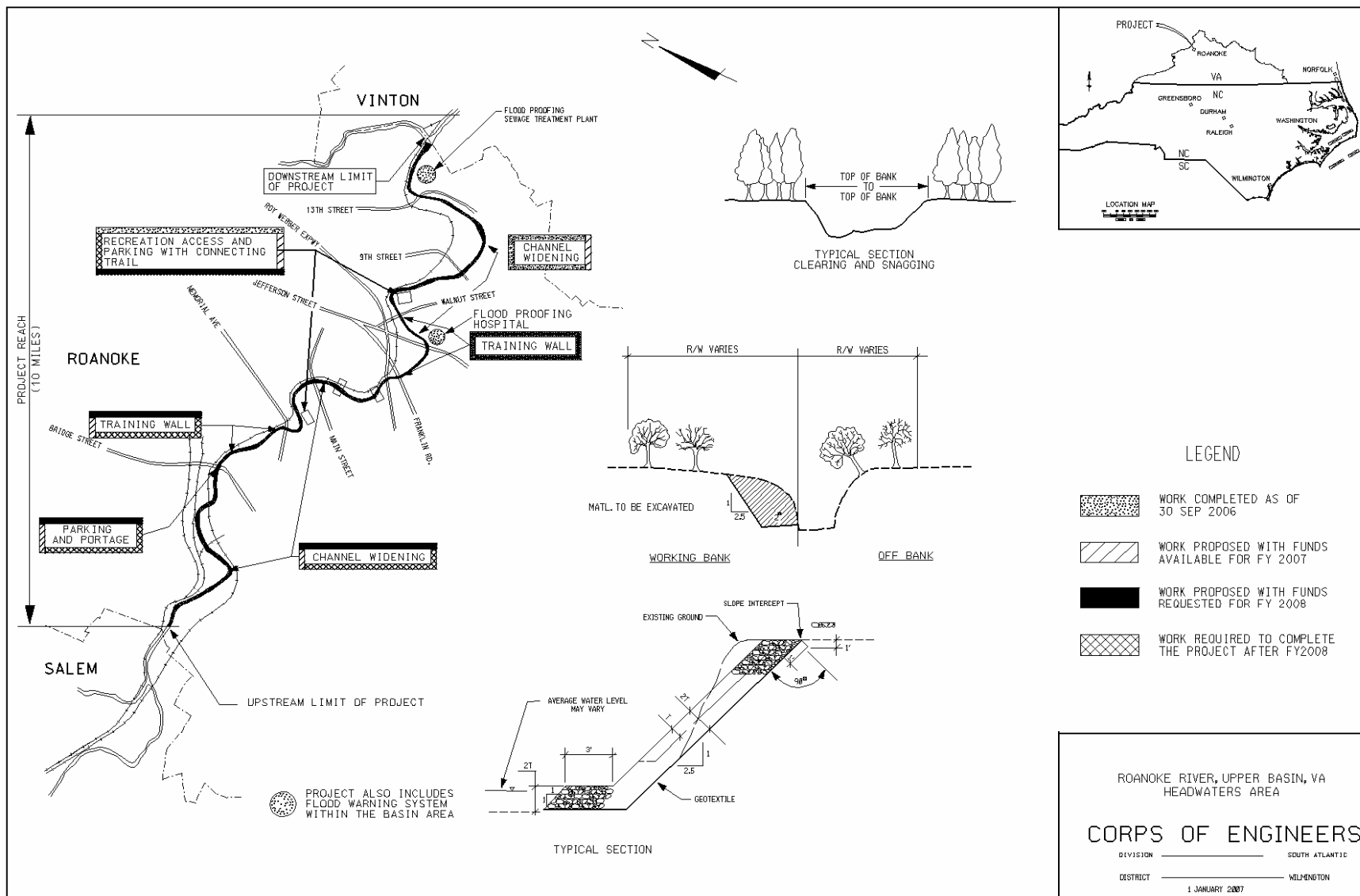
STATUS OF LOCAL COOPERATION: The City of Roanoke is the project sponsor. On 11 April 1989 the voters of the City of Roanoke approved the sale of \$7.5 million worth of bonds to pay Roanoke's required cash contribution, acquire lands that are not currently owned and pay for relocation of bridges and utilities. The Local Cooperation Agreement was executed on 25 June 1990. A supplement to the Local Cooperation Agreement addressing the reimbursement for the flood proofing of the hospital was executed in January 1993. Design and construction of the project had been deferred for eight years due to concerns the sponsor had over assuming liability for potential HTRW issues that might arise during project construction. The City in conjunction with the Corps, EPA and the Virginia Department of Environmental Quality conducted an extensive investigation and review of the project right of way to alleviate these concerns. Hazardous material was found at two sites. The landowner has cleaned these sites. Soil contamination was found at 14 other sites. A project action plan for the screening and disposal of this material has been prepared and reviewed by the sponsor and the Virginia Department of Environmental Quality.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps) cost estimate of \$45,300,000 is an increase of \$1,100,000 over the latest estimate (\$44,200,000) presented to Congress (FY 2007). This change includes the following items:

Item	Amount
Price Escalation on Construction Features	\$ 388,000
Post Contract Award and Other Estimating Adjustments	712,000
Total	\$1,100,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final environmental impact statement was filed with the Environmental Protection Agency in February 1985. A Finding of No Significant Impact for design changes was signed on 30 June 1989.

OTHER INFORMATION: Funds to initiate preconstruction engineering and design were appropriated in FY 1986 and funds to initiate construction were appropriated in FY 1990. The project was modified by the Energy and Water Development Appropriations Act of 2004 to increase the total estimated project cost to \$61,700,000 (October 2004 price levels). The Roanoke Loggerch, which is located in the project area, was listed as an endangered species effective 18 September 1989 and will be monitored during project construction. Reimbursement for the Federal share of the flood proofing of Roanoke Hospital, as authorized by Section 102cc of the Water Resources Development Act of 1990, in the amount of \$501,000, was made in February 1993.



Division: South Atlantic

District: Wilmington

Roanoke River Upper Basin, VA, Headwaters Area

5 February 2007

FLOOD AND COASTAL STORM DAMAGE REDUCTION  
CONSTRUCTION  
SOUTH PACIFIC DIVISION



APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Alamogordo, New Mexico (Continuing)

LOCATION: The project is located in Otero County, in and near Alamogordo, New Mexico. The city of Alamogordo is situated at the foot of the Sacramento Mountains near the eastern edge of the Tularosa (Closed) Basin.

DESCRIPTION: The authorized project consists of two concrete and rip-rap lined diversion channels and a flood detention structure which will intercept flood flows from canyons and arroyos in the Sacramento Mountains east of the City.

AUTHORIZATION: Flood Control Act of 1962 Energy and Water Appropriations Act (PL 108-137, Section 105) of 2004.

REMAINING BENEFIT - REMAINING COST RATIO: 6.2 to 1 at 7 percent.

TOTAL BENEFIT - COST RATIO: 2.2 to 1 at 7 percent.

INITIAL BENEFIT - COST RATIO: 5.8 to 1 at 7 percent (FY 1988).

BASIS OF BENEFIT - COST RATIO: Benefits are from the General Reevaluation Report, approved in March 1999, using October 1998 price levels.

SUMMARIZED FINANCIAL DATA		ACCUM. PCT. OF EST. FED. COST	STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$41,400,000		Entire Project	54	TBD
Estimated Non-Federal Cost	13,800,000				
Cash Contribution	\$11,600,000		PHYSICAL DATA		
Other Costs	2,200,000		Concrete Lined Channel:	47,500 ft.	
			Sediment Basins:	5	
Total Estimated Project Cost	\$55,200,000		Detention Basins:	1	
			Stilling Basin:	1	
Allocations through 30 September 2004	\$14,591,000		Relocation	3 (RR Bridges)	
Allocation for FY 2005	4,464,000				
Allocation for FY 2006	4,158,000				
Conference Allowance for FY 2007	N/A				
Allocation for FY 2007	4,200,000 *				
Allocations through FY 2007	27,413,000	66			

\* Assumed allocation. Final, actual allocations yet to be determined

Division: South Pacific

District: Albuquerque  
5 February 2007

Alamogordo, NM

SUMMARIZED FINANCIAL DATA (continued)	FED. COST	ACCUM. PCT. OF EST.
Allocation Requested for FY 2008	\$ 4,200,000	76
Programmed Balance to Complete after FY 2008	9,787,000	

JUSTIFICATION: There are no well-defined watercourses in the Tularosa (Closed) Basin. Several arroyos flow westward from the Sacramento Mountains through the city of Alamogordo, causing extensive damage to residential and business properties, schools and churches, utilities, streets, highways, roads, and other public properties. The major problem arroyos from north to south are Dry, Beeman, Marble, and Alamo Canyons. In addition, several minor unnamed arroyos in the vicinity contribute to the problem. Estimated total property valuation of the area in the 100-year flood plain is \$535,000,000 (1 October 2006). Estimated damages from an occurrence of the one percent chance flood under present conditions are \$95,000,000. Records indicate that from 1935 through 1959, eleven floods exceeded the capacity of railroad drainage structures in the area, overtopping the tracks by as much as two feet. Floods on 17 and 26 August 1959 caused estimated damages of \$240,000 and \$57,000, respectively. These damages, based on 1 October 2005 price levels, would be \$2,900,000 and \$710,000, respectively. Other minor flooding, occurring as recently as 1979 and 1984, caused City officials to be concerned about the flood threat. The most recent flooding occurred in Alamogordo on 1 and 22 June 2006 and were considered 100 year and 250 year flood events, respectively. These events, which occurred on only one of the arroyos, caused damages estimated at \$7,000,000. The average annual benefits are \$8,276,000, all flood control, based on October 1998 price levels.

FISCAL YEAR 2007: Current year funds will be used to:

Continue Construction of South Channel	\$ 3,100,000
Planning, Engineering and Design	600,000
Construction Management	500,000
Total	\$ 4,200,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue work under contract for South Channel Phase IV	\$ 3,000,000
Planning, Engineering and Design	700,000
Construction Management	500,000
Total	\$ 4,200,000

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below.

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation and Replacement Cost
Provide lands, easements, rights of way, and borrow and excavated or dredged material disposal areas.	\$ 1,600,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	600,000	
Pay 21 percent of the costs allocated to flood control to bring the total non-Federal share of flood control costs to 25 percent, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	\$11,600,000	\$143,000
Total Non-Federal Cost	\$13,800,000	\$143,000

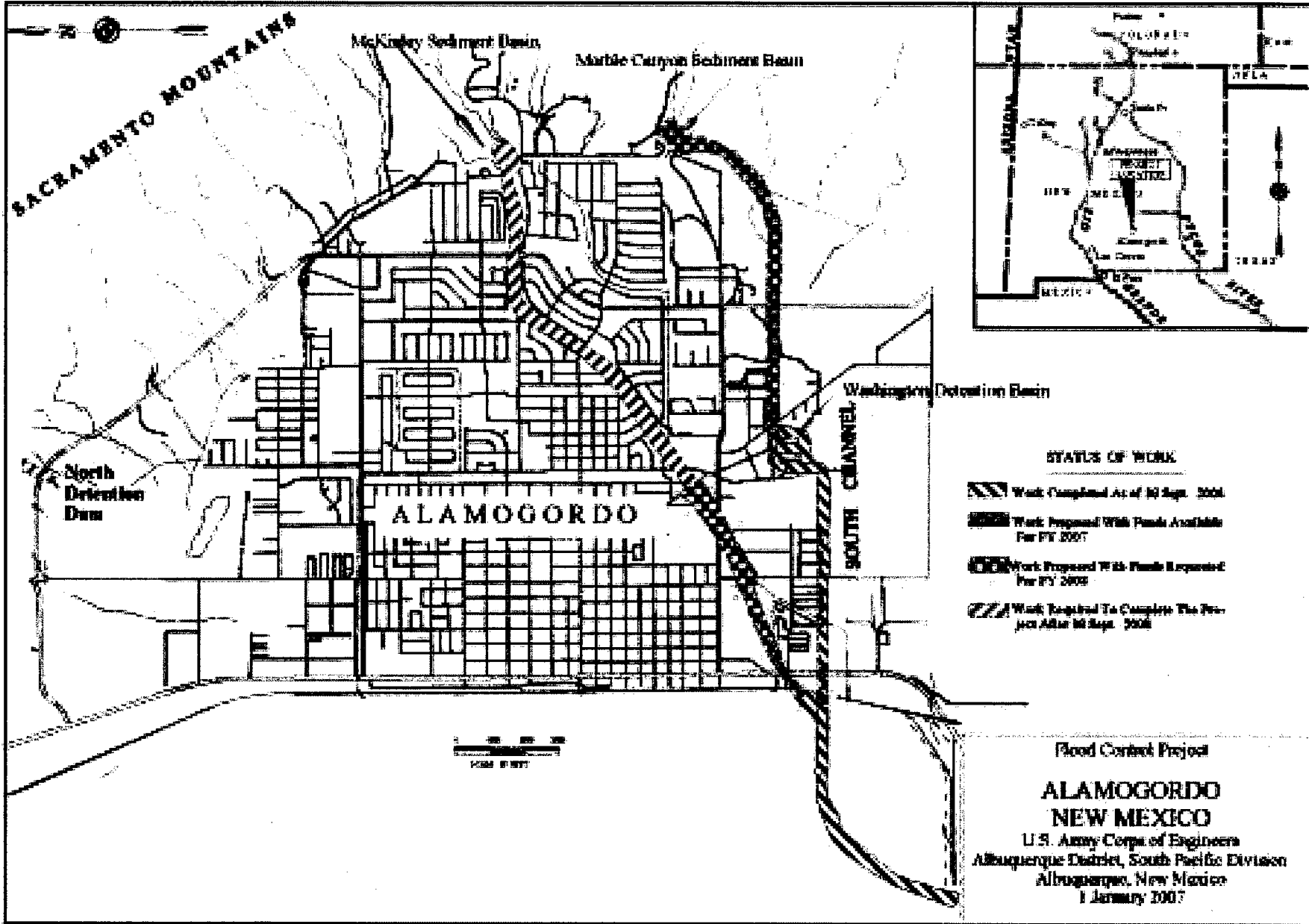
The non-Federal sponsor has also agreed to make all required payments concurrently with project construction.

STATUS OF LOCAL COOPERATION: The Project Cooperation Agreement with the city of Alamogordo, New Mexico, was executed in July 1999. The current non-Federal cost estimate of \$13,800,000, which includes a cash contribution of \$11,600,000 is the same as the non-Federal cost estimate noted in the Project Cooperation Agreement. Our analysis of the non-Federal sponsor's financial capability to participate in the project affirms that the sponsor has a reasonable and implementable plan for meeting its financial commitment.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$41,400,000 (1 October 2006) is the same as the latest estimate presented to Congress (FY 2007).





STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Environmental Assessment and Finding of No Significant Impact (FONSI) for the current plan of improvement were signed in October 1998.

OTHER INFORMATION: The city of Alamogordo has been working with the U.S. Army Corps of Engineers and the New Mexico Congressional delegation for over thirty years seeking a solution to the flood threat from the Sacramento Mountains located east of the City. Funds to initiate construction of the diversion channel were appropriated in Fiscal Year 1988. Work was discontinued in September 1988, without a contract being awarded, because the City could not give assurances of local cooperation due to the failure of a bond issue. To satisfy the concerns expressed by the City Commissioners and area residents, alternative solutions were investigated and outlined in an Interim Letter Report dated August 1992. The letter report recommended reevaluation of the project through the preparation of a General Reevaluation Report. The General Reevaluation Report addressed alternatives to the authorized Standard Project Flood protection plan. The new alternatives are being constructed in phases to accommodate the sponsor's financial plan. To that end, the City provided a letter of intent emphasizing their commitment and support for further analysis. The General Reevaluation Report was completed in April 1999. The General Reevaluation Report's recommended plan consists of construction of two new diversion channels and upgrading an existing earthen channel which will intercept flows from the Sacramento Mountains. Appurtenant project features include 5 sediment basins, 1 detention basin, and a stilling basin. The Local Sponsor requested that the U.S. Army Corps of Engineers consider a flood detention basin in place of the authorized channel to protect Alamogordo's north side from flooding. Section 105 of the Energy and Water Development Act, 2004 modifies the original project authority by authorizing and directing the Secretary "to construct a flood detention basin to protect the north side of the City of Alamogordo, New Mexico, from flooding. The flood detention basin shall be constructed to provide protection from a 100-year flood event. The project cost share for the flood detention basin shall be consistent with section 103(a) of the Water Resources Development Act of 1986, notwithstanding section 202(a) of the Water Resources Development Act of 1996." The Project Cooperation Agreement will be amended to incorporate this design modification.



5 February 2007

**STATUS OF WORK**

-  Work Completed As of 30 Sept. 2006
-  Work Proposed With Funds Available For FY 2007
-  Work Proposed With Funds Requested For FY 2008
-  Work Requested To Complete The Project After 30 Sept. 2006

**Flood Control Project**

**ALAMOGORDO  
NEW MEXICO**

U.S. Army Corps of Engineers  
Albuquerque District, South Pacific Division  
Albuquerque, New Mexico  
1 January 2007

APPROPRIATION TITLE: General - Local Protection (Flood Control)

PROJECT: American River Watershed, California (Continuing)

LOCATION: The project is located in Placer, El Dorado and Sacramento Counties. It is comprised of three principal streams, the North, Middle and South Forks of the American River, which flow westward into Folsom Lake, through the city of Sacramento and into the Sacramento River, and includes Folsom Dam and Reservoir, located on the American River, about 29 miles upstream of the city of Sacramento, California. The American River watershed drains about 2,100 square miles northeast of Sacramento. Runoff from this basin flows through Folsom Reservoir and passes through Sacramento to the confluence with the Sacramento River.

DESCRIPTION: Recent evaluations indicated that the level of flood protection along much of the American River is less than 100-year level. Several flood control projects have been authorized for construction for the American River to reduce the risk of flooding to Sacramento. American River Watershed Common Features consists of modifications to the lower American River levees and Sacramento River east levee in the Natomas Basin; modification of the Natomas Cross Canal levees; telemetered gages above Folsom Dam; and improving the flood warning system for the lower American River. Currently, Folsom Dam is designed to release up to 115,000 cubic feet per second (cfs) during flood operations, however the existing outlets limit releases to 36,000 cfs until approximately one half of the reservoir's flood control space is filled. Additional work is scheduled for Folsom Dam and related facilities to increase flood protection. Authorized work for Folsom Dam Modifications, which will allow releases much earlier, consists of enlarging the eight existing river outlets; adding two new outlets; modifying the existing stilling basin; and modifying the auxiliary spillway gates and dikes to raise the surcharge elevation four feet to allow for an additional 48,000 acre-feet of storage. The authorization to raise Folsom Dam seven feet makes the need for the surcharge component unnecessary. The authorized project to raise Folsom Dam includes raising related dikes and auxiliary dam, temperature shutter modifications, modifications to L. L. Anderson Dam/spillway on the middle fork of the American River, construction of a permanent bridge downstream of Folsom Dam, and ecosystem restoration projects. The Folsom Dam Modification project is currently undergoing reanalysis to provide functionally equivalent flood protection more cost effectively and for greater compatibility with related Folsom Dam safety work being pursued by the Bureau of Reclamation. Other alternatives, including construction of an auxiliary spillway, are being considered and evaluated as part of a Joint Federal Project. The Folsom Dam Raise is being reevaluated as part of the design refinements of the auxiliary spillway and Joint Federal Project to determine the optimum height of the raise that achieves, in combination with the other components of the Joint Federal Project, the overall project performance objectives in a cost effective manner.

AUTHORIZATION: Water Resources Development Acts of 1996 and 1999; Energy and Water Development Appropriations Act, 2004; Energy and Water Development Appropriations Act, 2006, Sec. 134 (permanent bridge).

REMAINING BENEFIT-REMAINING COST RATIO: 2.6 to 1 at 7 percent

TOTAL BENEFIT-COST RATIO: 2.2 to 1 at 7 percent

INITIAL BENEFIT-COST RATIO: 1.95 to 1 at 7 percent

BASIS OF BENEFIT-COST RATIO: Common Features – Initial benefits are from the Supplemental Information Report (SIR) approved June 1996 at 1995 price levels for work authorized in the Water Resources Development Act of 1996 (WRDA 96). Benefits and costs are originally from the Second Addendum to the SIR approved October 2002 at October 2001 price levels. Benefits were updated to current price levels in the Engineering Documentation Report, June 2006; the new benefit to cost ratio is 3.6 to 1. Remaining Benefit – Remaining Cost Ratio updated to 2007 price levels is 5.58 to 1. Folsom Dam Modifications – Initial benefits are from the American River Watershed Information paper dated August 1999 at October 1998 price levels, based on the Supplemental Information Report

BASIS OF BENEFIT-COST RATIO (Continued)

approved June 1996 at 1995 price levels. Folsom Dam Raise – initial benefits are from the American River Watershed Long Term Study (Appendix B, Alternative 8) dated February 2002. Benefits and costs are associated with flood damage reduction only, and do not include the permanent bridge.

SUMMARIZED FINANCIAL DATA		STATUS (1 JAN 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE	
<u>Common Features</u>					
Estimated Federal Cost		\$195,400,000	WRDA 96 Features	80	TBD
Estimated Non-Federal Cost		64,800,000	WRDA 99 Features	10	TBD
Cash Contribution	\$49,300,000		Entire Project	70	TBD
Other Costs	15,500,000				
Total Common Features		\$260,200,000			
<u>Folsom Dam Modifications</u>					
Estimated Federal Cost		\$149,800,000	Entire Project	20	TBD
Estimated Non-Federal Cost		80,600,000			
Cash Contribution	\$80,600,000				
Other Costs	0				
Total Folsom Dam Modifications		\$230,400,000 1/			
<u>Folsom Dam Raise</u>					
Estimated Federal Costs		\$185,400,000	Entire Project	16	TBD
Estimated Non-Federal Costs		98,600,000			
Cash Contribution	\$93,660,000				
Other Costs	4,940,000				
Total Folsom Dam Raise		\$284,000,000			
<u>Folsom Bridge</u>					
Estimated Federal Costs		\$ 71,800,000 2/			
Estimated Non-Federal Costs		37,800,000			
Cash Contribution	\$15,800,000				
Other Costs	22,000,000				
Total Folsom Bridge		\$109,600,000			

1/ Reflects maximum allowable cost in accordance with Section 902 limits.

2/ Includes \$39,700,000 for permanent bridge not subject to cost sharing requirements with non-Federal interests.

SUMMARIZED FINANCIAL DATA (cont'd)

Project Summary		
Estimated Federal Costs		\$602,400,000
Estimated Non-Federal Costs		281,800,000
Cash Contribution	\$239,360,000	
Other Costs	42,440,000	
Total Estimated Project Costs		\$884,200,000

ACCUM  
PCT OF EST  
FED COST

PHYSICAL DATA

Allocations to 30 September 2004	\$134,407,000	
Allocations for FY 2005	19,618,000	
Allocations for FY 2006	27,235,000	
Conference Allowance for FY 2007	0	
Allocation for FY 2007	46,800,000 *	
Allocations through FY 2007	228,060,000	38
Allocation Requested for FY 2008	36,500,000	44
Balance to Complete after FY 2008	\$337,840,000	

COMMON FEATURES -  
Streamflow Gages – Install 3 new  
telemetered gages upstream of  
Folsom Lake (WRDA 96)  
Flood Warning System – Install on  
lower American River (WRDA 96)  
Closure Structure – Install at Mayhew  
Drain (WRDA 99)

Levees:

- Construct slurry and jet grout cutoff wall on 19.7 miles of lower American River levees (WRDA 96)
- Modify 4.4 miles of American River levees (WRDA 96)
- Modify 12.1 miles of Sacramento River levees (WRDA 96)
- Modify 10 miles of Natomas Cross Canal levees (WRDA 99)

Authorized FOLSOM DAM MODIFICATIONS –  
Enlarge eight existing river outlets  
Construct two new outlets  
Modify existing stilling basin

Authorized FOLSOM DAM RAISE -  
Raise Folsom Dam, wing walls & dikes  
Modify LL Anderson Dam spillway  
Construct Bridge  
Accomplish ecosystem restoration

\* Assumed allocation. Final, actual allocations yet to be determined.



JUSTIFICATION: This flood and storm damage reduction project warrants a high funding priority in the because it addresses significant risk to human safety in accordance with the Army Corps of Engineers performance-based guidelines for the construction account. Folsom Dam and Reservoir are key features in the flood control system protecting Sacramento. Folsom Reservoir has a capacity of 975,000 acre-feet, which includes a minimum of 400,000 acre-feet of space seasonally dedicated to flood control. Significant rainfall in recent years has filled Folsom Lake and necessitated record releases in excess of design flow downstream. The levees along the American River are designed to accommodate releases from Folsom dam of up to 115,000 cfs. Downstream levees would likely fail with sustained flows above this level. Levee failure along the lower American River and Sacramento River could result in flooding of more than 100,000 acres, affecting approximately 330,000 residents. Damages could range from \$7 billion to \$16 billion, depending on the magnitude of the event. The Common Features project, consisting of levee improvements along the American and Sacramento River and Natomas Cross Canal, installation of new and telemetering existing streamflow gages and implementing a new flood warning system on the lower American River as authorized in WRDA 96 and WRDA 99 would decrease the probability of flood damage to about a 1 in 100 chance in any one year. With completion of construction features at key sites in FY2006, the levees are designed, constructed, and certified to convey the 100-year event. Average annual benefits for the Common Features portion amount to \$49,500,000, all flood control, escalated to October 2005 price levels. The authorized Folsom Dam Modifications project would enlarge eight existing river outlets, construct two new outlets and modify the existing stilling basin. This would further reduce the risk of flood damage to a 1 in 140 chance in any one year. Average annual benefits amount to \$34,900,000, all flood control, at October 2004 price levels. The Folsom Dam Raise Project would further reduce the risk of flood damage to a 1 in 213 chance in any one year. Average annual benefits amount to \$20,100,000, all flood control, at October 2004 price levels.

The Budget includes funding for this project primarily to address a significant risk to human safety. The Corps made this determination based on many factors such as the likelihood and magnitude of the potential flooding, the number of people living in the flood plane, the likely warning time, the availability of evacuation routes, and site-specific engineering factors.

FISCAL YEAR 2007: Current year funds will be applied as follows:

Folsom Dam Modifications	
Continue Engineering and Design	\$ 6,000,000
Total Folsom Mods	\$ 6,000,000
Folsom Dam Raise	
Continue Engineering and Design	\$ 8,400,000
Total Folsom Dam Raise	\$ 8,400,000
Folsom Bridge	
Initiate Bridge Construction	\$11,000,000
Engineering and Design	1,500,000
Construction Management	2,500,000
Total Folsom Bridge	\$ 15,000,000

FISCAL YEAR 2007 (Cont.):

Common Features	
Continue Construction of Slurry Walls and Floodwalls	\$ 6,943,000
Engineering and Design	9,757,000
Construction Management	700,000
Total Common Features	\$17,400,000
Grand Total, American River Watershed	\$46,800,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Folsom Dam Modifications	
Continue Engineering and Design	\$ 6,000,000
Total Folsom Mods	\$ 6,000,000
Folsom Dam Raise	
Continue Engineering and Design	\$ 4,500,000
Total Folsom Dam Raise	\$ 4,500,000
Folsom Bridge	
Continue Bridge Construction	\$12,500,000
Engineering and Design	500,000
Construction Management	1,000,000
Total Folsom Bridge	\$14,000,000
Common Features	
Continue Construction of Slurry Walls and Floodwalls	\$10,200,000
Engineering and Design	600,000
Construction Management	1,200,000
Total Common Features	\$12,000,000

Grand Total, American River Watershed

\$36,500,000

NON-FEDERAL COSTS: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below.

	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Requirements of Local Cooperation:		
Common Features		
Provide lands, easements, rights of way, and borrow and excavated or dredged material disposal areas.	\$14,950,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	550,000	
Pay 20 percent of the costs allocated to flood control to bring the total non-Federal share of flood control costs to 25 percent, as determined under Section 103 (m) of the Water Resources Development Act of 1996, as amended, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	49,300,000	\$ 53,000
<b>Total Common Features Non-Federal Costs</b>	<b>\$64,800,000</b>	<b>\$ 53,000</b>
Folsom Dam Modifications		
Pay 35 percent of the costs allocated to flood control, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	\$80,600,000	\$60,000 3/
<b>Total Folsom Dam Modifications Non-Federal Costs</b>	<b>\$80,600,000</b>	<b>\$60,000 3/</b>

3/ The operation and maintenance (O&M) would continue to be performed by the Bureau of Reclamation. An initial cost-sharing agreement has been negotiated between the Sacramento Area Flood Control Agency and the Bureau of Reclamation to pay the portion of O&M costs related to the new flood control features. Subsequent agreements are to be negotiated as project information is further defined.

NON-FEDERAL COSTS (cont'd)

	Payments During Construction and Reimbursements	Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Folsom Dam Raise – Raise Component		
Provide lands, easements, rights of way, and borrow and excavated or dredged material disposal areas.	\$ 2,136,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	2,804,000	
Pay 33 percent of the costs allocated to flood control to bring non-Federal share to 35 percent, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	82,585,000	\$293,000 4/
Pay 32 percent of the costs allocated to ecosystem restoration to bring non-Federal share to 35 percent.	11,075,000	
Total Folsom Dam Raise Component	\$98,600,000	
Folsom Dam Raise – Bridge Component		
Provide lands, easements, rights of way, and borrow and excavated or dredged material disposal areas (City of Folsom).	\$ 6,550,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project (City of Folsom).	4,000,000	
City of Folsom’s share of costs associated with bridge construction.	11,450,000	
Pay 21 percent of the costs allocated to flood control to bring non-Federal share to 35 percent,	15,800,000	

and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.

NON-FEDERAL COSTS (cont'd)

	Payments During Construction and Reimbursements	Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Total Folsom Bridge Component	\$37,800,000	
Total Folsom Dam Raise (including Bridge) Non-Federal Costs	\$136,400,000	\$293,000 4/
Total American River Watershed Non-Federal Costs	\$281,800,000	\$406,000

4/ The operation and maintenance (O&M) would continue to be performed by the Bureau of Reclamation. An initial cost-sharing agreement would be negotiated between the Sacramento Area Flood Control Agency and the Bureau of Reclamation to pay the portion of O&M costs related to the new flood control features.

STATUS OF LOCAL COOPERATION: The California State Reclamation Board and the Sacramento Area Flood Control Agency (SAFCA) are the non-Federal sponsors for the Common Features and Folsom Dam Modifications. The Project Cooperation Agreement (PCA) for the Common Features was executed in July 1998 for implementation of features authorized by WRDA 1996. On 12 September 2001, the Reclamation Board and SAFCA agreed to cost share the increase in cost to the then authorized maximum project cost of \$120.6 million. The non-Federal sponsor has indicated it is financially capable and willing to contribute the increased non-Federal share of the costs. The PCA for the Folsom Dam Modifications was executed on 30 March 2004. The California State Reclamation Board, SAFCA, Placer County Water Agency (LL Anderson Dam component) and the city of Folsom (Bridge component) are the non-Federal sponsors for the Folsom Dam Raise. The PCA for the Bridge was executed November 2006. The PCA for the Dam Raise is scheduled for execution in August 2008. The non-Federal sponsors are financially capable and willing to contribute the non-Federal share. The non-Federal sponsors have also agreed to make all required payments concurrently with project construction.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$602,400,000 is an increase of \$22,600,000 from the latest estimate (\$579,800,000) presented to Congress (FY 2007). This change includes the following:

Item	Amount
Price Escalation or De-escalation on Construction Features	\$ 8,600,000
Design Changes	14,000,000
Total	\$ 22,600,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: **Folsom Dam Raise** - A Supplemental Environmental Impact Statement/Environmental Impact Report (SEIS/EIR) was filed with the Environmental Protection Agency on 8 March 1996 for the American River Watershed Project. An Environmental Assessment was completed and published in the American River Watershed, California (Folsom Mods) Interim Limited Reevaluation Report (LRR) dated August 2001. The Finding of No Significant Impact (FONSI) was signed 16 August 2001. The final LRR dated November 2003 replaces previous interim LRRs and resulted in no change in the 16 August 2001 FONSI. **Folsom Bridge** – An SEIS/SEIR has been prepared to address the change in the Bridge component from a temporary to a permanent bridge. The Record of Decision was signed 27 October 2006.

OTHER INFORMATION: **Common Features** - Funds used to initiate preconstruction engineering and design of the common elements were allocated in FY 1996.

The American River Watershed Feasibility Report was completed in December 1991 and the Supplemental Information Report (SIR) was completed in March 1996. The SIR identified three candidate plans which would help reduce the flood risk facing Sacramento: modifying Folsom Dam and increasing the dedicated flood space; modifying Folsom Dam and the downstream system to allow increased objective releases; and constructing a detention dam upstream of Folsom Dam. In June 1996, the Chief of Engineers deferred a decision on a comprehensive flood control plan, but recommended that features common to all three plans be authorized as the first component of a comprehensive plan. WRDA 1996 authorized construction of the Common Features. Funds were appropriated in Fiscal Year 1998 to initiate construction. Additional flood control improvements along the lower American River and Natomas Cross Canal were authorized by Section 366 of WRDA 1999 as part of the overall project. The cost of slurry wall construction authorized by WRDA 1996 has increased significantly due to increased slurry wall quantities, the technical requirement for the more costly jet grout construction method for slurry wall construction around bridges and deep utilities, and several high-cost contract modifications due to slurry leaks during construction. The cost of planning, engineering and design has also increased. Project reauthorization was required to increase the project cost estimate to complete most of the remaining WRDA 1996 and WRDA 1999 features. The Second Addendum to the SIR, dated March 2002 and revised July 2002, serves as the decision document/post-authorization change (PAC) report. Based on this report, Section 129 of the Energy and Water Development Appropriations Act, 2004 increased the authorized first cost to \$205 million. For implementation of the Natomas Basin features a separate decision document/PAC is being prepared to address the previously unknown levee under-seepage problem along the Sacramento River and the associated increased cost. A General Re-evaluation Report is being prepared.

Construction of the first contract on the lower American River levees was initiated in July 1998. Relief well construction at Pioneer Reservoir and utility cutoffs at Miller Park is scheduled to complete in summer 2006. Construction on the Pocket geotech sites (underseepage) was initiated in August 2006. Fish and wildlife mitigation costs are currently estimated at \$3,691,000.

OTHER INFORMATION (cont'd)

**Folsom Dam Modifications** – Funds used to initiate preconstruction engineering and design on the Folsom Modifications were allocated in FY 2000. Funds to initiate construction were appropriated in FY 2001.

SAFCA prepared the Folsom Dam Modification Report New Outlets Plan dated March 1998 (SAFCA Outlet Report), which identified some proposed changes to the Folsom Modification Plan described in the 1996 SIR. The 1996 SIR as modified by SAFCA Outlet Report was the basis for the project authorized under the Water Resources Development Act of 1999. The LRR, dated November 2003, documents the 1996 SIR plan as modified by the SAFCA Outlet Report.

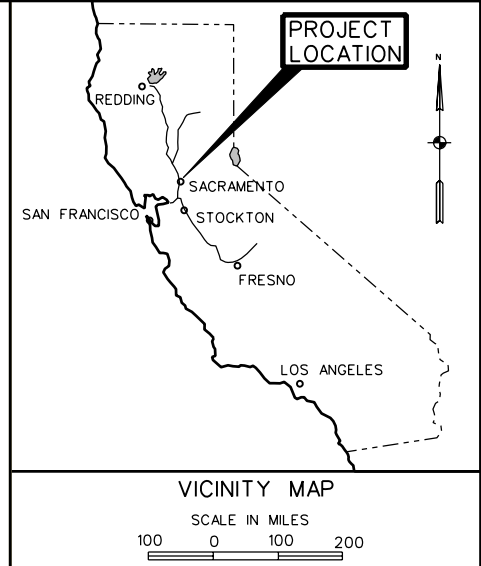
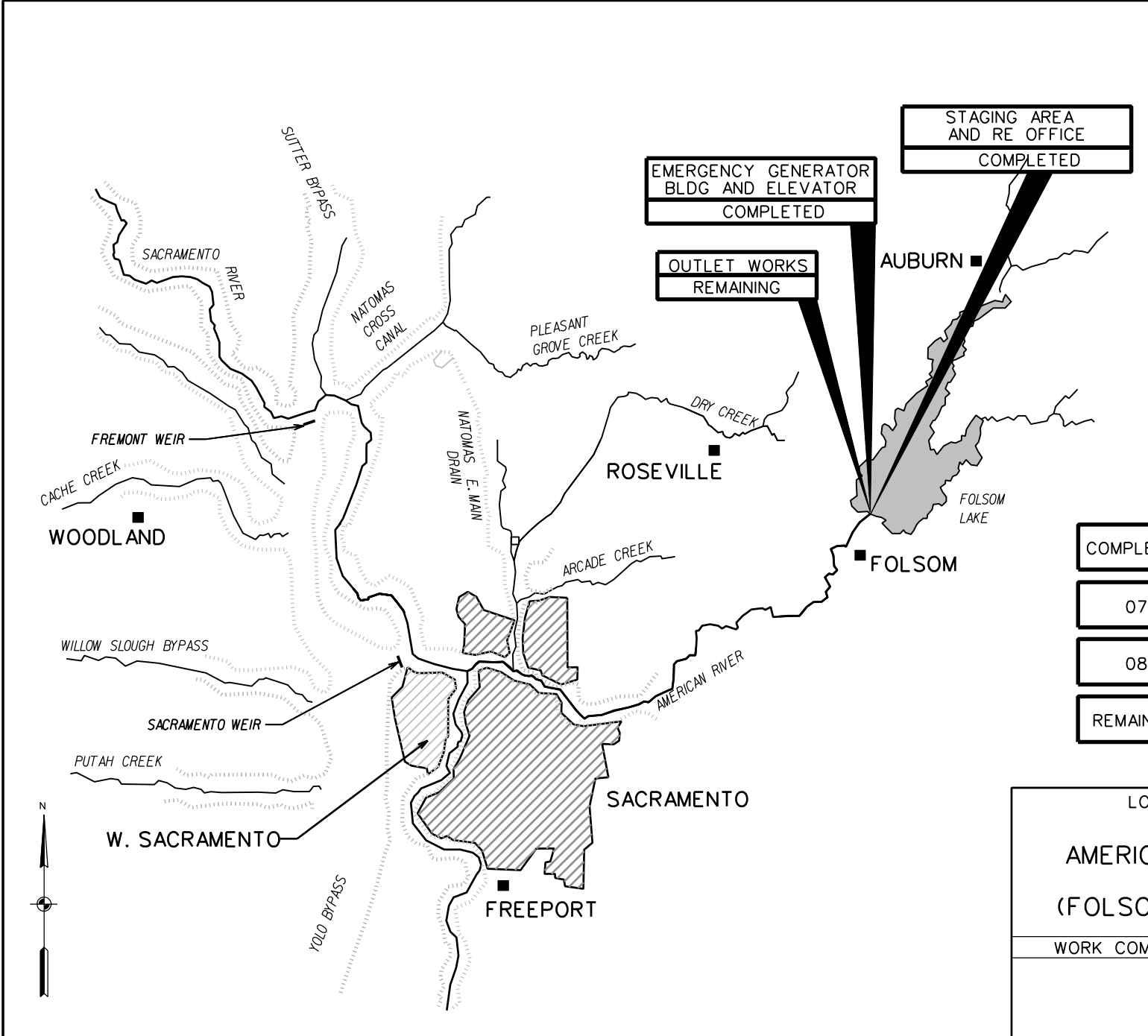
Fish and wildlife mitigation costs are currently not expected to be significant.

Current costs and benefits shown are based on the final LRR, dated November 2003. Average annual costs and flood control benefits for the outlet works component were revised to \$15.6 million and \$34.9 million, respectively, based on October 2004 price levels.

Information in FY 2007 budget submittal indicated that the project, as originally designed, would exceed the maximum authorized cost per Section 902 of WRDA 1986. Action was taken to conduct engineering evaluations and to develop a Post Authorization Change and Engineering Documentation Report (PAC/EDR) document recommending a functionally equivalent performance project that involves a new gated auxiliary spillway on the left embankment of Folsom Dam. The PAC/EDR will be done in parallel with the U.S. Bureau of Reclamation Mod Report in FY 2007 recommending the Joint Federal Project and addressing flood damage reduction improvements and dam safety needs at Folsom Dam. Engineering and design effort on the Folsom Dam Modifications portion of the Joint Federal Project will continue in FY 2008. Recent analysis in conjunction with the Folsom Dam Modifications auxiliary spillway design refinements indicate that a dam raise less than 7 feet may achieve the combined design objective of 1-in-200 year flood protection. The PAC/EDR will present the findings of that analysis and the recommendations for both the Folsom Dam Raise and Joint Federal Projects.

**Folsom Dam Raise** – The Long Term Study (Feasibility Report) for the entire American River Watershed was completed in February 2002. The Chief's Report, dated 5 November 2002, was followed by the Division Engineer's Public Notice issued on 22 March 2003. Funds to initiate construction were appropriated in FY 2004. The draft Post Authorization Change (PAC) Report was completed 1 Dec 2006. Fish and wildlife mitigation costs are currently not expected to be significant.

**Folsom Bridge** - Total Project cost (including only the temporary bridge component) was authorized at \$257,300,000 in PL108-137, Section 128. Section 128 also modified the cost sharing of the permanent bridge feature and required status reports to Congress.



**WORK STATUS**

<b>COMPLETED</b>	WORK COMPLETED AS OF 30 SEPTEMBER 2006
<b>07</b>	WORK PROPOSED WITH FUNDS AVAILABLE FOR FY 2007
<b>08</b>	WORK PROPOSED WITH FUNDS REQUESTED FOR FY 2008
<b>REMAINING</b>	WORK REQUIRED TO COMPLETE THE PROJECT AFTER FY 2008

LOCAL PROTECTION PROJECTS  
(FLOOD CONTROL)  
**AMERICAN RIVER WATERSHED  
CALIFORNIA  
(FOLSOM DAM MODIFICATIONS)**

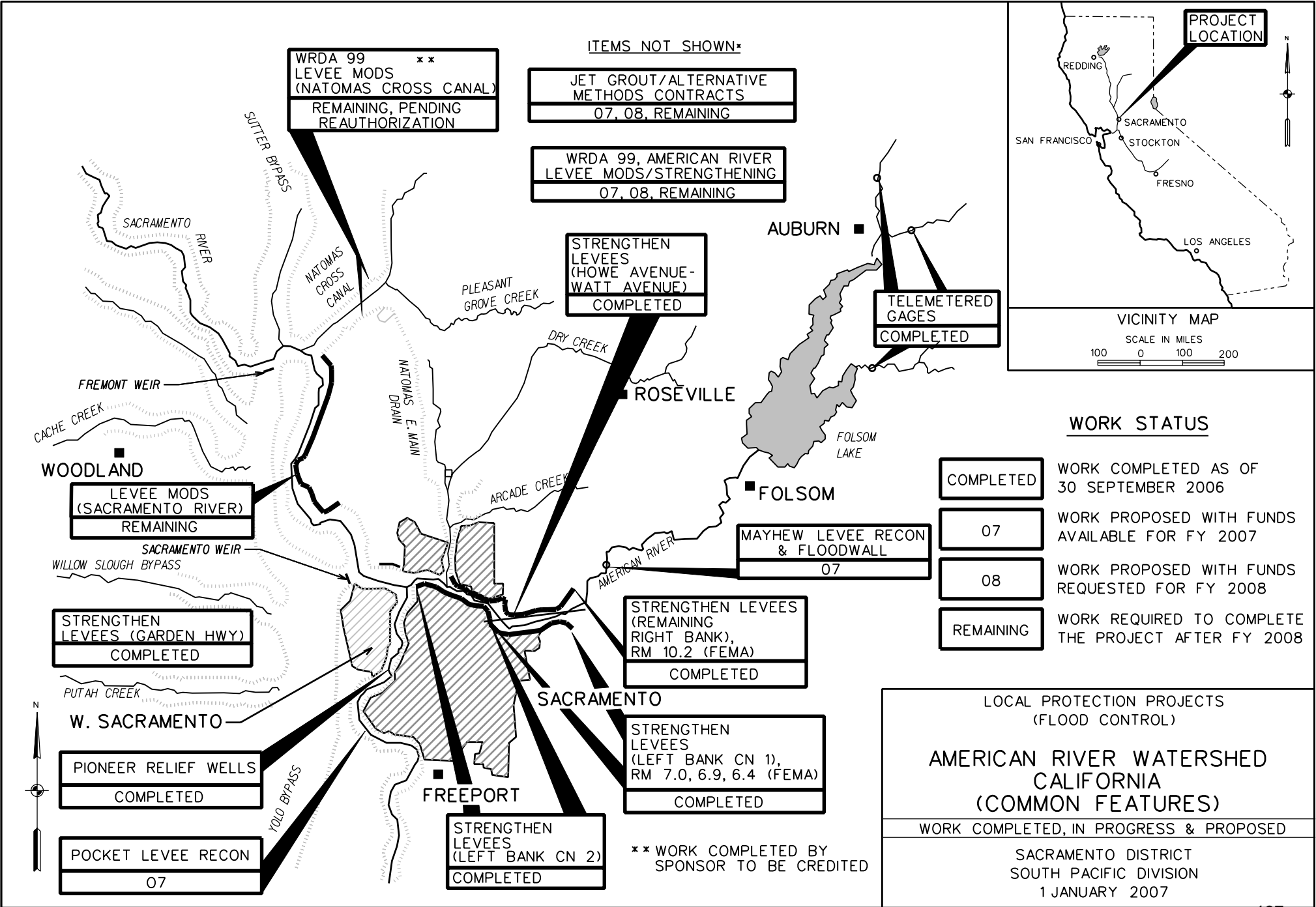
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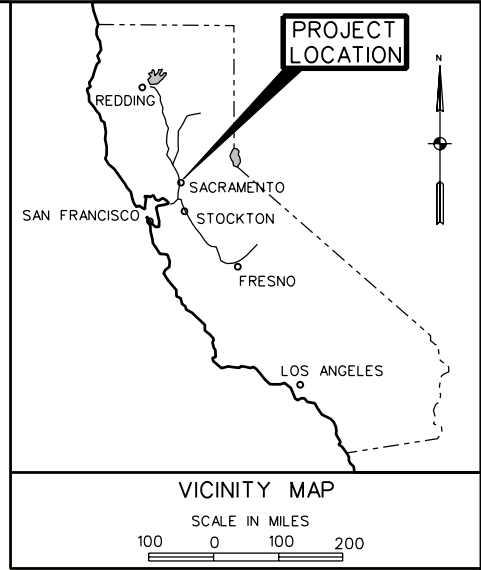
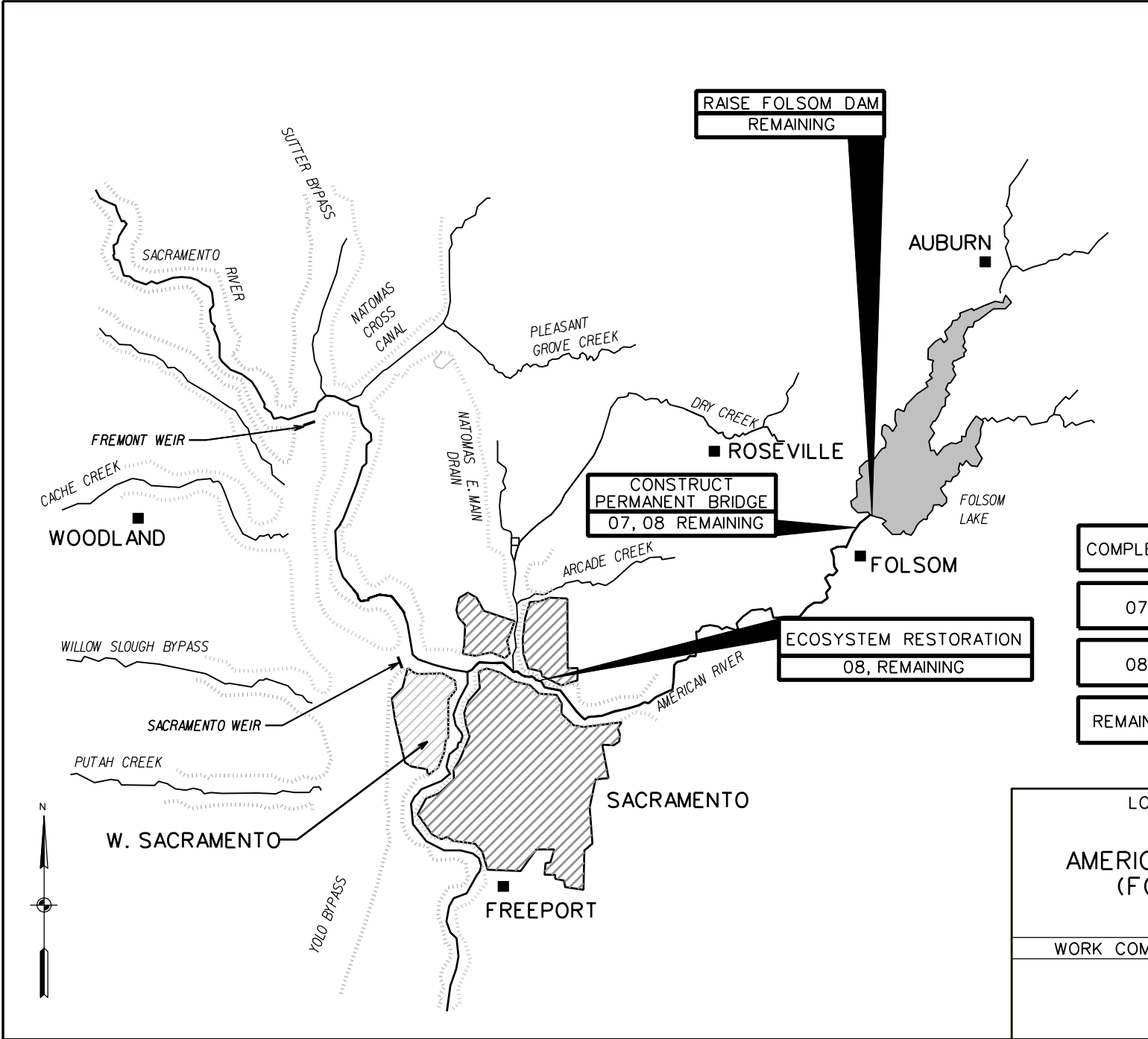
WORK COMPLETED, IN PROGRESS & PROPOSED

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SACRAMENTO DISTRICT  
SOUTH PACIFIC DIVISION  
1 JANUARY 2007







**WORK STATUS**

<b>COMPLETED</b>	WORK COMPLETED AS OF 30 SEPTEMBER 2006
07	WORK PROPOSED WITH FUNDS AVAILABLE FOR FY 2007
08	WORK PROPOSED WITH FUNDS REQUESTED FOR FY 2008
REMAINING	WORK REQUIRED TO COMPLETE THE PROJECT AFTER FY 2008

LOCAL PROTECTION PROJECTS (FLOOD CONTROL)  
**AMERICAN RIVER WATERSHED (FOLSOM DAM RAISE) CALIFORNIA**

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WORK COMPLETED, IN PROGRESS & PROPOSED

SACRAMENTO DISTRICT  
 SOUTH PACIFIC DIVISION  
 1 JANUARY 2007

APPROPRIATION TITLE: Construction - Local Protection (Flood Control)

PROJECT: Sacramento River Flood Control Project, Glenn-Colusa Irrigation District, CA (Continuing)

LOCATION: The project is located between Sacramento River Miles 202 and 206 near the Glenn-Tehama county line, approximately 100 miles north of Sacramento, California. Additional work is also being performed near River Mile 208.

DESCRIPTION: Since 1970, flood flows in the Sacramento River have altered the river channel and lowered the water surface at the Glenn-Colusa Irrigation District (GCID) Hamilton City pumping plant. Changing conditions cause significant adverse impacts to river stability, water supply and anadromous fishery resources in the area. The proposed plan for a gradient facility includes use of multiple sheet piles coupled with stone to replicate a natural riffle in the river to restore river hydraulic gradient to approximate pre-1970 conditions, and bank protection in the vicinity of the water intake facility. Concurrently, GCID, the State of California, and the U. S. Bureau of Reclamation have designed and constructed a new fish screen at the GCID pumping facilities. Although the Corps is not participating financially in the fish screen project, design and construction of the Corps' gradient facility is necessary for the proper operation of the GCID/State fish screen proposals. Project features also included proposed bank stabilization work in the riverbed gradient facility in the vicinity of River Mile 208. This bank stabilization work was deleted from the project when technical evaluation determined that the additional work was not required.

AUTHORIZATION: Flood Control Act of 1917, Energy and Water Development Appropriations Act of 1990, Water Resources Development Acts of 1996 and 1999, and Energy and Water Development Appropriations Act of 1999.

REMAINING BENEFIT-REMAINING COST RATIO: Not applicable because project construction is complete.

TOTAL BENEFIT-COST RATIO: 1.0 to 1 at 7 percent (See OTHER INFORMATION)

INITIAL BENEFIT-COST RATIO: (See OTHER INFORMATION)

BASIS OF BENEFIT-COST RATIO: (See OTHER INFORMATION)

STATUS (1 JAN 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Gradient Facility	100	Dec 2005
Entire Project	100	Dec 2005

SUMMARIZED FINANCIAL DATA:

Estimated Federal Cost		\$20,350,000
Estimated Non-Federal Cost		6,780,000
Cash Contribution	\$ 4,265,000	
Other Costs	1,000,000	
Sec. 215 Credit/Reimbursement	1,515,000	
Total Estimated Project Cost		\$27,130,000

		ACCUM PCT OF EST FED COST	PHYSICAL DATA
Allocations to 30 September 2004	\$19,231,000		Gradient up to 3.5' depth Sheet piling
Allocation for 2005	500,000		
Allocation for 2006	0		
Conference Allowance for 2007	0		
Allocation for 2007	0 *		
Allocation through 2007	19,731,000	97	
Allocations requested for 2008	500,000	99	
Programmed Balance to complete after 2008	0		
Unprogrammed Balance to complete after 2008	119,000 1/		

\* Assumed allocation. Final, actual allocations yet to be determined.

1/ Balance to complete project as scheduled.

JUSTIFICATION: The flood of 1969-1970 caused changes in the alignment of the Sacramento River. A cutoff occurred in 1970 at River Mile 205. This cutoff reduced the length of the flows in the river from two miles to approximately 1,400 feet, thus greatly increased the energy gradient and erosive capacity. Flood flows since then have caused the continued periodic degradation of the river hydraulic gradient. The elevation of the main river water surface at the mouth of the diversion channel to the Glenn-Colusa Irrigation District's pumps has been reduced about 3 feet. Lower water surface on the fish screens has resulted in losses to the anadromous fishery population. The most significant losses have occurred to the endangered winter-run salmon. The Gradient Facility is an integral part of proposed improvements that include a fish screen and fish bypass. These improvements will minimize losses to fish near the pumping plant diversion and will maximize Glenn-Colusa Irrigation District's capability to divert entitled water to meet delivery obligations. The Water Resources Development Act of 1999 authorized the Secretary to carry out bank stabilization work in the riverbed gradient facility, particularly in the vicinity of River Mile 208. Upon completion of technical evaluation, the work to RM 208 was found to be not required.

FISCAL YEAR 2008: The requested amount will be applied as follows:

Complete Gradient Facility Mitigation Contract	\$150,000
Planning, Engineering, and Design	350,000
Total	\$500,000

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, as amended, the non-Federal sponsor must comply with the requirements listed below:

	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Requirements of Local Cooperation		
Provide lands, easements, rights of way, and borrow and excavated or dredged material disposal areas.	\$ 1,000,000	
Pay 21 percent of the costs allocated to flood control to bring the total non-Federal share of flood control costs to 25 percent, as determined under Section 103 (m) of the Water Resources Development Act of 1986, as amended to reflect the non-Federal sponsor's ability to pay as reduced for credit allowed based on prior work (\$1,515,000 authorized under Section 215 of the Flood Control Act of 1968) and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	5,780,000	\$ 66,800
Total Non-Federal Costs	\$ 6,780,000	\$ 66,800

The non-Federal sponsor has also agreed to make all required payments concurrently with project construction.

STATUS OF LOCAL COOPERATION: A Project Cooperation Agreement with the Glenn-Colusa Irrigation District was executed in December 1999. The non-Federal cost estimate of \$6,780,000, which includes a cash contribution of \$4,265,000, is an increase of \$1,330,000 from the non-Federal cost estimate of \$5,450,000 noted in the Project Cooperation Agreement, which included a cash contribution of \$4,450,000. The sponsor claims that a deficiency exists at the gradient facility, but has refused to pay for deficiency analysis and remediation. This compromises ability to complete closeout actions even with additional Federal funding.

A Section 215 Agreement for construction of a portion of the authorized project by the local sponsor was executed on February 10, 2000 and limits Federal credit/reimbursement to no more than \$5,000,000, or 1 percent of total project costs, whichever is greater. Work to be accomplished by the sponsor includes installation and monitoring of off-site plantings and transplanting of elderberry bushes and hydraulic, biological, ecological and fish monitoring and evaluation.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$20,350,000 is a decrease of \$2,650,000 from the latest estimate (\$23,000,000) presented to Congress (FY 2003). This change includes the following items:

Item	Amount
Design Changes (Deletion of Bank Stabilization as RM 208)	- \$2,650,000
Total	- \$2,650,000

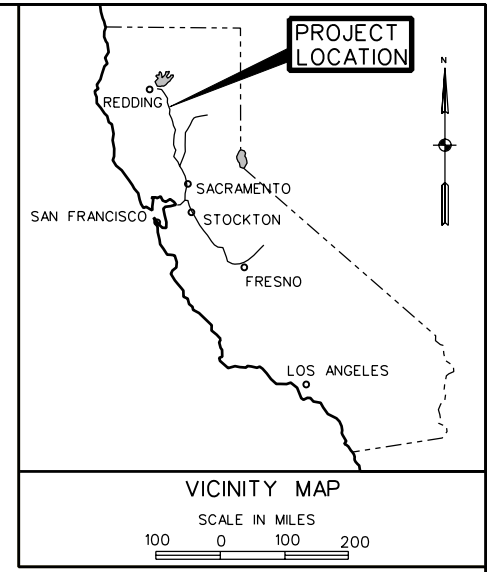
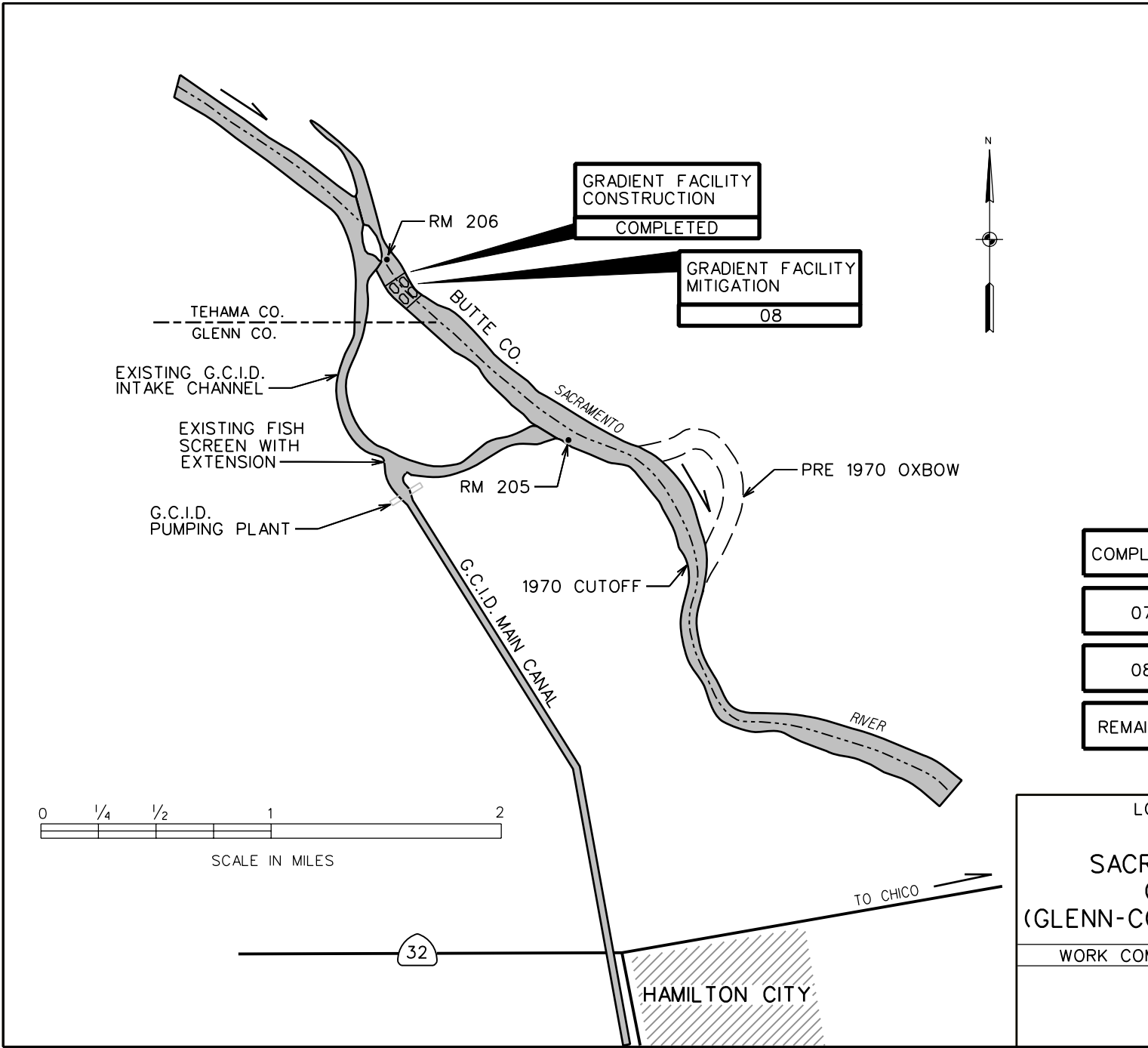
STATUS OF ENVIRONMENTAL IMPACT STATEMENT: A combined Environmental Impact Statement/Environmental Impact Report (EIS/EIR) meeting criteria of the National Environmental Policy Act and California Environmental Quality Act, respectively, was prepared by Glenn-Colusa Irrigation District with the U.S. Bureau of Reclamation and Corps as co-lead Federal agencies. The EIS/EIR addresses impacts of the fish screens and the gradient facility. The final EIS/EIR is complete and the Record of Decision was executed in April 1998. Additional environmental documentation that would have been completed prior to initiating construction of bank stabilization work at River Mile 208 was deferred along with the actual stabilization.

OTHER INFORMATION: Funds to initiate preconstruction engineering and design (PED) were appropriated in FY 1990, and funds to initiate construction were appropriated in FY 1991.

The Gradient Facility project was authorized by the Fiscal Year 1990 Energy and Water Development Appropriations Act at \$6.0 million, based on a local report prepared jointly by California Department of Fish and Game and Glenn-Colusa Irrigation District. The estimate was for construction only. The estimate excluded PED, lands costs, and features for boat passage and fish migration. The project was reauthorized by the Water Resources Development Act of 1996 at \$14.2 million. Subsequent to reauthorization, the local sponsor selected the flat screen design for fish screen improvement and the U.S. Bureau of Reclamation determined the size of the gradient facility required for proper operation of the fish screens. A Limited Reevaluation Report reflecting a larger gradient facility was approved in April 1998. The Energy and Water Development Appropriations Act of 1999 increased the authorized total project first cost to \$20.7 million (\$22 million fully-funded). Section 305 of the Water Resources Development Act of 1999 authorized a total project cost of \$26 million and included bank stabilization work in the riverbed gradient facility in the vicinity of River Mile 208. Although this work is intended to protect the overall integrity of the project, the local sponsor has requested additional time to monitor the site for actual bank stability. The Act directed that additional environmental review of the project will be conducted prior to carrying out the work. The bank stabilization work is currently unprogrammed.

Project benefits were last addressed in a feasibility report prepared by GCID and the State Department of Fish and Game dated November 1989. The annualized fishery and ancillary benefits ranged from \$3.2 million to \$6.5 million. While this project was authorized as flood damage reduction, in reality it is an environmental restoration project that does not require monetary benefit-cost analysis normally required for flood damage reduction.

The fish and wildlife mitigation cost is currently estimated at \$3.25 million.



**WORK STATUS**

<b>COMPLETED</b>	WORK COMPLETED AS OF 30 SEPTEMBER 2006
<b>07</b>	WORK PROPOSED WITH FUNDS AVAILABLE FOR FY 2007
<b>08</b>	WORK PROPOSED WITH FUNDS REQUESTED FOR FY 2008
<b>REMAINING</b>	WORK REQUIRED TO COMPLETE THE PROJECT AFTER FY 2008

LOCAL PROTECTION PROJECTS  
(FLOOD CONTROL)

**SACRAMENTO RIVER FLOOD CONTROL PROJECT  
(GLENN-COLUSA IRRIGATION DISTRICT)**

WORK COMPLETED, IN PROGRESS & PROPOSED

SACRAMENTO DISTRICT  
SOUTH PACIFIC DIVISION  
1 JANUARY 2007

204



APPROPRIATION TITLE: Construction - Local Protection (Flood Control)

PROJECT: Napa River, California (Continuing)

LOCATION: The project is located in the city and county of Napa, California. The Napa River drainage basin, comprising 426 square miles, is just north of San Pablo Bay and approximately 40 miles northeast of San Francisco, California.

DESCRIPTION: The project consists of channel modifications to provide the project area with 100-year level of flood protection from Napa River and Napa Creek. Channel modifications include overbank excavation, vertical walls, floodwalls, levees, bridges, pumping stations, and flowage easements. The project also includes recreation trails and major ecosystem restoration including restoration of over 730 acres of scarce San Francisco Bay estuary habitats.

AUTHORIZATION: Flood Control Acts of 1965 and 1976.

REMAINING BENEFIT-REMAINING COST RATIO: 2.6 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 1.5 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 1.3 to 1 at 7 percent (FY 2000).

BASIS OF BENEFIT-COST RATIO: Benefits are from the latest available evaluation in the Final Supplemental General Design Memorandum, October 1998, at 1 October 1997 price levels. Incidental ecosystem restoration benefits are excluded in calculating the benefit cost ratios. The Final Supplemental General Design Memorandum was approved in May 1999.

SUMMARIZED FINANCIAL DATA		STATUS (1 JAN 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE	
Estimated Federal Cost		\$156,900,000	Entire Project	65	TBD
Estimated Non-Federal Cost		\$153,800,000			
Cash Contributions	\$ 16,050,000				
Other Costs	136,650,000				
Section 215 Credit	1,100,000				
Total Estimated Project Cost		\$310,700,000			

Division: South Pacific

District: Sacramento  
5 February 2007

Napa River, California

SUMMARIZED FINANCIAL DATA (Continued)

		ACCUM PCT OF EST FED COST	PHYSICAL DATA
Allocations to 30 September 2004	\$48,571,000		Channel Modifications along Napa River from Highway 29 to Trancas Street - 6.9 miles:
Allocations for FY 2005	11,964,000		excavation - 1.63 Mil cy
Allocations for FY 2006	11,880,000		widening - 16,900 ft
Conference Allowance for FY 2007	0		vertical walls - 1,600 ft
Allocation for FY 2007	9,000,000 *		floodwalls - 13,200 ft
Allocations through FY 2007	81,415,000	52	levees - 9,900 ft
Allocation Requested for FY 2008	7,500,000	57	training dikes - 7,000 ft
Balance to Complete after FY 2008	67,985,000		bypass channel - 1,300 ft
			Channel Modifications along Napa Creek Main Street to Earl Street - 4,000 ft:
			excavation length - 1,100 ft
			Pumping stations 3 each
			Bridges
			roadway 6 each
			pedestrian 3 each
			Recreation Trails - 19,000 ft
			Flowage easement - 418.2 acres
			Ecosystem Restoration - 60 acres

\* Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: The Napa River Basin, ranging from tidal marshes to mountainous terrain, is subject to severe winter storms and frequent flooding. In the lower reach of the river, flood conditions are aggravated by high tides from San Pablo Bay and local runoff. The population in the city of Napa was approximately 76,700 in January 2006. Many residential, business and industrial buildings are located by the Napa River within the City limits. Excluding public facilities, the present value of damageable property within the project floodplain is over \$500 million. Flooding in the Napa area has occurred in 1955, 1958, 1963, 1965, 1986 (flood of record) and 1995. The 1986 flood (estimated to be a 55-year event) resulted in 3 people dead, 27 injured, an estimated \$50-\$100 million in property damages throughout Napa County, and the evacuation of approximately 3,500 residents. The 1986 flood crested at 30.2 feet. The predicted crest for a 100 year flood is 32 feet. During the January 1995 flood (estimated to be a 50-year event) the Napa River crested at about 27 feet, and during the March 1995 flood the river crested near 31 feet. Although the March 1995 river crest was higher than the 1986 flood, fewer damages were incurred during the 1995 flood due to a rain stoppage three to four hours before the crest arrived, allowing the tributaries to partially subside. The damage assessments for the January and March 1995 floods report property damages of \$10 million and \$75 million, respectively. The floods resulted in 227 businesses and 843 residences being damaged county-wide. The project will provide 100-year level of flood protection. Ecosystem restoration includes the creation of tidal and seasonal wetlands and marshes, thus enhancing the

Division: South Pacific

District: Sacramento  
5 February 2007

Napa River, California

JUSTIFICATION (Cont.):

San Francisco Bay estuary, which provides both nationally and regionally scarce habitat. Average annual benefits (October 1997 price levels) are as follows:

Annual Benefits	Amount
Flood Damage Prevention	\$16,074,000
Recreation	310,000
Ecosystem Restoration	3,293,000
Total	\$19,677,000

FISCAL YEAR 2007: Current year funds will be applied as follows:

Continue Contract 2W Hatt to First Engineering and Design During Construction	\$ 7,500,000
Construction Management	500,000
Total	\$ 9,000,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Complete Contract 2W Hatt to First Engineering and Design During Construction	6,200,000
Construction Management	900,000
Total	\$ 7,500,000

NON-FEDERAL COSTS: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below.

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Provide lands, easements, rights of way, and borrow and excavated or dredged material disposal areas.	\$ 84,399,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project. (Includes section 215 reimbursement for railroad bridge.)	53,351,000	
Pay 5 percent of the costs allocated to flood control and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	15,467,000	\$357,000
Pay one-half of the separable costs allocated to recreation (except recreational navigation) and bear all costs of operation, maintenance, repair, rehabilitation and replacement of recreation facilities.	583,000	44,000
<b>Total Non-Federal Costs</b>	<b>\$153,800,000</b>	<b>\$401,000</b>

The non-Federal sponsor has also agreed to make all required payments concurrently with project construction.

STATUS OF LOCAL COOPERATION: The Napa County Flood Control and Water Conservation District is the local sponsor for both the flood control and recreation purposes of the project. In June 1999, the Napa County Flood Control and Water Conservation District indicated support for the project and intent to cost share both project purposes. In March 1998, the Napa County electorate passed "Measure A" which will fund the non-Federal share of the project. The Project Cooperation Agreement was executed in February 2000. The current non-Federal cost estimate of \$153,800,000, which includes a cash contribution of \$16,050,000, is an increase of \$62,800,000 from the non-Federal cost estimate of \$91,000,000 noted in the Project Cooperation Agreement, which includes a cash contribution of \$9,345,000. The sponsor agrees with current costs and continues to be financially able to support the project.

A Section 215 Agreement for construction of a portion of the authorized project by the local sponsor was executed on 16 January 2002. It limits Federal credit/reimbursement to no more than \$5,000,000, or 1 percent of total project costs, whichever is greater. In FY 2002, the local sponsor completed construction for a total cost of \$1.1 million. Initial reimbursement for \$500,000 was made 30 September 2003.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$156,900,000 is an increase of \$20,600,000 from the latest estimate (\$136,300,000) presented to Congress (FY 2007). This charge includes the following items.

Item	Amount
Price Escalation on Construction Features	\$ 7,500,000
Design Changes	13,100,000
Total	\$20,600,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final EIS was filed with EPA on 18 December 1997. The Record of Decision was signed on 9 June 1999.

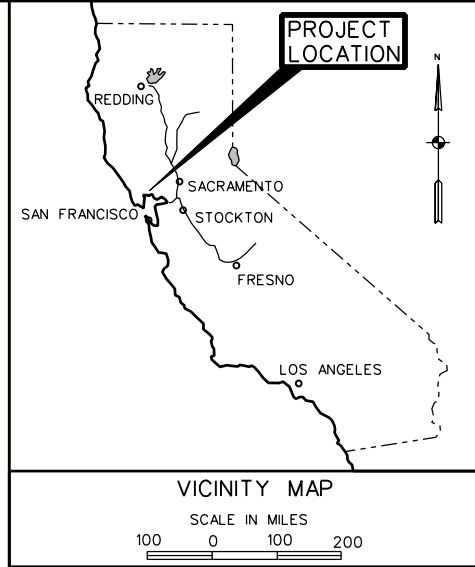
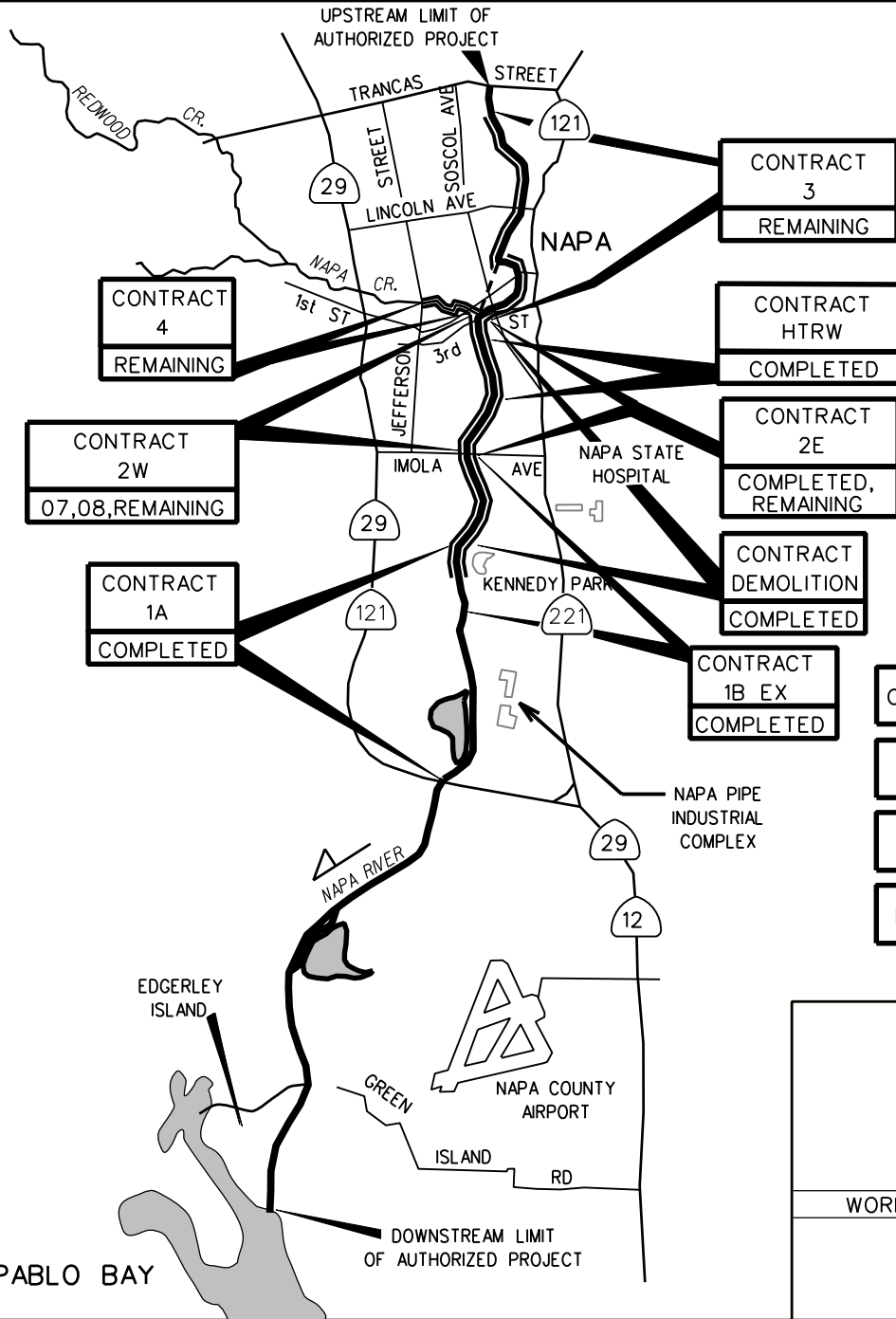
OTHER INFORMATION: Funds to resume preconstruction engineering and design were appropriated in Fiscal Year 1989. Funds to initiate construction were appropriated in Fiscal Year 2000.

On 31 December 2005, the City of Napa experienced flooding from both the Napa River and Napa Creek. The flood level experienced was second only to the record flood of 1986. Damages to the city, although high at an estimated \$80-120 million, did not reach the flood stages experienced in 1986. Partially completed project features (flood terraces and raised bridges) are credited with reducing the flood damages. Damage to the current contracts and previously constructed project features are anticipated to be minimal.

ITEMS NOT SHOWN

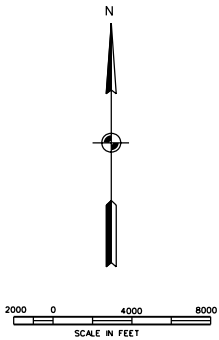
CULTURAL RESOURCE MITIGATION  
 COMPLETED, 07, REMAINING

NAPA VALLEY WINE TRAIN RAIL ROAD RELOCATION  
 08, REMAINING



WORK STATUS

COMPLETED	WORK COMPLETED AS OF 30 SEPTEMBER 2006
07	WORK PROPOSED WITH FUNDS AVAILABLE FOR FY 2007
08	WORK PROPOSED WITH FUNDS REQUESTED FOR FY 2008
REMAINING	WORK REQUIRED TO COMPLETE THE PROJECT AFTER FY 2008



LOCAL PROTECTION PROJECTS (FLOOD CONTROL)

**NAPA RIVER CALIFORNIA**

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WORK COMPLETED, IN PROGRESS & PROPOSED

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SACRAMENTO DISTRICT  
 SOUTH PACIFIC DIVISION  
 1 JANUARY 2007

APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Rio Grande Floodway, San Acacia to Bosque del Apache Unit, New Mexico (Continuing)

LOCATION: The project is located in Socorro County, New Mexico along the Rio Grande, and extends from the upper end of the Rio Grande low-flow conveyance channel at the San Acacia diversion works to the head of Elephant Butte Reservoir.

DESCRIPTION: The plan of improvement consists of the reconstruction of 45 miles of existing spoil bank levee which separates the Rio Grande low flow conveyance channel from the cleared floodway, replacement of the railroad bridge at San Marcial, and the acquisition of the 2,000 plus acre Tiffany Area as a sediment control basin. The level of protection is a discharge of 46,000 c.f.s. at Socorro, New Mexico, corresponding to an exceedance interval of 100 years.

AUTHORIZATION: Flood Control Act of 1948 and Water Resources Development Act of 1992.

REMAINING BENEFIT - REMAINING COST RATIO: 2.6 to 1 at 7 percent.

TOTAL BENEFIT - COST RATIO: 2.3 to 1 at 7 percent.

INITIAL BENEFIT - COST RATIO: 2.9 to 1 at 7 percent (FY 1992).

BASIS OF BENEFIT - COST RATIO: Benefits are from the Appendix to the Project Decision Document dated December 1993 at October 1993 price levels.

SUMMARIZED FINANCIAL DATA		ACCUM. PCT. OF EST. FED. COST	STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost		\$62,300,000	Entire Project	0	TBD
Estimated Non-Federal Cost		8,900,000			
Cash Contribution	\$8,190,000				
Other Costs	710,000				
Total Estimated Project Cost		\$71,200,000			
Allocations to 30 September 2004		\$ 6,430,000			Levees - 45 Miles
Allocations for FY 2005		548,000			Railroad Bridge Relocation
Allocations for FY 2006		966,000			Sediment control basin
Conference Allowance for FY 2007		N/A			
Allocation for FY 2007		700,000 *			
Allocations through FY 2007		8,644,000	14		

\* Assumed allocation. Final, actual allocations yet to be determined

SUMMARIZED FINANCIAL DATA (continued)

ACCUM.  
PCT. OF EST.  
FED. COST

Allocation Requested for FY 2008	\$ 800,000	15
Programmed Balance to Complete after FY 2008	52,856,000	

JUSTIFICATION: The project will provide protection from the 100-year flood. The flood of record, in September 1929, produced a peak discharge of 60,000 cubic feet per second on the Rio Grande at the San Acacia gage. Irrigation and transportation facilities were either disrupted or destroyed. Over 90 percent of the irrigated farmland in a 60 mile reach of the Rio Grande was severely damaged, and the original villages of San Acacia, San Antonio, and San Marcial were destroyed. Damages sustained at that time were \$1,500,000; under current conditions and prices the damages would be \$270,000,000. The last major flood event occurred in 1965 with minor flooding in 1967 and 1979. The value of property within the 100-year flood plain is \$348,000,000. Residential property within the 100-year flood plain is worth \$45,000,000. The Rio Grande low-flow conveyance channel, built by the U.S. Bureau of Reclamation in 1961, is the primary damageable property in the project area. Cost to construct the channel at October 2006 price levels is \$128,000,000. The United States Bureau of Reclamation estimates that following a flood severe enough to breach the spoil-bank levee separating the low-flow conveyance channel from the adjacent floodway, the low-flow conveyance channel would be obliterated and out of service for at least five years. As much as 455,000 acre-feet of water would be lost over such a five-year period, with an economic value of \$121,000,000. Loss of the channel would also have international significance, as the 1906 Treaty with Mexico requires the delivery of 60,000 acre-feet of water annually. Single occurrence damages from the one percent chance floods are \$264,000,000. Average annual damages without the project are \$12,996,000 and with the project are \$967,000. Average annual benefits are \$12,029,000, all flood control, based on October 1993 price levels. The project avoids long and short term impacts associated with the destruction or modification of wetlands; in fact, the project protects existing wetlands at Bosque del Apache National Wildlife Refuge. Replacement of the San Marcial railroad bridge in accordance with the United States Fish and Wildlife Service biological opinion will improve the endangered species habitat, sediment transport, water operations and interstate water deliveries.

The Budget includes funding for this project primarily to address a significant risk to human safety. The Corps made this determination based on many factors such as the likelihood and magnitude of the potential flooding, the number of people living in the flood plane, the likely warning time, the availability of evacuation routes, and site-specific engineering factors.

FISCAL YEAR 2007: Current year funds will be used to:

Continue the General Reevaluation Report	\$ 700,000
Total	\$ 700,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Division: South Pacific	Continue the General Reevaluation Report	\$ 700,000	
	District: Albuquerque		Rio Grande Floodway, San Acacia to
	5 February 2007		Bosque del Apache Unit, NM



Initiate design of San Marcial Railroad Bridge	100,000
Total	\$ 800,000

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, and the Water Resources Development Act of 1992, PL 102-580, Section 102(S), the non-Federal sponsor must comply with the requirements listed below.

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	\$ 710,000	
Pay 8.1 percent of the costs allocated to flood control to bring the total non-Federal share of flood control costs to 12.5 percent, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	8,190,000	\$226,000
Total Non-Federal Cost	\$ 8,900,000	\$226,000

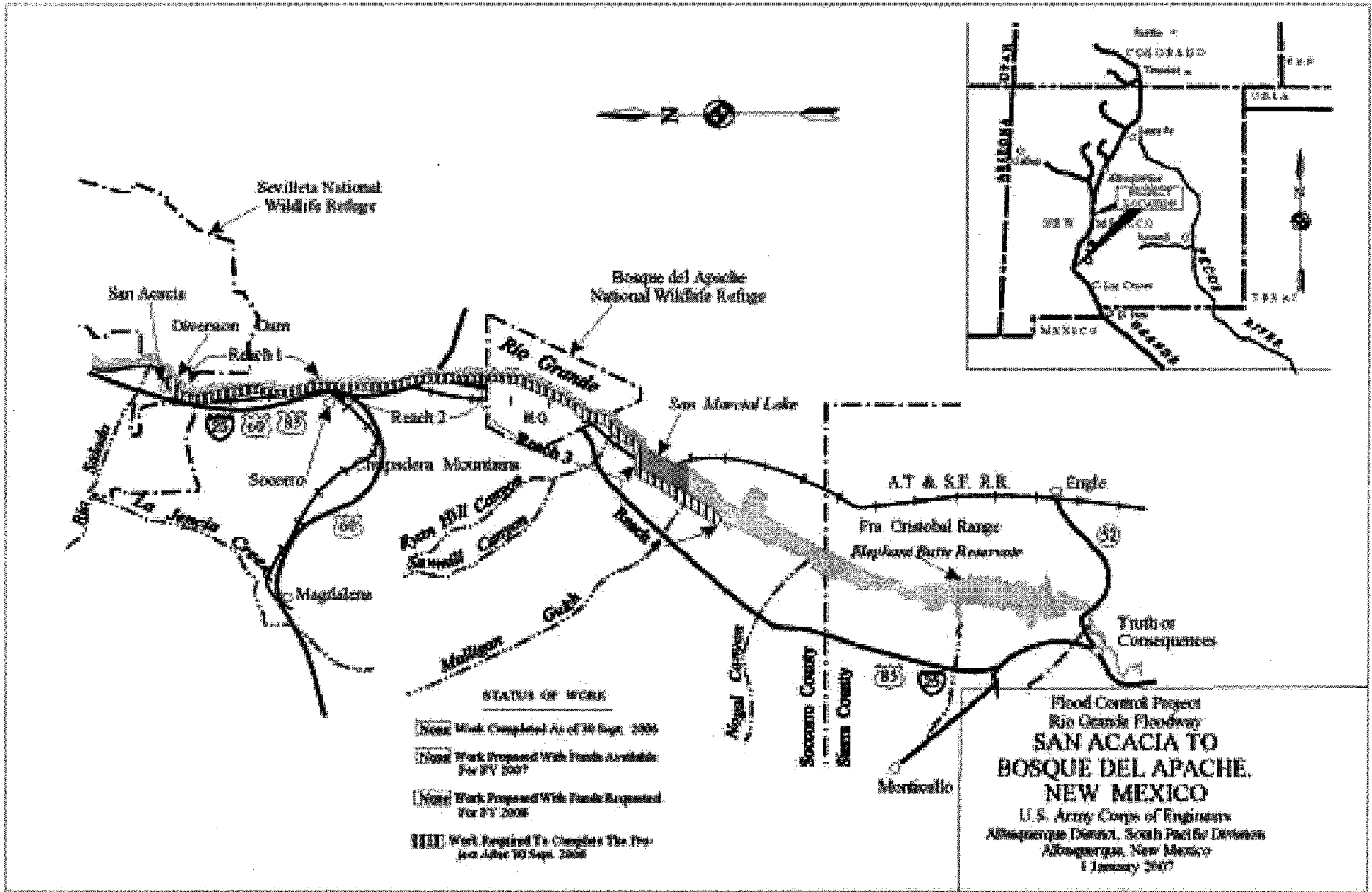
The non-Federal sponsor has also agreed to make all required payments concurrently with project construction.

STATUS OF LOCAL COOPERATION: The Middle Rio Grande Conservancy District supports the authorized levee project, as currently modified, to provide needed flood protection to the Middle Rio Grande Valley below San Acacia. By letter dated 28 July 1995, the New Mexico State Engineer indicated that funding for a portion of the non-Federal share of the project may be provided by the New Mexico Interstate Stream Commission from the Improvement of the Rio Grande Income Fund. The Project Cooperation Agreements for the project's recommended phases are scheduled for execution in September 2009. (see "Other Information").

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$62,300,000 is the same as the latest estimate (\$62,300,000) presented to Congress (FY 2007).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final Environmental Impact Statement was filed in February 1992. A supplemental Environmental Impact Statement will be filed with the Environmental Protection Agency in January 2009.

OTHER INFORMATION: Funds to initiate Preconstruction Engineering and Design were appropriated in Fiscal Year 1987, and funds to initiate construction were appropriated in Fiscal Year 1992. The cost of fish and wildlife mitigation is \$1,298,000 based on 1 October 2006 price levels. In November 2001, the Bureau of Reclamation confirmed that the low flow conveyance channel would remain in its current location and configuration within the project area. Therefore, the originally authorized extended levee plan is still justified and feasible. The final General Reevaluation Report (GRR) is scheduled for approval in January 2009. The Project Cooperation Agreement is scheduled for execution in September 2009. Continued funding is critical to insure completion of the GRR and initiation of construction efforts to relocate and/or raise the San Marcial bridge in accordance with the United States Fish and Wildlife Service's (USFWS) biological opinion. Federal agencies responsible for Middle Rio Grande water operations requested formal consultation with the USFWS, as required by Section 7 of the Endangered Species Act. The March 17, 2003 Biological Opinion is a programmatic biological opinion on Bureau of Reclamation's water and river maintenance operations, Army Corps of Engineers' flood control operations, and related non-federal actions on the Middle Rio Grande in New Mexico. The Reasonable and Prudent Alternative (RPA) concerning the San Marcial Railroad Bridge is Element U, page 98, of the Biological Opinion. The rationale of Element U is stated at the bottom of page 98: "The purpose...is to maintain or improve the quality and quantity of habitat available for the silvery minnow and flycatcher. These elements avoid the destruction or adverse modification of silvery minnow critical habitat by ensuring primary constituent elements are provided or restored. It is expected that by improving the habitat condition that reproduction, recruitment, and survival of the species will increase."



5 February 2007

APPROPRIATION TITLE: Construction - Local Protection (Flood Control)

PROJECT: Sacramento River Bank Protection Project, California (Continuing)

LOCATION: The project is located in north-central California, along the Sacramento River and its principal tributaries from Sacramento River RM 0.0 at Collinsville to Chico Landing at RM 194. It is within the limits of the existing Sacramento River Flood Control Project levees and includes Butte Basin, Cache Slough, and a portion of the Sacramento-San Joaquin Delta slough. The project meanders through eight counties including Tehama, Glenn, Butte, Colusa, Sutter, Yolo, Solano, and Sacramento.

DESCRIPTION: The project provides a long-range program of bank protection to protect the levees within the limits of the Sacramento River Flood Control Project from erosion. It prevents undermining of levee sections and includes fish and wildlife mitigation features. Some recreational facilities have been provided along the river.

AUTHORIZATION: Flood Control Act of 1960; River Basin Monetary Authorization Act of 1974; Further Continuing Appropriations Act of 1983 and Water Resources Development Act of 1986.

REMAINING BENEFIT-REMAINING COST RATIO: 12.6 to 1 (See OTHER INFORMATION.)

TOTAL BENEFIT-COST RATIO: 10.5 to 1 (See OTHER INFORMATION.)

INITIAL BENEFIT-COST RATIO: Not Reported

BASIS OF BENEFIT-COST RATIO: (See OTHER INFORMATION.)

SUMMARIZED FINANCIAL DATA

Separable Element 1 (Completed Pre-Separable Element Work-Contracts 1-37, 38A and 39)

Estimated Federal Cost \$54,205,000

Estimated Non-Federal Cost \$27,115,000

Cash Contribution \$12,025,000

Other Costs 15,090,000

Total Separable Element 1 \$81,320,000

Separable Element 2 (Completed Fish & Wildlife Mitigation)

Estimated Federal Cost \$ 1,336,000

Estimated Non-Federal Cost \$ 784,000

Cash Contribution \$ 84,000

Other Costs 700,000

Total Separable Element 2 \$ 2,120,000

Separable Element 3 (LCA 41)

Estimated Federal Cost \$ 8,619,000

Estimated Non-Federal Cost \$ 2,873,000

Cash Contribution \$ 1,857,000

Other Costs 1,016,000

Total Separable Element 3 \$11,492,000

STATUS  
(1 JAN 2007)

PERCENT  
COMPLETE

PHYSICAL  
COMPLETION  
SCHEDULE

Bank Protection 96 TBD  
Recreation 100 1/ TBD  
Entire Project 96 TBD

1/ 100% of identified recreation is complete.

SUMMARIZED FINANCIAL DATA (Continued)

Separable Element 4 (LCA 38B, 40, & 42)

Estimated Federal Cost		\$ 299,850,000
Estimated Non-Federal Cost		\$ 99,950,000
Cash Contribution	\$ 94,650,000	
Other Costs	5,300,000	

Total Separable Element 4 \$399,800,000

Separable Element 5 (Site 43)

Estimated Federal Cost		\$ 1,813,000
Estimated Non-Federal Cost		\$ 0
Cash Contribution	\$ 0	
Other Costs	0	

Total Separable Element 5 \$ 1,813,000

Project Summary

Estimated Federal Cost		\$365,823,000
Estimated Non-Federal Cost		\$130,722,000
Cash Contribution	\$108,616,000	
Other Costs	22,106,000	

Total Estimated Project Cost \$496,545,000

SUMMARIZED FINANCIAL DATA (Continued)

		ACCUM PCT OF EST FED COST	PHYSICAL DATA
Allocations to 30 September 2004	\$120,788,000		Bank Protection: 835,000 lineal feet
Allocation for FY 2005	3,979,000		First Phase – 430,000 lineal feet
Allocation for FY 2006	29,208,000		Second Phase– 405,000 lineal feet
Conference Allowance for FY 2007	10,960,000		
Allocation for FY 2007	10,960,000 *		
Allocations through FY 2007	164,935,000	45	
Allocation Requested for FY 2008	21,528,000	51	
Balance to Complete after FY 2008	179,360,000		

\* Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: The Sacramento River Flood Control Project consists of 977 miles of levees plus overflow weirs, pumping plants and bypass channels along the Sacramento River from RM 0 near Collinsville to RM 194 near Chico, including several sloughs and the lower reaches of major tributaries. The Sacramento River levee system was initiated as a purely local project and in many cases the levees were constructed close to the riverbanks without a protective berm. The levee system, which was adopted as the Sacramento River Flood Control Project in 1917, has been modified and expanded several times since that date but no major change in the basic levee alignment has been made since the original conception of the project. Bank protection is necessary to preserve the Sacramento River Flood Control Project and insure that it will continue to furnish the designed degree of protection. The levees are continuously threatened by erosion, and unless corrective measures are taken levee failures may occur with resultant catastrophic damage and possible loss of many lives. Flood events that occurred in February 1986 and January 1997 greatly emphasized these problems. Several levees located along the Sacramento River were subjected to an extensive amount of erosion due to the extremely high river flows. High flows in January and March 1995 caused flooding and erosion in the Butte Basin area along the Sacramento River, River Mile (RM) 188 at Glenn County Road 29. If levee repairs had not been made, additional flooding would have caused extensive loss of agricultural land and endangered residents in nearby communities of Butte City, Princeton and Colusa. In addition, during moderately high flows in February 1996, a 500 foot portion of berm on the American River failed, threatening the levee protecting the City of Sacramento. A contract was awarded in August 1996 to repair this section and provide bank protection for a total of 1,200 lineal feet. The 1997 flood event and the high flows experienced in 1998 again put additional stress on the levee system (approximately 1,100 river miles) within the Sacramento River Bank Protection Project. The sustained high water in January/February 2006 caused great concern and instigated an emergency declaration from the governor of California relative to levee repair. The area protected by the levees comprise over one million acres in which about 50 communities are located; value of improvements (October 2003 prices) to be protected is about \$38 billion and about 2.3 million people live within the flood plain. The levee system enables the use of the flood plain for the benefit of the state and nation. The extremely fertile flood plain lands produce about 6.6 percent of the total agricultural production of the state and over 88 percent of the State's rice production. The Sacramento River Bank Protection Project provides a long-range program of bank protection to protect the levees where serious erosion is occurring and to prevent erosion from undermining additional levee sections in the future. In addition to assuring urgently needed flood protection, the project provides recreation facilities consisting of boat-launching facilities, campgrounds, and picnic areas needed along the river to meet a rapidly increasing public demand. Since the initial bank protection contract was let in June 1963, about 801,000 lineal feet of bank protection has been provided. Approximately 34,000 lineal feet of bank protection remains to be placed on the second phase of this project.

The Budget includes funding for this project primarily to address a significant risk to human safety. The Corps made this determination based on many factors such as the likelihood and magnitude of the potential flooding, the number of people living in the flood plane, the likely warning time, the availability of evacuation routes, and site-specific engineering factors.

FISCAL YEAR 2007: Current year funds will be used to:

Design and Construct 1,200 lineal feet of critical erosion site	\$6,800,000
Design and Construction Associated Offsite Mitigation	2,500,000
Initiate NEPA/CEQA Environmental Programmatic Analysis	460,000
Construction Management	1,200,000
Total	\$10,960,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Design and Construct Bank Protection and Mitigate For Habitat loss for a 3,800 foot reach	\$ 19,100,000
Engineering and Design During Construction	1,091,000
Construction Management	1,337,000
Total	\$ 21,528,000



NON-FEDERAL COSTS: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below.

	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Requirements of Local Cooperation		
Provide lands, easements, rights of way, and borrow and excavated or dredged material disposal areas.	\$ 14,347,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	5,959,000	
Pay 15 percent of the costs allocated to flood control to bring the total non-Federal share of flood control costs to one-third for work initiated prior to 30 April 1986, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	12,025,000	\$ 809,000
Pay 4 percent of the total cost of separable element 2, fish and wildlife mitigation, to bring the total non-Federal share of costs of separable element 2 to 37 percent for work performed, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of this functional portion of the project.	84,000	
Pay 24 percent of the costs allocated to flood control to bring the total non-Federal share of flood control costs to 25 percent for work initiated after 30 April 1986, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	98,307,000	280,000
Total Non-Federal Costs	\$130,722,000	\$1,089,000

The non-Federal sponsor has also agreed to make all required payments concurrently with project construction.

STATUS OF LOCAL COOPERATION: Chapter 2188, Statutes of the State of California, approved by the Governor on 21 July 1961, established the State Reclamation Board as the agency to meet the requirements of local cooperation for the project. Assurances of local cooperation were accepted from the Board 5 February 1963. The Reclamation Board signed a Local Cooperation Agreement (LCA) satisfying the requirements of Section 221, Flood Control Act of 1970 (Public Law 91-611) for the remaining Second Phase work in May 1984. In accordance with provisions of the Water Resources Development Act of 1986 for separable project elements initiated after 30 April 1986, new LCAs were executed for separable element 41 on 15 August 1988 and for separable elements 38B, 40, and 42 on 7 December 1988. The LCA for the First Phase Mitigation was signed on 5 June 1990. The current non-Federal cost estimate of \$130,722,000 is an increase of \$54,722,000 from the estimate last presented to Congress (FY 2007). The local sponsor supports the increase and is financially positioned to provide their increased share of project costs.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$365,823,000 is an increase of \$166,823,000 from the latest estimate of \$199,000,000 presented to Congress (FY2007). The change includes the following items:

Design Changes	\$166,823,000
Total	\$166,823,000 2/

2/ Remaining authorized lineal feet have just been definitized.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: A final Environmental Impact Statement (EIS) was filed on 15 June 1973. A SEIS for the Second Phase was filed in February 1989. A final EIS for additional work in Butte Basin, and an update submitted as Supplement 4, were signed in June 1988. An Environmental Assessment/Site Specific Report (EA/SSR) was prepared for Contract 42A and a Finding of No Significant Impacts (FONSI) was signed on 15 February 1994. An EA/SSR was prepared for Contracts Lower American River site 3 and 40D and FONSI were signed 2 July 1996 and 3 September 1997, respectively. A Supplemental Design Memorandum No. 8 was prepared for sites along the lower American River and the SEIS was completed in April 1998. Currently, an EA/SSR to meet both Federal and State of California requirements is approved prior to construction of each bank protection contract. A General Reevaluation Report (GRR) will be required to address remaining sites.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1962, and for construction in FY 1963. Construction of First Phase was completed in November 1974. Authority to proceed with additional bank protection works, Second Phase, was provided by Section 202, River Basin Monetary Authorization Act of 1974, Public Law 93-251. The Further Continuing Appropriations Act of 1983 extended the limits of the project to include bank protection along the Sacramento River to the upstream ends of the project levees to Chico Landing (Butte Basin area). The Water Resources Development Act of 1986 modified the First Phase of the project to include acquisition of lands for establishment and maintenance of wildlife habitat at a total cost of \$1,410,000 (\$2,120,000 inflated through construction). The last parcel was acquired in Fiscal Year 1997. Re-vegetation has been highly successful and is serving as a model for re-vegetation efforts by others. Monitoring of fish and wildlife habitat and engineering features continues at each site.

The U.S. Fish and Wildlife Service, by letter dated November 7, 1985, issued a Biological Opinion stating that the bank protection work along the Sacramento River from Chico Landing to Red Bluff and in the Butte Basin area would endanger the threatened valley elderberry longhorn beetle. The Service issued a revised opinion on 19 May 1987 that permitted limited rock revetment bank protection to be constructed in the Butte Basin. The potential impact to winter run salmon has also been a significant concern as the winter run salmon have experienced an alarming decline since 1969. National Marine Fisheries Service (NMFS) listed

OTHER INFORMATION (continued)

winter run salmon as a threatened species in November 1990. The winter run salmon biological data report was completed January 1991. NMFS Biological Opinion dated 28 October 1991 for the winter run salmon was non-jeopardy but lists recommended conservation measures. Winter run salmon along with bank swallows and Swainson's Hawk are also State listed species and a Biological Opinion was received from California Department of Fish and Game on 18 November 1991 which also recommends conservation measures.

On August 23, 2001, the U.S. Fish and Wildlife Service issued its final Biological Opinion on the Sacramento River Bank Protection Project (SRBPP). The National Marine Fisheries Service released their opinion on September 27, 2001. Both opinions were virtually identical in terms of identifying the SRBPP's effects as jeopardizing the existence of five fish species (Delta smelt, Sacramento splittail, winter-run Chinook salmon, spring-run Chinook salmon, and Central Valley steelhead) listed under the Endangered Species Act in the Sacramento River. With recent collaborative efforts, most repair sites have been self-mitigating.

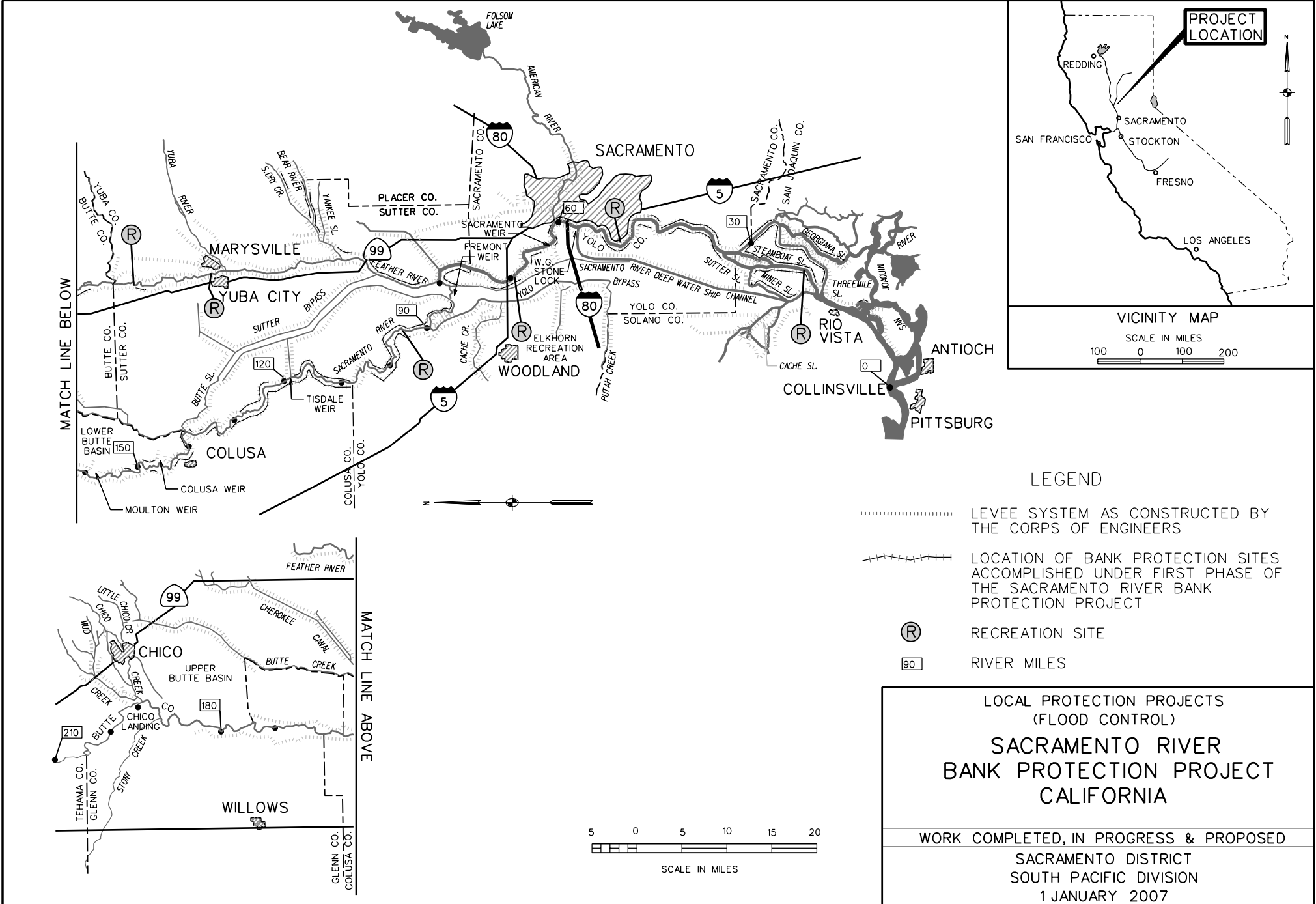
After the February 1986 flood, the Sacramento River System experienced below normal precipitation and flood flows. This led to a lower rate of erosion and a lowered need for expedited bank protection work. However, the storms of 1995 and 1997, plus the sustained high water in 2006 have caused substantial erosion damage and the urgency for bank protection is vital.

Several sites along the Lower American River within the confines of the Sacramento River Bank Protection Project require bank protection to avoid undermining levees and flood protection in the Sacramento Metropolitan Area. Repair of these sites is the basis for the pre-project condition of the American River Investigation. The Corps emergency repairs scheduled for summer FY2006, along with the State's effort to repair critical sites, will reduce the critical list of emergency locations by approximately 30 sites. However, the annual inspection performed in July 2006 has identified approximately 25 new critical erosion sites on the main stem of the Sacramento River. Of these, 14 critical erosion sites along 10,000 lineal feet of levee are being repaired in FY 2007 with the majority of funds provided by the State of California.

The Corps and the non-Federal sponsor have recently executed an amendment to the local cost share agreement allowing the non-Federal sponsor to provide advance funding, so that work on the emergency sites may proceed unimpeded.

The Flood Control Act of 1960 included no quantitative language concerning the benefits or costs but authorized the rehabilitation of 430,000 lineal feet of levee. In 1974 language was added to increase the lineal feet by an additional 405,000 feet for a total of 835,000 lineal feet. The total base project cost is computed based on the current estimated total project cost expended to date, the remaining costs to date, an assumed spending stream throughout the 42 years of the project life, discounted to 1963 when the first appropriation was provided. Due to the language in the initial authorization stating that the benefits obviously exceeded the costs, the annual benefits are not available as they were absent from the original authorization and an economic reanalysis has never been performed. Remaining project cost is based on the current estimate of completing the last 25,000 lineal feet. The RBRCR of 12.6 was based on a sample of levee repairs currently studied on the Sacramento main stem. This is the lowest benefit value included in the analytical base and is considered a conservative estimate. The annual project benefits for this project are based on a sample of the on-going PL 84-99 economic analysis of the reconstruction efforts of levees on the main stem of the Sacramento River. The sunk benefits are assumed to be proportional to the number of lineal feet constructed under this authorization.

The fish and wildlife mitigation cost is estimated at \$31 million.



**COMPLETED WORK**

**COMPLETED WORK (Cont.)**

**WORK PROPOSED WITH FY07 FUNDS**

FIRST PHASE, BANK PROTECTION:  
CONTRACTS 1 THRU 26 (430,000 LF)

SECOND PHASE PART II, BANK PROTECTION (CONT.):  
SEPARABLE ELEMENT 42 (17,362 LF)

SAC RIVER MILE: 16.9  
33.0  
33.3  
43.7  
44.7  
47.0  
47.9  
48.2  
62.5  
68.9  
78.0

SECOND PHASE PART I, BANK PROTECTION:  
CONTRACTS 27 THRU 36 (182,000 LF)

42A (RM 60-145)  
42A-M (RM 60-145)  
42A-M1 (RM 60-145)  
42C (RM 90.4 & 90.9) FISH CURT.  
42C-M (RM 90.4 & 90.9) FISH CURT.  
42D (RD 108-COLUSA BASIN)  
42D-M (RD 108-COLUSA BASIN)  
LAR 1A1 (SITE 3)  
LAR 1A2 (RM 4.4, SITE 3, RIVER PARK)  
LAR 1A2-M (RM 4.4, SITE 3, RIVER PARK)  
LAR 1A3-M (RM 4.4, SITE 3, RIVER PARK)  
LAR 1B (RM 2-9, SITES 1, 2 & 4)  
LAR 1B-M (RM 2-9, SITES 1, 2 & 4)  
LAR 2 (SITE 5, PHASE 1)  
LAR 2 (SITE 5, PHASE 2)  
LAR 2-M (SITE 5, PHASE 3)

STEAMBOAT SLOUGH RM 19.0  
19.4  
22.7

SECOND PHASE PART II, BANK PROTECTION:  
PRE-SEPARABLE ELEMENT (46,744 LF)  
37 (RM 0-62)  
38A (RM 60-145)  
39 (RM 177-194)

SEPARABLE ELEMENT 38B (14,436 LF)  
38B (RM 60-120)

SEPARABLE ELEMENT 40 (40,794 LF)  
EMERGENCY COUNTY ROAD 29  
(RM 186-188)  
40A (RM 132-180)  
40B-1 (RM 187-192)  
40B-M (RM 145-194)  
40C (RM 15-25)  
STEAMBOAT, MINER & SUTTER SL.  
40C-M (RM 15-25)  
40D (RM 16, 1R) STEAMBOAT SL.  
40D-M (RM SL16.1)  
40E (RM 149)

**WORK PROPOSED WITH REMAINING FUNDS**

7,400 LINEAR FEET,  
RM TO BE DETERMINED

SEPARABLE ELEMENT 41 (29,475 LF)  
41A (RM 0-60)  
41A-M1 (RM 20-60)  
41A-M2 (RM 20-60)  
41A-M3 (RM 20-60)  
41A-M4 (RM 20-60)  
41A-M5 (RM 20-60)  
41B (FEATHER RIVER)  
41B-M (FEATHER RIVER)

WORK STATUS

COMPLETED

WORK COMPLETED AS OF  
30 SEPTEMBER 2006

07

WORK PROPOSED WITH FUNDS  
AVAILABLE FOR FY 2007

08

WORK PROPOSED WITH FUNDS  
REQUESTED FOR FY 2008

REMAINING

WORK REQUIRED TO COMPLETE  
THE PROJECT AFTER FY 2008

LOCAL PROTECTION PROJECTS  
(FLOOD CONTROL)  
  
SACRAMENTO RIVER  
BANK PROTECTION PROJECT  
CALIFORNIA

WORK COMPLETED, IN PROGRESS & PROPOSED

SACRAMENTO DISTRICT  
SOUTH PACIFIC DIVISION  
1 JANUARY 2007

APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Santa Ana River Mainstem, California (Continuing)

LOCATION: The project is located along a 75-mile reach of the Santa Ana River in Orange, Riverside, and San Bernardino Counties, southeast and adjacent to metropolitan Los Angeles, California.

DESCRIPTION: The plan of improvement provides for construction of the Seven Oaks Dam about 35 miles upstream of the existing Prado Dam, with a gross reservoir storage of 145,600 acre feet; flood plain management of the flood overflow area on the Santa Ana River between Seven Oaks Dam and the existing Prado Reservoir; enlargement of Prado Dam to increase the reservoir storage capacity from 217,000 acre-feet to 362,000 acre-feet; construction of 3.3 miles of channel modifications along Oak Street Drain in Corona; enlargement of the existing 2.4 miles of Mill Creek levee; construction of a detention basin and 2.0 miles of channel modifications along the Santiago Creek; and various means of flood control, including flood plain management, levees, and vertical walled concrete channels along the 30.5 miles of the Santa Ana River from Prado Dam to the Pacific Ocean. In addition, the plan includes recreational development and purchase of lands for mitigation and preservation of endangered species. A project for San Timoteo Creek was added to the Santa Ana River Mainstem project by the Energy and Water Development Appropriation Act of 1988. A special report was approved in May 1994; engineering and design was initiated in Fiscal Year 1991 with funds appropriated for that purpose and was completed in June 1994. Construction was initiated in Fiscal Year 1994. The project was modified by the Water Resources Development Act of 1990, which authorized the Secretary to develop recreational trails and facilities on lands between Seven Oaks Dam and Prado Dam, including flood plain management areas. These recreational features are not included in the current estimate pending development of plans and determination of costs.

AUTHORIZATION: Water Resources Development Act of 1986, Energy and Water Development Appropriation Act, 1988, Water Resources Development Act of 1990, and Water Resources Development Act of 1996.

REMAINING BENEFIT-REMAINING COST RATIO: 4.2 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 1.7 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 1.3 to 1 at 8 7/8 percent (FY 1990)

BASIS OF BENEFIT-COST RATIO: The benefit-cost ratio is based on the Phase II General Design Memorandum dated August 1988 at 1987 price levels.

SUMMARIZED FINANCIAL DATA			ACCUM PCT OF EST FED COST	STATUS (1 JAN 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost		\$ 1,166,000,000		Seven Oaks Dam	100	August 1999
Programmed Construction	\$1,165,000,000			Prado Dam	40	December 2013
Unprogrammed Construction	1,000,000			Santiago Creek	0	December 2013
				Mill Creek	100	March 1992
Estimated Non-Federal Cost		\$ 599,000,000		Oak Street Drain	100	September 1994
Programmed Construction	\$ 598,000,000			Lower Santa Ana Rch 9	33	December 2009
Cash Contributions	94,000,000			Lower Santa Ana Rch 1-8,10	94	December 2008
Other Costs	576,000,000			Marsh	100	March 1991
Reimbursements	(72,000,000)			San Timoteo	97	December 2012
Estimated Non-Federal Cost				Entire Project	90	December 2013
Unprogrammed Construction	\$ 1,000,000					
Cash Contributions	1,000,000					
Other Costs	0					
Total Estimated Programmed Construction Costs		\$ 1,763,000,000				
Total Estimated Unprogrammed Construction Costs		\$ 2,000,000				
Total Estimated Project Cost		\$ 1,765,000,000 <u>1/</u>				
Allocations to 30 September 2004		\$ 737,653,000				
Allocations for FY2005		22,156,000				
Allocations for FY2006		57,103,000				
Conference Allowance for FY 2007		N/A				
Allocation for FY 2007		54,080,000				
Allocations Through FY 2007		870,992,000	75			
Allocation Requested for FY 2008		17,000,000	76			
Programmed Balance to Complete after FY 2008		278,008,000				
Unprogrammed Balance to complete after FY 2008		1,000,000				

1/ Reflects \$39,500,000 to be reimbursed to judgment fund for Seven Oaks claim

PHYSICAL DATA:

SEVEN OAKS DAM:

Dam: Type - Impervious core  
Height - 550 feet  
Length - Crest Length 2,980 feet  
Outlet Works: Gated conduit, 8,000 cfs maximum discharge  
Basin Capacity: 145,600 acre-feet  
Spillway: Type - Detached overflow, 500 ft wide, unlined  
Embankment: Earth and Rock fill  
Lands & Damages: Acres - 2,736 existing streambed and undeveloped (mountainous)

MILL CREEK

Levee repair: Type - Grouted riprap  
Height - 10 feet maximum  
Length - 12,500 feet (2.4 miles) of existing  
13,600 feet (2.6 miles)  
Lands & Damages: Acres – 1661 grazing, wildlife  
Floodwall (Top of levee): Type – Concrete  
Height - 7.5 feet maximum  
Length - 12,600 feet (2.4 miles)

OAK STREET DRAIN:

Channel: Rectangular concrete 3.0 mile  
Trapezoidal riprap 0.3 miles  
Lands & Damages: 34 acres for rights-of-way

SANTIAGO CREEK:

Channel: Rectangular concrete 500 feet  
Trapezoidal riprap 2.0 miles  
Reservoir: Buttressed  
Basin Capacity: Flood control 4,620 acre-feet (el. 274 to 298)  
Lands and Damages: 281.5 acres, reservoir and channel

PRADO DAM:

Dam: Type - Impervious core  
Height - 134 feet  
Length - 3,050 crest length  
Outlet Works: Gated conduits  
30,000 cfs maximum discharge  
Embankment: Rolled earth fill  
Spillway: Type - Detached, overflow concrete, 1,000 feet wide,  
578,000 cfs maximum design discharge.  
Basin Capacity: 362,000 acre-feet

LOWER SANTA ANA RIVER:

Channel: - 200-450 feet wide, 34 bridges replaced or modified  
- 5.0 miles trapezoidal concrete  
- 2.4 miles rectangular concrete  
- 15.5 miles trapezoidal grouted riprap  
- 0.8 miles rectangular concrete/soft bottom

Lands & Damages: Acres - 2,429.5 for channel (7.4 miles floodway)  
Mitigation Lands: Acres - 92-marsh restoration

RECREATION FACILITIES:

LOWER SANTA ANA RIVER: Bicycle/equestrian trail - 32 miles

SANTIAGO CREEK: Trails - Bicycle and equestrian (1 mile)  
Rest stop - Concrete bicycle wheel stops

SEVEN OAKS TO PRADO DAM: To be developed

SAN TIMOTEO CREEK – To be developed

SAN TIMOTEO CREEK:

Channel: 5.4 miles trapezoidal concrete  
Basins: 18 in-channel and transition chute  
Lands & Damages: 60.3 acres for rights-of-way



JUSTIFICATION: Construction of this project will primarily provide protection to lands and improvements within Orange County downstream of Prado Reservoir. A severe flood threat exists in this area, which could cause damages in excess of \$15 billion and could endanger and disrupt the lives of over three million people living or working in the floodplain. Damages upstream of Prado Reservoir could exceed \$450 million. The overflow area comprises 160 square miles of primarily urban development in 15 cities including San Bernardino, Riverside, Anaheim, Orange, Santa Ana, Fountain Valley, Costa Mesa, Huntington and Newport Beach. The greatest potential damage area is the Orange County floodplain below Prado Dam. The flood of 1938 is the largest that has been recorded since accurate stream gages were placed in the basin. With a peak flow at Riverside Narrows of approximately 100,000 cubic feet per second, the flood covered thousands of acres of then predominantly rural Orange County. Although the area was largely agricultural at the time, the flood caused \$4 million in damages (\$129.6 million at 2006 prices). Following this storm, Prado Dam was constructed at the head of the Santa Ana Canyon, providing effective control of floods for much of the downstream basin. In 1969, when communities upstream of Prado Dam suffered \$85 million in damages, Prado Dam prevented an estimated \$525 million in damages to downstream communities. With current development, damages for a similar flood would be approximately \$4 billion, at 2006 prices. Without the project, the level of protection downstream of Prado, primarily in Orange County, is approximately 70 years. With the project, the level of protection downstream of Prado would be increased to 190 years.

The Budget includes funding for this project primarily to address a significant risk to human safety. The Corps made this determination based on many factors such as the likelihood and magnitude of the potential flooding, the number of people living in the flood plane, the likely warning time, the availability of evacuation routes, and site-specific engineering factors.

Average annual benefits are as follows:

Annual Benefits	Amount
Flood Damage Prevention	\$ 135,978,000
Recreation	282,000
 Total	 \$ 136,260,000

FISCAL YEAR 2007: Funds are be used to continue construction for the Prado Dam Embankment and Outlet. Initiate construction for Phase II Dikes, continue design for Lower Santa Ana Reach 9 Phase II, complete Lower Santa Ana Landscaping phase 2 and 3 (West side) and Reach 7, continue Multi-Species Habitat Management Plan for Seven Oaks Dam. Complete Seven Oaks Dam tunnel repairs.

FISCAL YEAR 2008: The requested amount will be used to continue construction for the Prado Dam Embankment and Outlet works.

Embankment & Outlet contract	14,000,000
Planning, Engineering & Design	1,000,000
Construction Management	2,000,000
 Total	 \$17,000,000

NON-FEDERAL COSTS: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsors must comply with the following requirements listed below.

Requirements of Local Cooperation and Project Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation and Replacement Costs
Santa Ana River Mainstem: Provide lands, easements, rights-of-way, and borrow, excavated or dredged material disposal areas.	\$ 167,600,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	65,000,000	
Pay 5 percent cash of the costs allocated to flood control to bring the total non-Federal share of flood control costs to 25 percent, and bear all cost of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	58,000,000	\$2,194,000
Pay one-half of the separable costs allocated to recreation and bear all costs of operation, maintenance, repair, rehabilitation and replacement of recreation facilities.	1,000,000	6,000
Reimburse 100 percent of the Federal funds, loaned to the sponsor, within a period of 30 years following the completion of the project, in accordance with section 103 (k) of the Water Resources Development Act of 1986.	6,000,000	
Prado Dam: Provide lands, easements, rights-of-way, and borrow, excavated or dredged material disposal areas.	325,000,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	19,000,000	
Pay 5 percent cash of the costs allocated to flood control to bring the total non-Federal Share of flood control costs to 50 percent, and bear all costs of operation, maintenance, Repair, rehabilitation and replacement of flood control facilities.	30,000,000	200,000
Estimated reimbursement to local sponsor for LERRDS in excess of 45 percent of total project costs for flood control, subject to availability of funds.	(72,600,000)	

Total Non-Federal Costs

\$ 599,000,000

\$ 2,400,000

The non-Federal sponsors have also agreed to make all required payments concurrently with project construction.

STATUS OF LOCAL COOPERATION: Orange, San Bernardino, and Riverside Counties are the local sponsors. In accordance with Memorandum of Agreement executed on 6 December 1987, Orange County contributed \$3 million to assure the project design schedule was maintained. Orange County has received credit for those funds towards their share of the project costs during construction. In addition, Orange County worked with California Department of Transportation (CALTRANS) to relocate some key bridges in Fiscal Year 1988, in advance of project construction. On 14 December 1989, the Local Cooperation Agreement was executed in compliance with the requirements of the Water Resources Development Act of 1986. A supplemental Local Cooperation Agreement was executed on 1 July 1994 for San Timoteo Creek. A draft Local Cost Sharing Agreement for recreation on Santiago Creek has been reviewed and approved by the local sponsor, Orange County, and the Orange County Department of Harbors, Beaches and Parks. Schedules for executing a Project Cooperation Agreement and programming this work are being determined. On 30 June 1997, the Assistant Secretary of the Army (Civil Works) approved Prado Dam as a separable element.

On 30 June 1997, direction was given by the Assistant Secretary of the Army (Civil Works) to proceed in accordance with Section 309 (Water Resources Development Act of 1996) to modify the existing Local Cost Sharing Agreement to reflect this determination and the non-Federal cost-sharing be modified in accordance with section 103(a) (3) of Water Resources Development Act of 1996. A Project Cooperation Agreement for Prado Dam was executed in February 2003.

The current non-Federal cost estimate of \$599,000,000, which includes a cash contribution of \$94,000,000, is an increase of \$171,000,000 from the non-Federal cost estimate of \$428,000,000 noted in the current amended Local Cooperation Agreement dated February 2003, which included a cash contribution of \$59,306,000. Analysis of the non-Federal sponsors' financial capability to participate in the project affirms that Riverside and San Bernardino Counties still have a reasonable and implementable plan for meeting their financial commitments. On 30 June 1997, the Assistant Secretary of the Army (Civil Works) approved Prado Dam as a separable element. On 30 June 1997, direction was given by the Assistant Secretary of the Army (Civil Works) to proceed in accordance with Section 309 (Water Resources Development Act of 1996) to modify the existing Local Cost Sharing Agreement to reflect this determination and the non-Federal cost-sharing be modified in accordance with section 103(a) (3) of Water Resources Development Act of 1996. Construction of this project will primarily provide protection to lands and improvements within Orange County downstream of Prado Reservoir.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$1,166,000,000 is an increase of \$34,100,000 from the latest estimate (\$1,131,900,000) presented to Congress (FY 2007). This change includes the following items.

Item	Amount
Post Contract Award and other estimating adjustments (including contingency adjustments)	\$ 6,000,000
Price Escalation on Real Estate	\$28,100,000
Total	\$ 34,100,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final Environmental Impact Statement was filed with the Environmental Protection Agency in June 1989. The Records of Decision (ROD) for Prado Dam and San Timoteo Creek Reach 3B were executed in January 2002.

OTHER INFORMATION: Funds to initiate preconstruction engineering and design were appropriated in FY 1979, and funds to initiate construction were appropriated in FY 1990.

Through negotiations with Fish and Wildlife Service on Section 7 consultations for endangered species (Eriastrum below Seven Oaks and Least Bell's Vireo at Prado Dam), agreement was reached on the number of acres for mitigation. The final biological opinion necessary for formal conclusion of the consultation was received from Fish and Wildlife Service 22 June 1989.

Coordination with the U.S. Fish and Wildlife Service and the California Department of Fish and Game was initiated early in the planning of alternatives and completed 30 March 1989, which produced a Fish and Wildlife Service Coordination Act Report that was included in the Environmental Impact Statement. These agencies had a role in the determination of project associated impacts as well as mitigation needs and opportunities. Estimated fish and wildlife mitigation costs for Seven Oaks Dam are \$1,362,000 (\$1,266,000 Federal and \$96,000 non-Federal), for San Timoteo are \$2,743,000 (\$2,725,000 Federal and \$18,000 non-Federal) and for Lower Santa Ana are \$6,713,000 (\$6,537,000 Federal and \$176,000 non-Federal.)

An agreement was signed on 21 September 1989, in accordance with Section 215 of the Flood Control Act of 1968, to permit Orange County to undertake early partial construction of the Santiago Creek improvements in conjunction with other improvements they are planning for water supply, and to be credited for applicable project construction.

Section 104 of the Energy and Water Development Appropriation Act of 1988 authorized "...San Timoteo Creek in the vicinity of Loma Linda for construction as part of the Santa Ana River Mainstem including Santiago Creek Project... the benefits and costs of the San Timoteo project shall be included together with the benefits and costs of the Santa Ana Mainstem including Santiago Creek. The total costs for the Santa Ana Mainstem, including Santiago Creek, is to be raised by \$25,000,000." A special report was approved in May 1994; engineering and design was initiated in Fiscal Year 1991 with funds appropriated for that purpose. Construction was initiated in August 1994 with funds specifically identified in Act Language through 2006 for a total of \$78,400,000.

As a result of local sponsor activities to develop a more environmentally sensitive design for Reach 3, such as a soft-bottom channel, the remainder of the project has been redesigned as Reach 3A (extending to just upstream of Barton Road) and Reach 3B (the remainder of the channel and the in-channel debris control structures). The non-Federal Sponsor has agreed to continue with Reach 3A as per the original design. The Corps with the local Sponsor developed an alternative plan for Reach 3B. Construction of the alternative plan for Reach 3B has been completed.

Section 103 (k) of Water Resources Development Act of 1986, authorized reimbursement with interest over time by the non-Federal sponsor over a period of not more than thirty years from the date of completion of the project. A supplemental local cooperation agreement concerning the San Timoteo Creek feature was approved in April 2001 and a total of \$6,000,000 has been loaned to date.

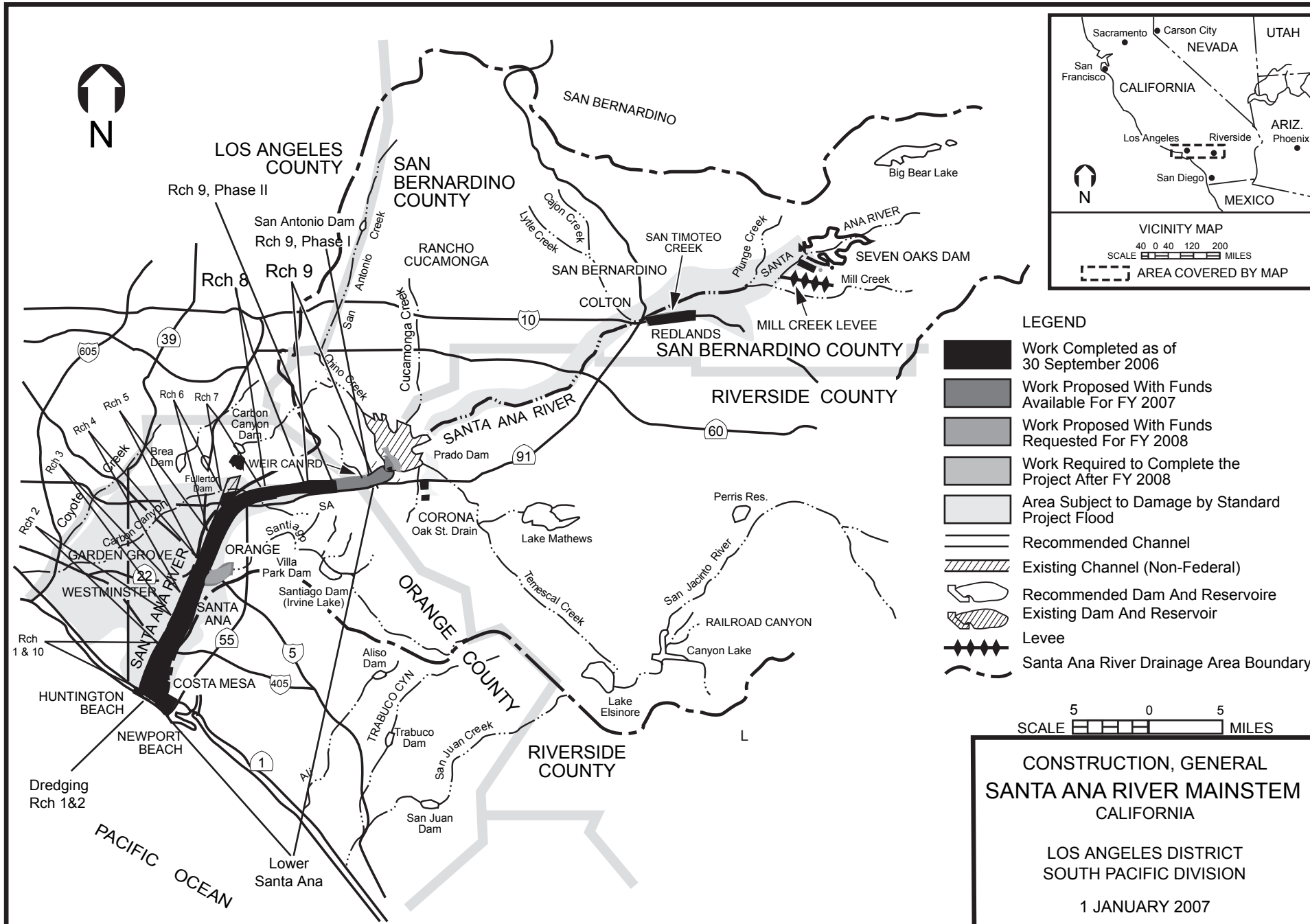
The project was modified by the Water Resources Development Act of 1990, which authorized the Secretary to develop recreational trails and facilities on lands between Seven Oaks Dam and Prado Dam, including flood plain management areas. These features are not included in the current estimate pending development of plans and determination of costs.

The project was modified by the Water Resources Development Act of 1996, which authorized the Secretary in coordination with the State of California, to provide technical assistance to Orange County, California, in developing appropriate public safety and access improvements associated with a portion of California State Route 71, which has been relocated for the Prado Dam project.

OTHER INFORMATION (Continued)

Total Lands, Easements, Rights of Ways, Relocations and Disposals (LERRD) for the Prado Dam project being estimated above 45 percent of the total project cost for flood control. Upon completion of the project and final accounting, the government, subject to availability of funds, shall reimburse the Non-Federal sponsor for any such value in excess of 45 percent of total project costs to bring the ultimate cost sharing to 50 percent Federal and 50 percent Non-Federal for the Prado Dam Project.

The full operation of Prado Dam at the designed release flow of 30,000 cubic feet per second will be contingent upon completing the relocation of the Santa Ana River Interceptor Line (SARI) and the lower river channel. A Decision Document is currently being prepared to include the SARI line as part of the authorized Santa Ana River Mainstem Project. If approved, the total Santa Ana River Mainstem Project cost estimate would be increased by approximately \$100,000,000 and place the project cost estimate above the current 902 maximum cost authority of the project.



APPROPRIATION TITLE: General - Local Protection (Flood Control)

PROJECT: South Sacramento County Streams, California (Continuing)

LOCATION: The South Sacramento County Streams drainage basin lies south and east of the city of Sacramento. Most of the basin is situated in the Sacramento Valley. The eastern-most parts of the basin are in the lower foothills of the Sierra Nevada. A portion of the basin lies within the Sacramento city limits, south of the city center.

DESCRIPTION: The selected plan would include the following principal flood control features: raising and extending the ring levee around the Sacramento Regional Water Treatment Plant (SRWTP); raising the Beach Stone Lakes and Morrison Creek levees; installing floodwalls (using sheet pile) on Morrison Creek, Elder Creek, Florin Creek and Unionhouse Creek, and retrofitting bridges to lower risk of failure due to flooding. Recreation features include a bicycle and pedestrian trail. Restoration of ecosystem at five sites would increase water quality to open water environments and enhance and expand wetlands, riparian vegetation, grasslands, and woodlands.

AUTHORIZATION: Water Resources Development Act of 1999

REMAINING BENEFIT-REMAINING COST RATIO: 3.95 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 3.4 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 3.9 to 1 at 6 5/8 percent (FY2002)

BASIS OF BENEFIT-COST RATIO: Benefits are from the latest available evaluation contained in the limited Reevaluation Report dated December 2004 (October 2003 price level)

SUMMARIZED FINANCIAL DATA		STATUS (1 JAN 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$59,500,000	Entire Project	20	TBD
Estimated Non-Federal Cost	\$32,500,000			
Cash Contribution	\$19,027,000			
Other Costs	6,280,000			
Section 104 Credit	7,193,000			
Total Estimated Project Cost	\$92,00,000			

Division: South Pacific

District: Sacramento  
5 February 2007

South Sacramento County  
Streams, California

SUMMARIZED FINANCIAL DATA (Continued)

		ACCUM PCT OF EST FED COST	PHYSICAL DATA
Allocations to 30 September 2004	\$ 4,283,800		
Allocations for FY 2005	2,999,000		
Allocations for FY 2006	10,812,000		Beach Stone Lakes
Conference Allowance for FY 2007	7,313,000		Floodwalls: .4 mile
Allocation for FY 2007	7,313,000 *		Levee Raising: 4.0 miles
Allocations through FY 2007	25,407,800	43	New Levee: 1.3 miles
			Levee improvement: 2.0 miles
Allocation Requested for FY 2008	8,000,000	56	Morrison Creek
Programmed Balance to Complete after FY 2008	\$ 26,092,200		Levee raising: .6 miles
			Levee improvement: 3.8 miles
			Floodwalls: 3.8 miles
			Florin Creek
			Floodwalls: 3.8 miles
			Elder Creek
			Levee improvement: 1.0 miles
			Floodwalls: 2.6 miles
			Unionhouse Creek
			Levee improvement: .9 miles
			Floodwalls: 2.0 miles
			Bridge Retrofits
			Ecosystem Restoration: 266 acres of emergent wetlands, riparian woodland, oak savannah woodland, and perennial grasslands.
			Recreation features: 4.5 mile paved bicycle and pedestrian trail with signs, fencing, and benches.

\* Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: Significant portions of the area were flooded in 1952, 1955, 1962, 1963, 1967, 1969, 1973, 1982, 1986, 1995, and 1997. In January 1995, the most intense rainfall recorded in the watershed resulted in record flows on Morrison Creek, resulting in flows near or exceeding the 1 in 100 annual event. Levee failure along Morrison, Unionhouse, Elder, and Florin Creeks and the SRWTP and Beach Stone Lakes levees could result in flooding of more than 14,000 acres. Approximately 41,000 structures are within the 500-year floodplain with an estimated value of \$5.6 billion. Significant development has occurred in the upper basin,



JUSTIFICATION (Continued)

in the Elk Grove area, which is increasing the runoff and potential for flooding. The population of the area is over 100,000 and flooding could result in loss of lives, mainly by drowning from rapid inundation in some areas of the flood plain. Once the floodwaters recede, there would be other impacts on public health and safety. The levees along Morrison Creek and tributaries provide less than a 100-year level of flood protection. The selected plan, known as the Consistent High Protection Plan, would provide a high level of protection (1 in 500 annual event) to all index areas, including Morrison, Elder, Florin and Unionhouse Creeks and to the Beach Stone Lakes and SRWTP levees. A 1 in 100 annual event would result in nearly \$715 million in damages (existing conditions) and more than \$2 billion in damages for a 1 in 500 annual event.

The Budget includes funding for this project primarily to address a significant risk to human safety. The Corps made this determination based on many factors such as the likelihood and magnitude of the potential flooding, the number of people living in the flood plane, the likely warning time, the availability of evacuation routes, and site-specific engineering factors.

The average annual benefits at October 2003 price levels are as follows:

Annual Benefits	Amount
Flood Control	\$23,665,000
Recreation	141,000
Environmental Restoration	0 2/
Total	\$23,806,000

2/ Ecosystem restoration benefits are not measured in dollars.

FISCAL YEAR 2007: Current year funds will be used to:

Initiate Design of Phase II	\$ 1,000,000
Continue construction contract IB	5,563,000
Engineering and Design During Construction	600,000
Construction Management	150,000
Total	\$7,313,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Award Construction Contract 2A	\$ 6,800,000
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Engineering and Design During Construction	700,000
Construction Management	500,000

Total	\$8,000,000
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NON-FEDERAL COSTS: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, as amended by Section 202(a) of the Water Resources Development Act of 1996, the non-Federal sponsor must comply with the requirements listed below.

	Payments During Construction and Reimbursements	Annual Operation Maintenance, Repair, Rehabilitation, and Replacement Costs
Requirements of Local Cooperation		
Provide lands, easements, rights of way, and borrow and excavated or dredged material disposal areas.	\$ 4,279,000	\$
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	1,011,000	
Receive credit for prior work accomplished IAW section 104 of WRDAS 86	7,193,000	
Pay 21 percent of the costs allocated to flood control and environmental restoration to bring the total non-Federal share of flood control and environmental restoration costs to 35% and bear all costs of operation, maintenance, repair, rehabilitation, and replacement of flood control and environmental restoration facilities.	19,234,000	402,000
Pay one-half of the separable costs allocated to recreation and bear all costs of operation, maintenance, repair, rehabilitation and replacement of recreation facilities.	783,000	41,000

Total Non-Federal Costs

\$ 32,500,000

\$ 443,000

The non-Federal sponsor has also agreed to make all required payments concurrently with project construction.

**STATUS OF LOCAL COOPERATION:** The State of California Reclamation Board, in conjunction with the Sacramento Area Flood Control Agency (SAFCA), will act as the non-Federal sponsor for the flood control features of the project. The current non-Federal cost estimate of \$32,500,000 includes a cash contribution of \$19,027,000. As provided in Section 104 of the Water Resources Development Act of 1986 (PL 99-662), SAFCA applied for credit against their share of the design and construction cost of the project for work carried out after the reconnaissance phase consistent with the ultimately authorized plan. On September 12, 1996, the Assistant Secretary of the Army (Civil Works) approved potential credit for SAFCA, estimated at \$7.1 million. The Section 104 credit amount approved by ASA (CW) in Jan 2006 was \$7,193,252. On January 15, 1998, SAFCA passed a resolution adopting the Consistent High Protection Plan as the locally preferred plan and indicated their intent to participate as the non-Federal sponsor. This plan would provide a consistent level of protection throughout the study area. SAFCA, along with the State of California Reclamation Board, has established a fund to mitigate project-related hydraulic impacts downstream in the Beach Stone Lakes and Point Pleasant areas. This fund would be approximately \$2 million and be borne 100 percent by the non-Federal sponsor.

The Project Cooperation Agreement (PCA) for environmental restoration was signed 18 September 2003 and the PCA for flood control was signed May 2005. The sponsor has a reasonable plan for implementation to meet its financial commitment.

**COMPARISON OF FEDERAL COST ESTIMATES:** The current Federal cost estimate of \$59,500,000 reflects a decrease of \$200,000 from the latest estimate presented to Congress (FY2007). This change includes the following items.

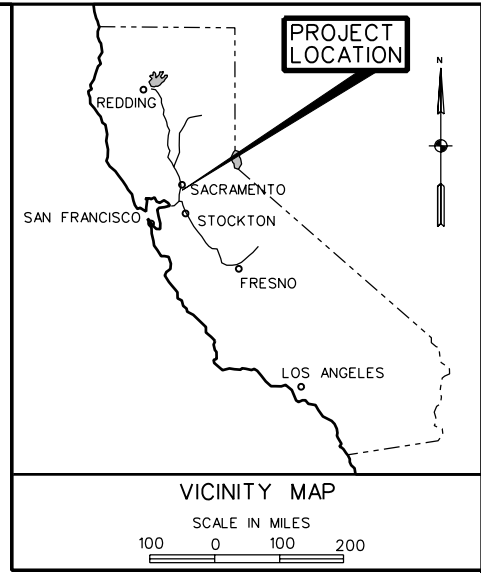
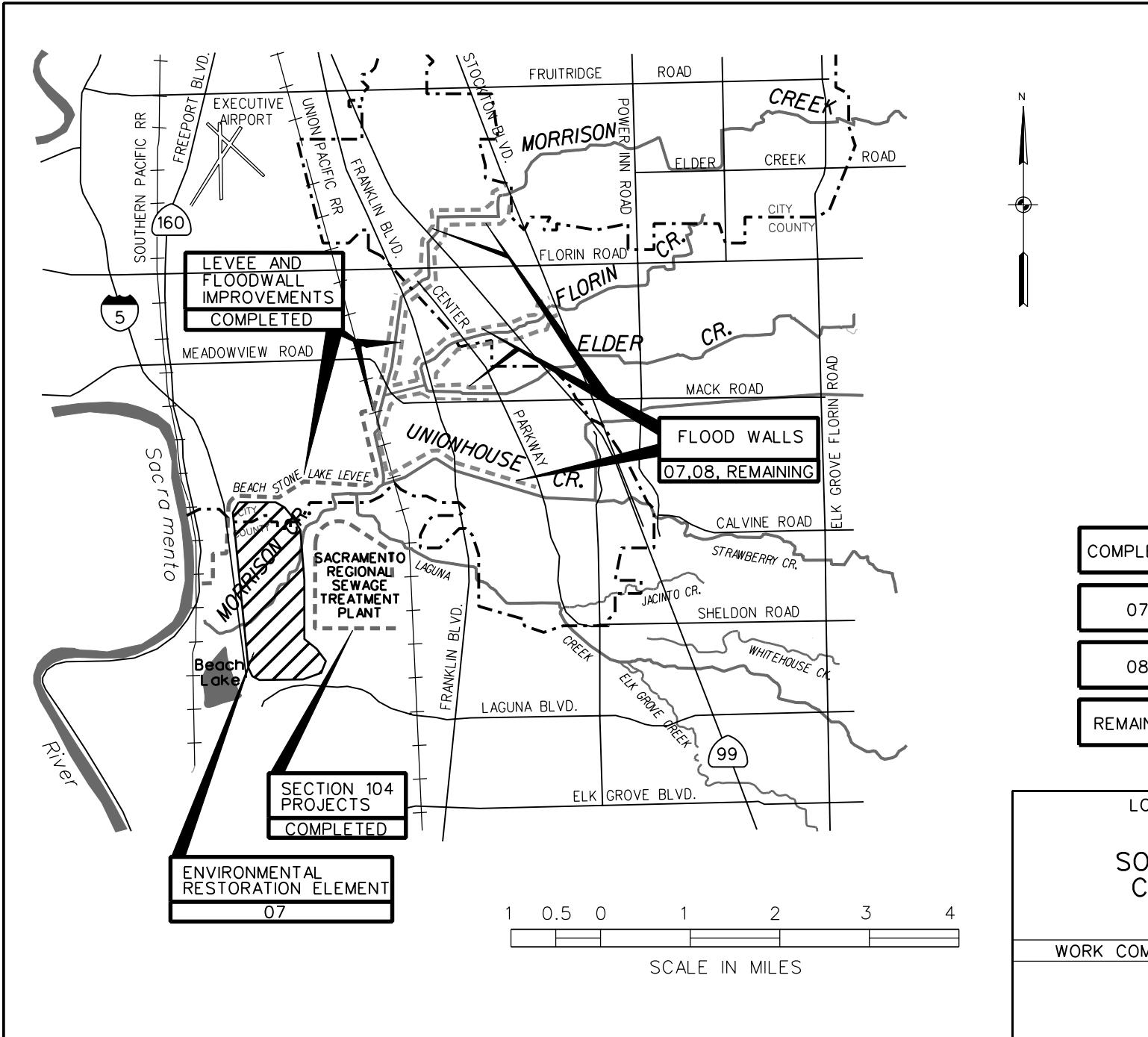
Item	Amount
Post Contract Award and Other Estimating Adjustments	\$ 200,000
Total	\$ 200,000

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT:** The Final Environmental Impact Statement/Environmental Impact Report was filed with EPA on 15 May 1998. A finding of No Significant Impact regarding the revised design was signed 16 December 2004.

**OTHER INFORMATION:** Funds to initiate preconstruction engineering and design were appropriated in FY 1998 and funds to initiate construction were appropriated in FY 2002. The initial construction contract (contract 1A) for the lower reaches of the project from the Union Pacific Railroad to the Sacramento River was awarded on June 14, 2005. Plans and specs for the next contract (contract 1B) were complete in May 2006. Award of the initial construction contract 1B was 20 July 2006.

The restoration monitoring contract will continue through mid FY2008.

Fish and wildlife mitigation costs are currently estimated at \$914,000.



**WORK STATUS**

- COMPLETED** WORK COMPLETED AS OF 30 SEPTEMBER 2006
- 07** WORK PROPOSED WITH FUNDS AVAILABLE FOR FY 2007
- 08** WORK PROPOSED WITH FUNDS REQUESTED FOR FY 2008
- REMAINING** WORK REQUIRED TO COMPLETE THE PROJECT AFTER FY 2008

LOCAL PROTECTION PROJECTS  
(FLOOD CONTROL)

**SOUTH SACRAMENTO  
COUNTY STREAMS  
CALIFORNIA**

WORK COMPLETED, IN PROGRESS & PROPOSED

SACRAMENTO DISTRICT  
SOUTH PACIFIC DIVISION  
1 JANUARY 2007

APPROPRIATION TITLE: Construction - Dam Safety Assurance

PROJECT: Success Dam and Reservoir, Tule River, California - Dam Safety Seismic Remediation (Dam Safety Assurance) (Continuing)

LOCATION: The project area is located in Tulare County within the 12,500 square-mile Tulare Lake Basin in the southeastern portion of the San Joaquin Valley about 60 miles north of the city of Bakersfield, California. The Tule River drains about 390 square miles into Success Lake and flows from the lake on to the valley through the city of Porterville, and continues another 25 miles through agricultural areas.

DESCRIPTION: A Dam Safety Assurance Program (DSAP) Evaluation Report recommends remedial treatment at Success Dam to prevent foundation liquefaction that could lead to a catastrophic failure of the dam.

AUTHORIZATION: Flood Control Act of 1944

REMAINING BENEFIT-REMAINING COST RATIO: N/A

TOTAL BENEFIT-COST RATIO: N/A

BASIS OF BENEFIT-COST RATIO: N/A

SUMMARIZED FINANCIAL DATA		STATUS (1 JAN 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Appropriation Requirements (COE)	\$190,800,000	Entire Project	Not Started	TBD
Future Non-Federal Reimbursement	2,720,000	PHYSICAL DATA		
Estimated Federal Cost (Ultimate)	188,080,000	Dam-earthfill		
Estimated Non-Federal Cost	2,720,000	Gated outlet conduit		
Cash Contribution	\$ 0	Uncontrolled spillway 200 feet wide		
Other Costs	0	Crest length 22.5 feet		
Reimbursements	2,720,000	Crest width 16.0 feet		
Total Estimated Project Cost	\$190,800,000			

Division: South Pacific

District: Sacramento  
5 February 2007

Success Dam and Reservoir, Tule River, CA  
Dam Safety Seismic Remediation

SUMMARIZED FINANCIAL DATA (Continued)

ACCUM  
PCT OF EST  
FED COST

Allocations thru 30 September 2004	\$ 5,419,700	1/	
Allocation for FY 2005	3,383,000		
Allocation for FY 2006	7,920,000		
Conference Allowance for FY 2007	0		
Allocation for FY 2007	25,000,000	*	
Allocations through FY 2007	41,722,700		22
Allocation Requested for FY 2008	18,000,000		31
Programmed Balance to Complete after FY 2008	131,077,300	2/	

\* Assumed allocation. Final, actual allocations yet to be determined.

1/ Includes \$344,000 for PED funded under the Operations and Maintenance Appropriation.

2/ Non-federal sponsor has up to 50 years to repay their share of project costs, therefore appropriations for entire project cost must be programmed.

JUSTIFICATION: Success Dam and Reservoir is located on the Tule River about 5 miles east and upstream of the town of Porterville, Tulare County, California. Construction of the main dam and appurtenances was begun during October 1958. The project was certified complete and accepted by the Government for operation on 15 May 1961. The total first cost of the project is approximately \$14,247,000 (1961 dollars). The project lies within Seismic Zone 3 (major seismic hazard), and is operated and maintained under the jurisdiction of the US Army Corps of Engineers, Sacramento District. The main dam is a rolled earthfill structure with a maximum height of 142 feet and is 3,404 feet long.

A 1983 report, "Dynamic Analysis of Success Dam, Success Reservoir, Tule River, California" (US Army Corps of Engineers, Sacramento District, June 1983), concluded that Success Dam would perform adequately in the event of a Maximum Credible Earthquake as required by criteria in ER 1110-2-1806 (16 May 1983). During the review of the dynamic analysis report, it was noted that there was considerable uncertainty about the amount of actual deformation the dam would experience under seismic loading. However, the dam was deemed safe due to the available freeboard of 39 feet when the reservoir is at gross pool. In June 1992, a Technical Review Conference (TRC) reexamined the 1983 report and concluded that the 1983 study was representative of accepted engineering practices at the time of its completion. However, the TRC recognized that recent advances allowed better understanding of the alluvial soils present in the foundation of Success Dam and recommended further studies be performed to update the seismic evaluation.

These recent studies concluded that a Maximum Credible Earthquake would cause extensive loss of strength, slope instability, and deformation over a section of the Success Dam embankment. This damage may be sufficient to result in an uncontrollable loss of the reservoir pool through a breach in the embankment. Similar damage levels may also result from lesser earthquake events. Any breach of the dam should be expected to result in loss of life and damages estimated at \$941 million (2004 prices).

Division: South Pacific

District: Sacramento  
5 February 2007

Success Dam and Reservoir, Tule River, CA  
Dam Safety Seismic Remediation

JUSTIFICATION (Continued)

The Lower Tule River Irrigation District has been identified as the primary non-Federal cost-sharing sponsor based on their conservation use of the project.

FISCAL YEAR 2007: Current year funds will be used to:

Initiate the park HQ relocation	\$ 3,500,000
Initiate real estate acquisition and relocation	4,000,000
Continue environmental mitigation	3,000,000
Complete borrow and quarry investigations and test fills	5,500,000
Planning, Engineering and Design	9,000,000
Total	\$25,000,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Initiate dam construction	\$ 4,000,000
Complete real estate acquisition and relocation	8,500,000
Planning, Engineering and Design	5,250,000
Construction Management	250,000
Total	\$18,000,000



NON-FEDERAL COST: In accordance with the cost-sharing and financing concepts reflected in the Water Resources Development Act of 1986, as amended, the non-Federal sponsor must comply with the requirements listed below.

	Payment During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Requirements of Local Cooperation		
Reimburse 15 percent of the costs of modification allocated to irrigation water supply (9.5% of total project cost) within a period of 50 years following completion of construction.	\$2,720,000	
Total Non-Federal Costs	\$2,720,000	

The non-Federal sponsor has agreed to reimburse its share of construction costs within a period of 50 years following completion of construction in accordance with Water Resources Development Act of 1986 and Public Law 98-404.

STATUS OF LOCAL COOPERATION: In accordance with the Water Resources Development Act of 1986 and Public Law 98-404 the sponsor is required to sign a Cost-Sharing Agreement with the Department of Interior prior to construction.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$190,800,000 is an increase of \$1,400,000 from the latest estimate (\$189,400,000) presented to Congress (FY 2007). The change includes the following item:

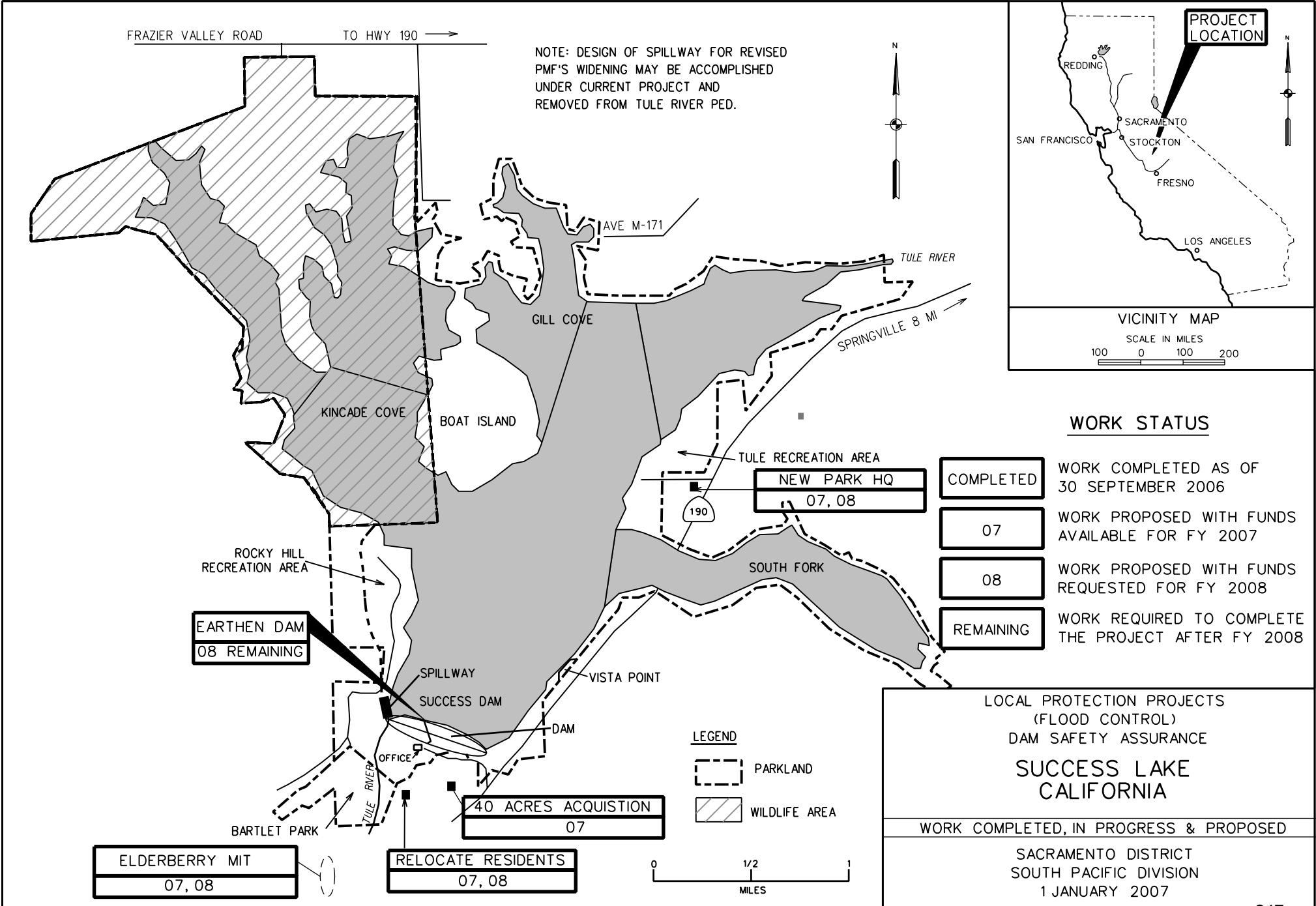
Item	Amount
Price Escalation on Construction Features	\$1,400,000
Total	\$1,400,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: A complete environmental assessment will be conducted prior to initiating remedial work.

OTHER INFORMATION: The Success Dam, Success Lake, Tule River, California Dam Safety Assurance Program Evaluation Report dated January 1999 was approved on 7 May 1999. Following approval of the report, preconstruction, engineering and design was initiated using Operations and Maintenance appropriation funding. Construction funds were initially appropriated in FY 2000.

In September 2004, a new roller compacted concrete dam (RCC) at the toe of the existing dam was chosen as the preferred alternative for remediation of Success Dam. A replacement dam was selected since removal of 75% of the existing dam would be necessary in order to expose and remove liquefiable material underlying the existing dam. Removal of the existing dam would result in the loss of flood protection and water storage to the downstream communities during the construction period.

In October 2005, foundation explorations conducted during the year indicated that subsurface conditions at the site would not support a concrete dam. Preliminary cost estimates indicate significant potential cost increases for the earthen dam alternative over the current project estimate. These additional costs result from increased environmental impacts, modifications to the existing outlet works, relocation of downstream residents, additional engineering costs, and the proximity and availability of borrow sites for the construction of the earthen dam. The magnitude of the potential cost increase will not be known until completion of ongoing studies and the Environmental Impact Statement (EIS) in February 2007.



FLOOD AND COASTAL STORM DAMAGE REDUCTION  
CONSTRUCTION  
SOUTHWESTERN DIVISION

**APPROPRIATION TITLE:** Construction, General - Local Protection (Flood Control)

**PROJECT:** Brays Bayou, Houston, Texas (Continuing)

**LOCATION:** The project is located in the metropolitan area of Houston, in Harris County, Texas.

**DESCRIPTION:** The authorized project provided for 3 miles of channel improvements, 3 flood detention basins, 7 miles of stream diversion, and recreation features including hike-and-bike trails, picnic facilities, sports fields, comfort stations and parking areas. As stated in the Water Resources Development Act of 1996, Section 211, subject to the approval of the Secretary of the Army, the non-Federal interest may design and construct an alternative to the diversion (downstream) component. The recommended plan developed by the sponsor includes all the features of the authorized plan with an alternative to the diversion (downstream) component that consists of 15.7 miles of earthen channel modifications, replacement and/or lengthening of 27 bridges, and 1,900 acre-feet of stormwater detention on a tributary (Willow Waterhole).

**AUTHORIZATION:** Water Resources Development Act of 1990.

**REMAINING BENEFIT-REMAINING COST RATIO:** 11.5 to 1 at 7 percent for Upstream Component (2.6 to 1 at 7 percent for Downstream)

**TOTAL BENEFIT-COST RATIO:** 3.84 to 1 at 7 percent for Upstream Component (2.12 to 1 at 7 percent for DownStream)

**INITIAL BENEFIT-COST RATIO:** 2.97 to 1 at 7 5/8 percent for total project (FY 1998).

**BASIS OF BENEFIT-COST RATIO:** Benefits are from the latest economic analysis included in the comprehensive Feasibility Report for Buffalo Bayou and Tributaries, dated July 1990 with October 1989 price levels.

<b>SUMMARIZED FINANCIAL DATA</b>			<b>ACCUM PCT OF EST FED COST</b>	<b>STATUS (1 Jan 2007)</b>	<b>PCT Cmpl</b>	<b>PHYSICAL COMPLETION SCHEDULE</b>
Estimated Federal Cost		333,030,000		Upstream Component	85%	TBD
Estimated Non-Federal Cost		175,030,000		Downstream Component	5%	TBD
Cash Contributions	28,380,000			Entire Project	45%	To be determined
Other Costs	146,650,000					
<b>Total Estimated Project Cost</b>		<b>\$508,060,000</b>				
Allocations to 30 September 2004		23,160,000		<b>PHYSICAL DATA</b>		
Allocation for FY 2005		8,884,000		Channel:		
Allocation for FY 2006		10,832,000		(Upstream Component)		
Conference Allowance for FY 2007		20,000,000		Brays Bayou – 3.7 miles		
Allocation for FY 2007		20,000,000		Detention Basins - 3		
Allocations through FY 2007		62,876,000	19%	(Downstream Component)		
Allocation Requested for FY 2008		1,500,000	19%	Detention Basins - 1		
Programmed Balance to Complete				Brays Bayou – 15.7 miles		
after FY 2008		78,204,000		Bridge replacements/modifications – 27		
Unprogrammed Balance to Complete				Recreation facilities Hike-and-bike		
after FY 2008		190,450,000	<u>1/</u>	trails with picnic facilities, sports		
				fields, and other day-use facilities.		

1/ Unprogrammed balance is for Downstream Component.

**JUSTIFICATION:** Brays Bayou drains about 137 square miles in the south-central portion of the Buffalo Bayou watershed. The area is subject to rainstorms throughout the year and urban flooding is a common occurrence. About 53,400 homes and businesses are currently subject to flooding by the Standard Project Flood (SPF), and about 25,000 of these properties would be subject to flooding by a 100-year frequency flood. On an average annual basis, stream flooding could cause nearly \$46,000,000 in damages per year to existing properties. The plan would reduce the existing 100-year frequency floodplain area by about 97 percent. Average annual flood damages would be reduced by about 95 percent. The recreational development will partially satisfy existing demand in the area. Average annual benefits, annualized at a 7-3/8% interest rate and based on October 1989 prices are as follows:

Annual Benefits	Amount
Flood Damage Prevention	\$ 87,268,400
Recreation	1,623,700
Total	\$ 88,892,100

**FISCAL YEAR 2007:** The total program amount of \$20,000,000 will be used to reimbursement the Harris County Flood Control District (non-Federal Sponsor) for Federal share of the Upstream Component construction work completed in FY06 and FY07 as follows to include oversight and coordination.

Upstream Construction:

Reimbursement for Discrete Segment DS#16 – Eldridge Road, Compartment 2 Phase 1, 2, 5, and Compartment 3	14,000,000
Reimbursement for Discrete Segment DS #22 – Complete Arthur Story Park	1,000,000
Partial reimbursement for completed FY07 work for DS #17 – Eldridge Road Compartment Weir & Structure	4,900,000
Federal Oversight	100,000
Total	\$20,000,000

**FISCAL YEAR 2008:** The requested amount of \$1,500,000 will be used to reimburse the Harris County Flood Control District (non-Federal Sponsor) for the Federal share of construction work performed during fiscal year 2007 in accord with Section 211 (f) of the Water Resources Development Act of 1996 and the associated Engineering and Design and Construction Management costs as follows.

Upstream Construction:

Final reimbursement for completed FY07 work for DS #17 – Eldridge Road, Compartment Weir & Structure	\$ 1,400,000
Federal Oversight	100,000
Total	\$ 1,500,000

**NON-FEDERAL COST & REQUIREMENTS:** Brays Bayou has been identified as a demonstration project by Section 211(f) of the Water Resources Development Act of 1996 (P.L. 104-303). This Act authorized the non-Federal sponsor to accomplish the work and be subsequently reimbursed for the Federal share of completed discrete segments, in accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, as listed below:

<b>Requirements of Local Cooperation</b>	<b>Payments During Construction and Reimbursements</b>	<b>Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs</b>
<b>Upstream Component</b>		
Provide lands, easements, rights-of-way, and borrow and excavated or dredged material disposal areas.	58,560,000	
Modify or relocate, utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	1,600,000	
Pay one-half of the separable costs allocated to recreation and bear all cost of operation, maintenance, repair, rehabilitation and replacement of recreation facilities.	2,720,000	300,000
Pay 5 percent of the costs allocated to flood control, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	10,530,000	247,480



<b>Requirements of Local Cooperation (cont'd)</b>	<b>Payments During Construction and Reimbursements</b>	<b>Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs</b>
<b>Downstream Component</b>		
Provide lands, easements, rights-of-way, and borrow and excavated or dredged material disposal areas.	42,240,000	
Modify or relocate, utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	44,250,000	
Pay one-half of the separable costs allocated to recreation and bear all cost of operation, maintenance, repair, rehabilitation and replacement of recreation facilities.	580,000	57,300
Pay 5 percent of the costs allocated to flood control, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	14,550,000	371,220
Total Non-Federal Costs	175,030,000	976,000

The non-Federal sponsors must also agree to make all required payments concurrently with project construction.

**STATUS OF LOCAL COOPERATION:** The sponsor for the flood control project is Harris County, acting through the Harris County Flood Control District. The Project Cooperation Agreement (PCA) for the flood control portion of the Upstream (Detention) Component was executed on March 3, 2000, and included the provision of Section 211, WRDA 96. The current non-Federal cost estimate of \$73,410,000 for this portion is an increase of \$3,230,000 from the non-Federal cost estimate of \$70,180,000 noted in the PCA. In accordance with Section 211(f) of the Water Resources Development Act of 1996, the sponsor is investigating the Downstream (Diversion) Component in an effort to find an alternative to the authorized project. The results of this effort are scheduled to be submitted to the ASA(CW) for approval in FY07. There is currently no sponsor for the recreation features of the project.

**COMPARISON OF FEDERAL COST ESTIMATES:** The current Federal cost estimate of \$333,030,000 is an increase of \$6,610,000 from the latest estimate (\$326,420,000) presented to Congress (FY 2007). This change includes the following items.

Item	Amount
Price Escalation on Construction Features for Upstream Component	(+) \$2,124,000
Price Escalation on Construction Features for Downstream Component	(+) \$4,486,000
Total	(+) \$6,610,000

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT:** The Environmental Impact Statement was filed with the Environmental Protection Agency in September 1988. The Environmental Assessment (EA) for the Detention Component was completed on 3 April 1998 with the signing of the Finding of No Significant Impacts (FONSI).

**OTHER INFORMATION:** Funds to initiate preconstruction engineering and design were appropriated in Fiscal Year 1990, and funds to initiate construction were appropriated in Fiscal Year 1998.

The Brays Bayou project is divided into two separable elements, an upstream and a downstream component. The upstream component has undergone design, and construction was initiated in FY 98. The downstream component is not supported by the Sponsor or the homeowners in the area, so an alternative must be identified to provide a level of protection to this portion of the Houston area. The Harris County Flood Control District (HCFCD), the local sponsor, is currently conducting reformulation studies, and has proposed an alternative to the downstream component consisting of 15.7 miles of earthen channel modifications, replacement and/or lengthening of 27 bridges, and 1,900 acre-feet of storm water detention on a tributary (Willow Waterhole). Approval of the General Reevaluation Report containing the recommended plan is scheduled for fiscal year 2007.

The project was included in the Water Resources Development Act of 1996 (Section 211(f)(6)) as a demonstration project to show advantages and effectiveness of non-Federal interests to undertake planning, design, and construction of Federal Flood Control projects. The HCFCD will receive reimbursement upon completion and approval of discrete segments of the authorized project. Each discrete segment's work will be audited prior to reimbursement. Funds being appropriated will be used to reimburse the sponsor and to pay Corps oversight costs. Section 102 of Public Law 106-60, the Fiscal Year 2000 Energy and Water Development Appropriations Act placed a limitation on credits and reimbursements for certain agreements proposed for execution after the date of enactment of Public Law 106-60. Section 102 does not apply to the Brays Bayou project (both Components) because the Fiscal Year 1998 Energy and Water Development Act language and Fiscal Year 2000 appropriations showed that Congress concurred with the reimbursement and the proposed Project Cooperation Agreement prior to the September 1999 enactment of Section 102.

Harris County experienced a major flooding event on October 15 through 16th, 2006. Harris County Flood Control District reported that completed discrete segments of the Brays Bayou project (3 regional detention basins) located upstream of the Sam Houston Tollway stored more than 3,500 acre-feet of water (equivalent to 1.1 billion gallons of water or 2.2 Astrodomes), which reduced residential and commercial flooding within the watershed.

**UPSTREAM ELEMENT:**

**SUMMARIZED FINANCIAL DATA**

Estimated Federal Cost		\$ 142,580,000
Estimated Non-Federal Cost		73,410,000
Cash Contributions	13,250,000	
Other Costs	60,160,000	
Total Estimated Costs for Upstream		\$ 215,990,000

**REMAINING BENEFIT-REMAINING COST RATIO:** 11.5 to 1 at 7 percent.

**TOTAL BENEFIT-COST RATIO:** 3.84 to 1 at 7 percent.

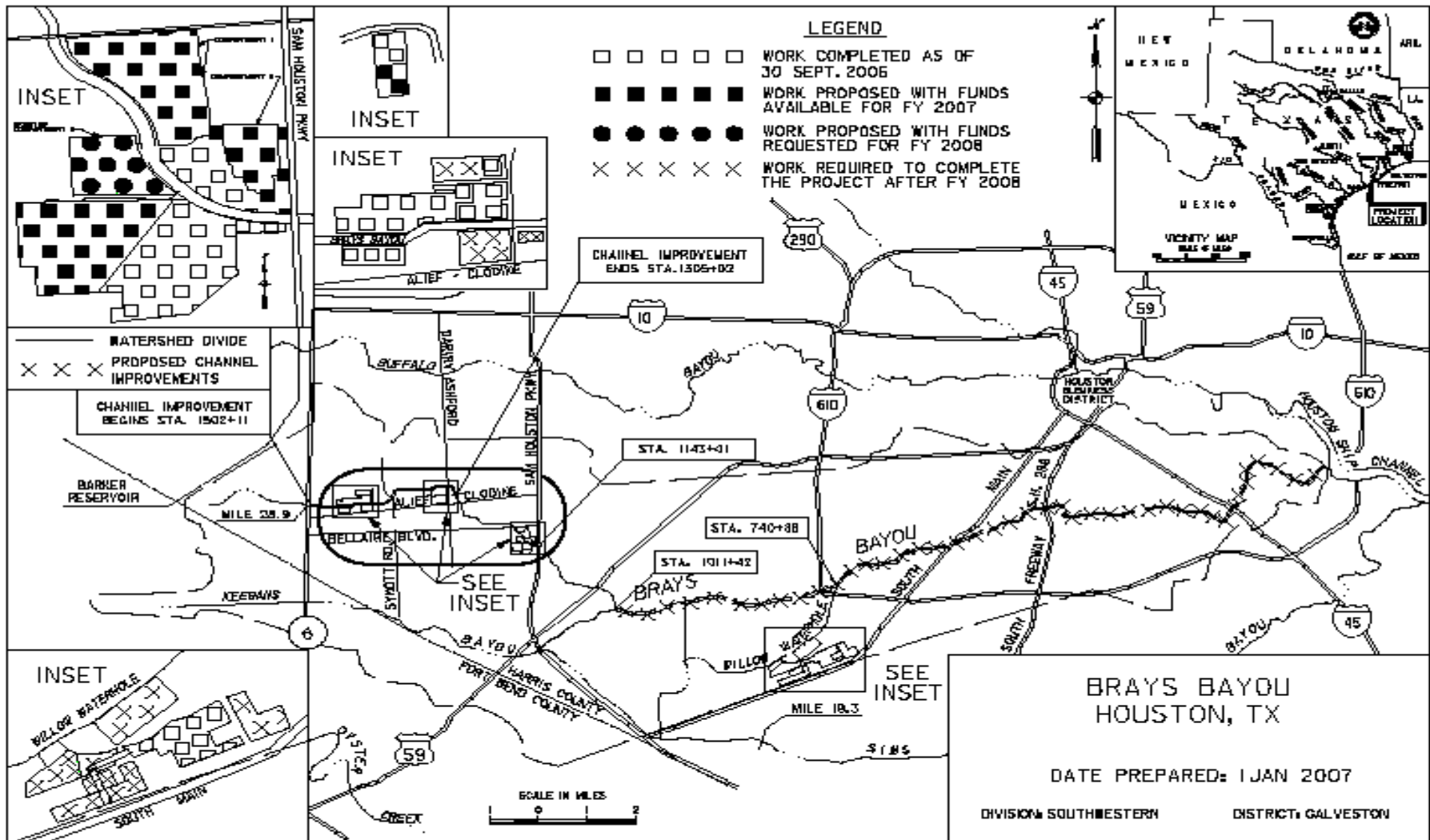
**DOWNSTREAM ELEMENT:**

**SUMMARIZED FINANCIAL DATA**

Estimated Federal Cost		\$ 190,450,000
Estimated Non-Federal Cost		101,620,000
Cash Contributions	15,130,000	
Other Costs	86,490,000	
Total Estimated Costs for Downstream		\$ 292,070,000

**REMAINING BENEFIT-REMAINING COST RATIO:** 2.6 to 1 at 7 percent.

**TOTAL BENEFIT-COST RATIO:** 2.12 to 1 at 7 percent.



**APPROPRIATION TITLE:** Construction, General - Dam Safety Assurance.

**PROJECT:** Canton Lake, Oklahoma, (Dam Safety), (Construction)

**LOCATION:** The project is located on the North Canadian River about 2 miles north of Canton in Blaine County, Oklahoma.

**DESCRIPTION:** Construction of the project was completed in May 1948. The dam consists of a rolled earth fill embankment with a gate controlled, concrete gravity chute-type spillway located in the right abutment. The outlet works consist of three sluices through the spillway weir, which are controlled by broome-type gates. The recommended plan for resolution of the dam safety deficiencies consists of anchoring the existing spillway to improve sliding stability, relocation of Highway 58A, constructing an auxiliary spillway to increase the discharge capacity required during a probable maximum flood event and placing the excavated material from the spillway excavation at the toe of the earthen dam to resolve the seismic and seepage deficiencies as an additional benefit.

**AUTHORIZATION:** Flood Control Act of 1938.

**REMAINING BENEFIT-REMAINING COST RATIO:** Not applicable.

**TOTAL BENEFIT-COST RATIO:** Not applicable since the project is a dam safety assurance project.

**INITIAL BENEFIT-COST RATIO:** Not applicable since the project is a dam safety assurance project.

**BASIS OF BENEFIT-COST RATIO:** Not applicable since the project is a dam safety assurance project.

**SUMMARIZED FINANCIAL DATA**

**Original Project**

Actual Federal Cost	\$ 11,210,000
Actual Non-Federal Cost	\$ 0
Cash Contributions	0
Total Original Project Cost	\$ 11,210,000

**Remedial Works or Project Modification**

Estimated Total Appropriation Requirement	\$ 63,200,000
Future Non-Federal Reimbursement	1,759,000
Estimated Federal Cost (Ultimate)	61,441,000
Estimated Non-Federal Cost	1,759,000
Reimbursements	\$1,580,000
Water Supply Storage	\$1,759,500
Total Estimated Remedial or Modification Cost	63,200,000
Total Estimated Project Cost	\$ 74,410,000

Allocations to 30 September 2003	2,321,000	<u>1/</u>
Allocation for FY 2004	1,111,000	
Allocation for FY 2005	133,000	
Allocation for FY 2006	5,940,000	<u>2/</u>
Conference Allowance for FY 2007	6,000,000	
Allocation for FY 2007	6,000,000	
Allocations through FY 2007	15,505,000	25%
Allocation Requested for FY 2008	35,700,000	80%
Programmed Balance to Complete	11,995,000	
Unprogrammed Balance to Complete after FY 2008	0	

1/ Funds of \$750,000 provided in the FY 2002 Construction, General Appropriation, Dam Safety and Seepage Program line item.

2/ Reflects \$60,000 reduction for rescission in accordance with Section 3801 of P.L. 109-148.

**Division: Southwestern**

**District: Tulsa**

**Project: Canton Lake, Oklahoma  
(Dam Safety)**

**5 February 2007**

**ACCUM.  
PCT. OF EST.  
FED. COST**

**STATUS  
(1 Jan 2007)**

**PERCENT  
COMPLETE**

**PHYSICAL  
COMPLETION  
SCHEDULE**

Entire Project

14%

To be Determined

**PHYSICAL DATA**

Anchor Stabilization – Installation of 64 post tensioned tendons with significant subsurface dam instrumentation- **COMPLETED.**

Road Relocation – Relocation of Highway 58A by constructing 1 mile of paved roadway with shoulders.

Auxiliary Spillway – Construction of a fused gated structure with new channel approach and spillway weir

**JUSTIFICATION:** The Dam Safety Assurance Report, approved in 2002, indicated two serious and interrelated hydrologic deficiencies occurred at the existing Canton Lake. The deficiencies included inadequate factors of safety against spillway sliding and uncontrolled embankment overtopping by the Probable Maximum Flood. In 2005 Canton was included in Screening Portfolio Risk Assessment which indicated that Canton was within the top ten percent highest at risk dams with regard to failure by uncontrolled seepage. In 2005 a Seismic Safety Review was conducted which indicated that the embankment could move during a seismic event. The population at risk is 60,000 people with potential economic losses estimated between \$1.75 and \$2.64 Billion.

**FISCAL YEAR 2007:** The requested amount of \$6,000,000 will be applied as follows:

Relocation of Highway 58A	\$3,700,000
Continue Plans and Specs for Auxiliary Spillway	2,000,000
Construction Management	<u>300,000</u>
Total	\$ 6,000,000

**FISCAL YEAR 2008:** The requested amount of \$35,700,000 will be applied as follows:

Complete Plans and Specs for the auxiliary spillway	\$ 1,470,000
Fully fund the excavation of the auxiliary spillway, spoil placement ground water control, and cutoff wall	\$ 29,000,000
Construction Management S&A	\$ 2,230,000
Project Management & Project Support	\$ 1,000,000
Initiate Plans and Specs for weir, outlet works and fuse gates	<u>\$ 2,000,000</u>
Total	\$35,700,000

Division: Southwestern

District: Tulsa

Project: Canton Lake, Oklahoma  
(Dam Safety)

5 February 2007

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**NON-FEDERAL COST:** In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below.

<b>Requirements of Local Cooperation</b>	<b>Payments During Construction</b>	<b>Annual Operation, Maintenance, Repair Rehabilitation and Replacement Costs</b>
Pay 15 percent of cost assigned to project purposes in accordance with the cost allocation in effect for the project at the time of initial project construction. Water supply storage is 25.5 percent of the joint-use costs.	\$ 1,759,500	0
Total Non-Federal Costs	\$ 1,759,500	0

The non-Federal sponsor will reimburse its share of construction costs over a period not to exceed 30 years following completion of construction.

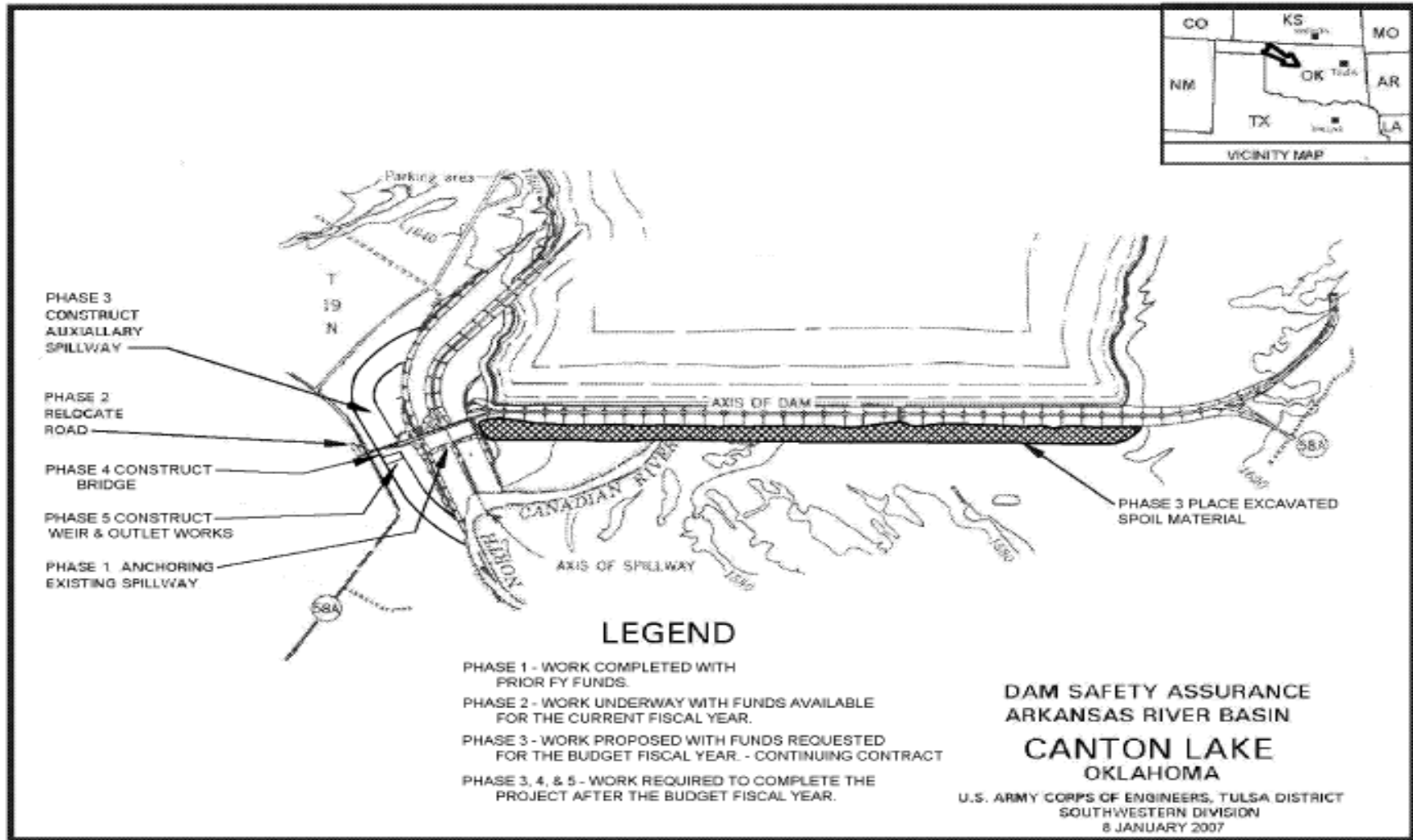
**STATUS OF LOCAL COOPERATION:** The city of Oklahoma City has 100 percent of the water supply storage under contract. Water supply storage is 25.5 percent of the joint-use costs. Reimbursement payments will be initiated at the completion of construction.

**COMPARISON OF FEDERAL COST ESTIMATES:** The current Federal cost estimate of \$63,200,000 is an increase of \$17,200,000 from the last estimate presented to Congress (FY 2006). Increase in the estimate is due to developing a more refined estimate which includes changing the location of the auxiliary spillway from the left side embankment to the right side embankment because of inadequate foundation material. As an additional benefit the project now remedies the seismic and seepage deficiencies. The project now addresses all project deficiencies to include stability, hydrologic, seepage and seismic issues.

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT:** Not required. The provisions of Section 404 of the Clean Water Act do not apply because the project improvements do not involve the placement of fill material or the discharge of dredge material in the waters of the United States.

**OTHER INFORMATION:** A Dam Safety Assurance Program Evaluation Report was approved in March 2002. Construction funds were first appropriated for this project in Fiscal Year 2003. During FY06 a seismic and seepage study were performed in addition to the Design Document Report (DDR), which required the relocation of the auxilliary spillway from the Left Abutment to the Right Abutment areas of Canton Dam due to foundation issues. At this time a construction cost increase is anticipated. Currently, a formal Cost Estimate is underway at this time based on economic evaluations and will be reported upon completion and review.





**APPROPRIATION TITLE:** Construction, General – Major Rehabilitation (Reservoirs)

**PROJECT:** Clearwater Lake Major Rehabilitation, Missouri (Continuing)

**LOCATION:** Clearwater Lake is located on the Black River in Wayne and Reynolds Counties in southeast Missouri.

**DESCRIPTION:** The project provides for the construction of a concrete cutoff wall along the entire length of the dam, through the impervious core trench, and into bedrock to prevent seepage and piping of materials through and under the dam. The project purpose is flood damage reduction and 100% of storage is for this purpose.

**AUTHORIZATION:** Flood Control Act of 1938 (Public Law 761, 75<sup>th</sup> Congress, 3<sup>rd</sup> Session).

**REMAINING BENEFITS-REMAINING COST RATIO:** Not applicable since the project is a dam safety assurance project.

**TOTAL BENEFIT-COST RATIO:** Not applicable since the project is a dam safety assurance project.

**INITIAL BENEFIT-COST RATIO:** Not applicable since the project is a dam safety assurance project.

**BASIS OF BENEFIT-COST RATIO:** Not applicable since the project is a dam safety assurance project.

SUMMARIZED FINANCIAL DATA		ACCUM PCT OF EST FED COST	STATUS (1 Jan 2006)	PCT CMPL	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$98,344,000		Entire Project	21	To Be Determined
Estimated Non-Federal Cost	0				
Total Estimated Project Cost	\$98,344,000				
Allocations to 30 September 2004	\$ 150,000				<b>PHYSICAL DATA</b> Concrete Cutoff Wall approximately 1,000,000 square feet
Allocation for FY 2005	1,050,000				
Allocation for FY 2006	18,825,000	<u>1/</u>			
Conference Allowance for 2007	28,000,000				
Allocation for FY 2007	28,000,000				
Allocations through FY 2007	48,025,000	49			
Allocation Requested for FY 2008	25,000,000	75			
Programmed Balance to Complete after FY 2008	\$25,319,000				
Unprogrammed Balance to Complete after FY 2008	0				

1/ Reflects \$2,955,000 reprogrammed from the project, of which \$2,850,000 was returned in FY07.

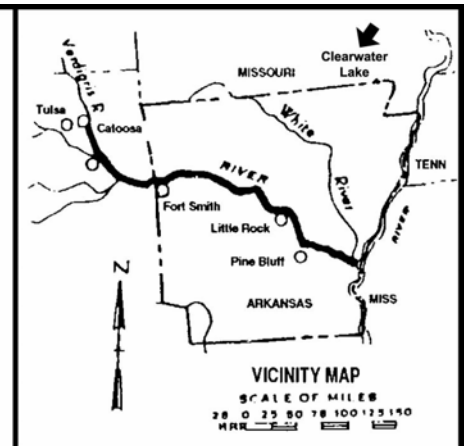
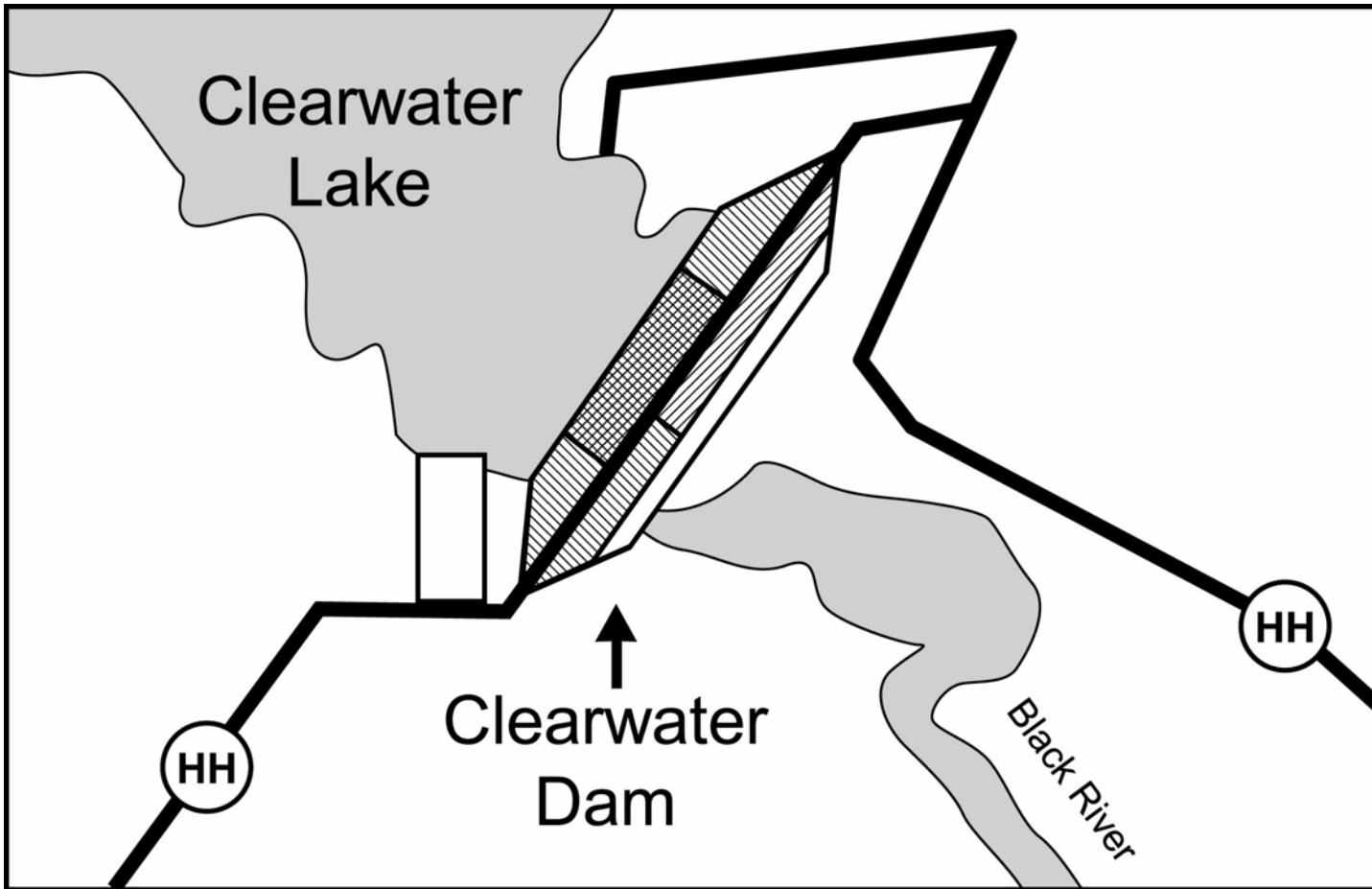
**Division:** Southwestern





**District:** Little Rock

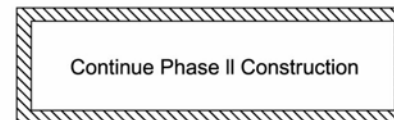
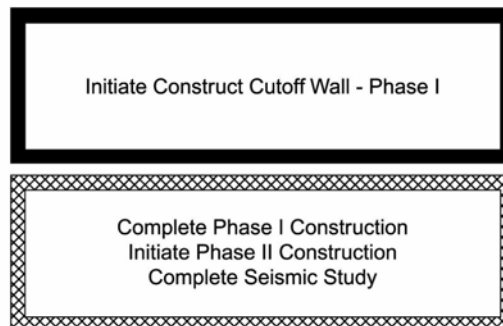
**Project:** Clearwater Lake Major Rehabilitation

**5 February 2007**

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-  Work complete as of Jan 2006
-  Work proposed with funds available for FY 2007
-  Work proposed with funds available for FY 2008
-  Work required to complete the project after 2008



**WHITE RIVER BASIN  
 CLEARWATER LAKE  
 MISSOURI  
 (MAJOR REHAB)**  
 U.S. ARMY ENGINEER DISTRICT LITTLE ROCK  
 U.S. ARMY ENGINEER DIVISION, SOUTHWESTERN  
 1 JANUARY 2007

**JUSTIFICATION:** Clearwater Dam has experienced seepage related issues, extending back to shortly after completion of original construction. Over the course of the dam's history, various methods have been employed to remediate or reduce seepage related issues. In spite of all these efforts and expenditures, the problem has worsened. A sinkhole developed in the upstream face of the dam in January 2003, calling into question the integrity of the dam embankment and potentially the clay core. Continuing to defer a long-term solution to the seepage problem increases the risk of a dam failure. Noteworthy is the fact that conditions of earth dams have the potential to deteriorate quickly, with little evidence. Continuing to utilize O&M funding to monitor and band-aid the problem is no longer viable. The area that would be affected by a dam failure primarily extends from the dam downstream to Poplar Bluff, MO. If dam failure occurs, there would be very little warning time before Piedmont, MO is cutoff and inundation begins, and adverse impacts to Poplar Bluff, MO would occur within one day. The limited state highways follow the valley where flooding will occur, making egress and response assistance to the population at risk very difficult. Many smaller towns affected by flooding have only one egress route. The rural nature of the area makes emergency notification difficult. Failure of Clearwater Dam would negate the benefits for which the project was originally approved. The risk-based economic analysis indicates property damages of up to \$200,000,000 and potentially 369 deaths. Clearwater Lake is an important economic resource for the area, primarily through recreational usage. Failure of the dam and loss of the lake would result in the loss of its economic value to the area. Though residents might return to salvage their property following a failure, decreased property values, loss of jobs, income losses, and loss of wealth due to flood induced expenses would have negative economic effects. Average annual benefits are as follows:

Annual Benefits	Amount
Emergency Action	\$ 162,500
Flood Damage	2,563,900
Foregone Recreation	82,500
Dam Repair	4,363,900
Traffic Delay	-330,978
Total Annual Benefits	\$6,841,822

**FISCAL YEAR 2007:** The allocated amount of \$28,000,000 will be applied as follows:

Initiate Construction of Cutoff Wall – Phase II	\$26,486,000
Complete Seismic Study	1,014,000
Planning, Engineering, and Design	200,000
Construction Management	<u>300,000</u>
Total	\$28,000,000

**FISCAL YEAR 2008:** The requested amount of \$25,000,000 will be applied as follows:

Continue Construction of Cutoff Wall – Phase II	\$23,000,000
Planning, Engineering, and Design	200,000
Construction Management	<u>1,800,000</u>
Total	\$25,000,000

**Division: Southwestern**

**District: Little Rock**

**Project: Clearwater Lake Major Rehabilitation**

**5 February 2007**

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**NON-FEDERAL COST:** This major rehabilitation project is 100% federally funded.

**COMPARISON OF FEDERAL COST ESTIMATES:** The current Federal cost estimate of \$98,344,000 is the latest estimate presented to Congress (FY 2006).

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT COMPLIANCE:** An environmental assessment of the project was completed in May 2004, with signature of the Finding of No Significant Impact in June 2004.

**OTHER INFORMATION:** The Major Rehabilitation Report was submitted in June 2004 and approved by the Assistant Secretary of the Army for Civil Works in August 2004. Funds to initiate construction were appropriated in Fiscal Year 2006. The on-going construction phase of the project consists of a Phase I drilling and grouting program to identify and treat subsurface features that would ultimately impact construction of the cutoff wall, as well as refine the parameters of the cutoff wall. The Phase I contract was awarded in January 2006, with completion scheduled for July 2007. Phase II of the project will consist of construction of the cutoff wall, and the contract is expected to be awarded in June 2007. Fiscal year 2007 funds will be used to complete design and award the Phase II contract, as well as perform additional seismic evaluation and monitoring of the dam. A preliminary seismic evaluation of the dam for the operating basis earthquake was conducted during the design of Phase I. Additional evaluation of the dam for the maximum credible earthquake is necessary to determine if the dam meets Corps dam safety criteria. Fiscal year 2008 funds will be used to continue construction of Phase II and additional seismic evaluation of the dam. Completion of the project is currently scheduled for fiscal year 2010.

**APPROPRIATION TITLE:** Construction General - Local Protection (Flood Control)

**PROJECT:** Sims Bayou, Houston, TX (Continuing)

**LOCATION:** The project is located in Harris County, in the southern portion of Houston, Texas.

**DESCRIPTION:** The project provides flood damage reduction and consists of 19.3 miles of channel enlargement, rectification, and erosion control measures. Environmental quality measures, riparian habitat improvements, and recreational features are also included in the project.

**AUTHORIZATION:** Water Resources Development Act (WRDA) of 1986, Energy and Water Development Appropriations Act of 1990, and WRDA of 1992.

**REMAINING BENEFIT-REMAINING COST RATIO:** 48.1 to 1 at 7 percent.

**TOTAL BENEFIT-COST RATIO:** 8.87 to 1 at 7 percent.

**INITIAL BENEFIT-COST RATIO:** 9.3 to 1 at 8 5/8 percent (FY 1990).

**BASIS OF BENEFIT-COST RATIO:** Benefits are from Supplement 1 to the General Design Memorandum dated May 1993 at October 1992 price levels. Costs are based on the GDM Supplement 1 at October 1992 price levels.

<b>SUMMARIZED FINANCIAL DATA</b>		<b>ACCUM PCT OF EST FED COST</b>	<b>STATUS (1 Jan 2007)</b>	<b>PCT CMPL</b>	<b>PHYSICAL COMPLETION SCHEDULE</b>	
Estimated Federal Cost		250,450,000		Entire Project	75%	September 2012
Estimated Non-Federal Cost		124,410,000				
Cash Contribution	22,240,000					
Other Costs	102,170,000					
<b>Total Estimated Project Cost</b>		<b>374,860,000</b>				
Allocations to 30 September 2004		142,879,000				
Allocations for FY 2005		12,837,000				
Allocations for FY 2006		17,820,000				
Conference Allowance for FY 2007		22,400,000				
Allocation for FY 2007		22,400,000 <sup>1/</sup>				
Allocations through FY 2007		195,936,000	78%			
Allocation Requested for FY 2008		24,154,000	88%			
Programmed Balance to Complete after FY 2008		30,360,000				
Unprogrammed Balance to Complete after FY 2008		0				

**PHYSICAL DATA**

Channels:  
    Sims Bayou - 19.3 miles  
Relocations:  
    Railroad bridges  
Utilities  
    Roads  
Recreation facilities:  
    Hike-and-bike trails with picnic and  
    other day-use facilities

<sup>1/</sup> Reflects \$180,000 reduction for rescission in accordance with Section 3801 of P.L. 109-148.

**JUSTIFICATION:** The project will reduce stream flooding from 14,800 acres of urban lands and beneficially affect nearly 78,000 persons living in 29,000 homes. The 100-year flood plain would be reduced to 2,300 acres outside the required rights-of-way. The recreational development will partially satisfy existing demand in the area. Average annual benefits, annualized at an 8-5/8% interest rate and based on October 1992 prices are as follows:

<b>Annual Benefits</b>	<b>Amount</b>
Flood Damage Prevention	219,344,700
Recreation	945,300
<b>Total</b>	<b>220,290,000</b>

**FISCAL YEAR 2007:** The \$22,400,000 will be used as follows:

Complete construction of Reach 6, Cullen to State Highway 288	\$ 1,364,000
Complete construction of Reach 7a, State Highway 288 to Robin Boulevard	2,960,000
Continue construction of the Sediment Removal and Channel Repairs Downstream of Cullen to the Mouth	6,614,000
Initiate and complete construction for the Swallow Street Steel Sheet Pile Wall removal	3,800,000
Initiate and complete construction for Channel Repairs from Mykawa to Scenic Drive	3,000,000
Planning, Engineering, and Design	2,662,000
Construction Management	2,000,000
Total	\$22,400,000

**FISCAL YEAR 2008:** The requested amount of \$24,154,000 will be applied as follows:

Initiate and complete construction of Reach 7b, Robin Boulevard to Bathurst Drive	\$ 19,400,000
Planning, Engineering, and Design	2,754,000
Construction Management	2,000,000
Total	\$24,154,000



**NON-FEDERAL COST:** In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below:

<b>Requirements of Local Cooperation</b>	<b>Payments During Construction and Reimbursements</b>	<b>Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs</b>
Provide lands, easements, rights-of-way, and borrow and excavated or dredged material disposal areas.	44,790,000	
Modify or relocate, utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	57,050,000	
Pay one-half of the separable costs allocated to recreation and bear all cost of operation, maintenance, repair, rehabilitation and replacement of recreation facilities.	3,890,000	139,000
Pay 5 percent of the costs allocated to flood control, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities.	18,350,000	331,000
Credit for preparation of the dredged material disposal area for the Mouth to PTRR reach and completed miscellaneous engineering and design activities.	330,000	
<b>Total Non-Federal Costs</b>	<b>124,410,000</b>	<b>470,000</b>

The non-Federal sponsors must also agree to make all required payments concurrently with project construction.

**STATUS OF LOCAL COOPERATION:** The sponsor for the flood control project is Harris County. The current non-Federal cost estimate of \$124,410,000 for flood control, which includes a cash contribution of \$22,240,000, is an increase of \$37,810,000 from the non-Federal cost estimate of \$86,600,000 noted in the Local Cooperation Agreement (LCA), which reflected a cash contribution of \$13,800,000. In a letter dated 19 September 1991, the non-Federal sponsor indicated that it is financially capable and willing to contribute the increased non-Federal share. Analysis (dated 31 October 1991) of the non-Federal sponsor's financial capability to participate in the project reaffirms that the sponsor has a reasonable and implementable plan for meeting their financial commitment as expressed in the LCA. In 1993, the City of Houston indicated its desire to sponsor the recreation features for the project. In April 1999 the City provided a letter indicating its renewed interest in sponsorship. The recreational features have been developed and compiled in a Limited Reevaluation Report (LRR), which underwent an Independent Technical Review (ITR) in June 2005. The LRR is anticipated to be approved in March 2007.

**COMPARISON OF FEDERAL COST ESTIMATES:** The current Federal cost estimate of \$250,450,000 is an increase of \$3,850,000 from the latest estimate (\$246,600,000) presented to Congress (FY 2007). This change includes the following items.

Item	Amount
Price Escalation on Construction Features	(+) \$ 3,850,000
Total	(+) \$ 3,850,000

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT:** The final Environmental Impact Statement was filed with the Environmental Protection Agency in September 1983.

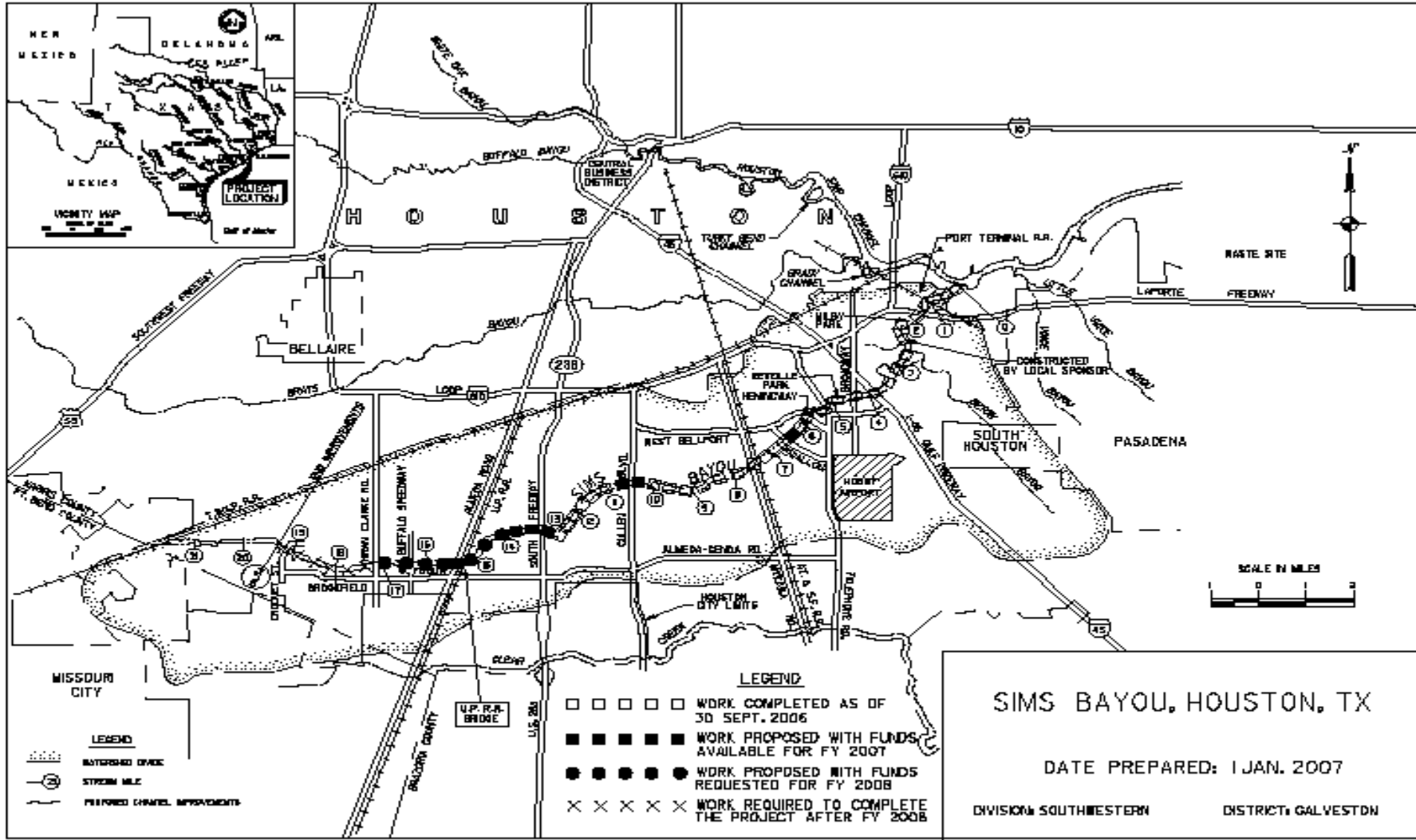
**OTHER INFORMATION:** Funds to initiate preconstruction planning were appropriated in Fiscal Year 1986 and funds to initiate construction were appropriated in Fiscal Year 1990

The Assistant Secretary of the Army for Civil Works has approved the sponsor's request for credit for work performed by the local sponsor. This credit is currently estimated at \$20,070,000, exclusive of lands and is being reimbursed during the period of construction. The project authorization was amended by the Energy and Water Development Appropriations Act of 1990 as the project cost estimate exceeded the maximum cost growth as described in Section 902 of the Water Resources Development Act of 1986. The authorization has been further modified by WRDA '92, Section 102 (66), to include, to the extent practicable, measures to improve environmental quality and riparian habitat.

Reach 7b, Robin to Hiram Clarke, originally scheduled in the FY07 budget has been delayed due to utility and bridge relocations, which were not initiated by the Sponsor. The projected award and completion of the utility and bridge relocations is 2008. The funds originally scheduled for Reach 7b will be used to do sediment removal and channel repairs downstream of Cullen Boulevard to the Mouth; remove the Swallow Street sheet pile wall; and channel repairs from Mykawa to Scenic Drive. These repairs are required in order to turn these reaches over to the Local Sponsor.

The previously approved recreation plan as presented in the General Design Memorandum of 1989 is being revised to reflect revisions to the plan requested by the Local Sponsor. A Limited Reevaluation Report (LRR) is being prepared and the updated plan includes 12.3 miles of new multipurpose trails along the banks of the channel with trails connecting to six existing park sides and a future biking facility. Additional features in parks will serve as rest stops and activity nodes for the greenbelt trail system. The LRR is scheduled to be approved in March 2007. The Sponsor, the City of Houston, has indicated their desire to cost-share in the recreation features. Upon approval of the LRR, and appropriation of funds specifically for Recreation, a Project Cooperation Agreement will be executed.

Harris County experienced excessive rainfall over a 12-24 hour period October 15 through 16th, 2006. Harris County Flood Control District reported that channel conveyance improvements virtually completed from State Highway 225 upstream to State Highway 288 helped reduce residential and commercial flooding along Sims Bayou.



FLOOD AND COASTAL STORM DAMAGE REDUCTION  
CONSTRUCTION  
MISSISSIPPI RIVER AND TRIBUTARIES

APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and TN - Construction

PROJECT: Atchafalaya Basin, Louisiana (Continuing)

LOCATION: The project is located in south-central Louisiana below the latitude of Old River and west of and generally paralleling the Mississippi River. The Atchafalaya River flows through the middle of the basin.

DESCRIPTION: The plan of improvement consists of a leveed floodway about 15 miles wide and 110 miles long that extends generally from the latitude of Old River to the Gulf of Mexico. The upper half of the basin is divided by the leveed Atchafalaya River. The Morganza Floodway is to the east of the Atchafalaya River and has a capacity of 600,000 cubic feet per second, which is introduced into the floodway by a gated control structure. The West Atchafalaya Floodway, which is located to the west of the river, is placed into operation when the fuse plug sections are overtopped bringing flows from the river that will introduce 900,000 cubic feet per second into the lower basin. After passing through the floodways, the flood waters enter the Gulf of Mexico through the Lower Atchafalaya River at Morgan City and the Wax Lake Outlet channel constructed west of Patterson, Louisiana. The project is part of a system and all work is programmed.

AUTHORIZATION: Flood Control Acts of 1928, 1934, 1936, 1938, 1941, 1946, 1950, 1954.

REMAINING BENEFIT - REMAINING COST RATIO: 48.6 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 3.8 to 1 at 7 percent. The benefit-cost ratio is based on all features which comprise the Main Stem system of the Mississippi River and Tributaries project.

INITIAL BENEFIT - COST RATIO: This project feature of the Main Stem system was authorized in Fiscal Year 1928 and initial construction funds were provided in Fiscal Year 1928. The authorized comprehensive review of the Mississippi River and Tributaries project, contained in House Document 308/88/2, as updated to reflect 1965 conditions and price levels, is considered to be the base estimate for the Main Stem system. The benefit-cost ratio for the Main Stem components computed for the base estimate was 7.9 to 1.

BASIS OF BENEFIT - COST RATIO: Benefits are from latest available evaluation approved in October 1979 at 1979 price levels. The latest comprehensive analysis was conducted in 1974. The 1979 analysis is the same as the 1974 analysis except that certain undocumented benefit categories were eliminated and 1979 prices were used.

SUMMARIZED FINANCIAL DATA			ACCUM PCT OF EST FED COST	STATUS (1 January 2007)	PCT CMPL	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost		\$1,783,000,000		Entire Project	95 Physical	TBD
Estimated Non-Federal Cost		\$ 11,000,000				
Cash Contributions	\$2,500,000					
Other Costs	8,500,000					
Total Estimated Project Cost		\$1,794,000,000				
Allocations to 30 September 2004		\$ 957,204,000				
Allocation for FY 2005		19,663,000				
Allocation for FY 2006		18,210,000				
Conference Allowance for FY 2007		27,600,000	*			
Allocation for FY 2007		27,600,000		57		
Allocations through FY 2007		1,022,677,000				
Allocation Requested for FY 2008		\$ 23,800,000		59		
Programmed Balance to Complete after FY 2008		736,523,000				
Unprogrammed Balance to Complete after FY 2008		0				

\* Assumed allocation. Final, actual allocations yet to be determined.

## PHYSICAL DATA

### Levees:

Average Height - 20 feet  
Length - 449 miles

### Relocations:

Roads - 15 miles  
Railroads - 20 miles

### Drainage Structures:

Pointe Coupee	2 gates, 10.5 by 15 feet
Melville	2 - 72-inch corrugated metal pipe with vertical lift gate
Darbonne	10-foot by 10-foot barrel with vertical lift gate
Bayou des Glaises	72-inch corrugated metal pipe with flap gate
Bayou Courtableau	2 weirs, 503 feet long
Brushy Bayou	5-foot by 6-foot barrel with vertical lift gate
Bayou Courtableau	5-barrel, each 10 feet by 15 feet with vertical lift gate

Lands and Damages:  
289,212 acres

### Pumping Stations:

Number - 15  
Capacity - Minimum - 50 cubic feet per second  
Maximum - 1,500 cubic feet per second  
Average - 400 cubic feet per second

### Bank Stabilization:

Length - 58 miles

### Floodgates:

Charenton - Sector-gated, 45 feet wide  
East Calumet - Sector-gated, 45 feet wide  
West Calumet - Sector-gated, 45 feet wide

### Channels:

Length: 147.1 miles

### Locks:

Bayou Boeuf, 75 feet by 1,156 feet, earth chamber  
Bayou Sorrel, 56 feet by 797 feet, earth chamber  
Berwick, 45 feet by 300 feet, concrete chamber

### Atchafalaya River Navigation:

New Channel-10.1 miles

### Freshwater Control Structure (Planned):

Sherburne - dual 10-foot by 10-foot reinforced  
concrete box culverts with gates  
Henderson - dual 10-foot by 10-foot reinforced  
concrete box culverts with gates

**JUSTIFICATION:** The Mississippi River below Morganza Floodway is capable of carrying 1,500,000 cubic feet per second without threatening the integrity of the levees along its banks which protect densely populated areas, highly developed agricultural lands, industries, and the City of New Orleans, as well as a number of communities. Studies indicate that the project flood against which the flood control protection works are designed could be of such magnitude that 3,030,000 cubic feet per second will pass the latitude of Old River. Since the Mississippi River below the Morganza Floodway can carry only one-half this amount, the other one-half must be diverted from the main channel. The diversion is made through the Old River Control Structure, the Old River Auxiliary Structure, and the Atchafalaya River, and through the Morganza and West Atchafalaya Floodways. In order to prevent diverted waters from spreading over the rich and highly developed agricultural lands within the Atchafalaya Basin, these rivers and floodways have been leveed to confine the diverted flow.

This floodway system is, for all practical purposes, a part of the main river system, in as much as the integrity of the main river system depends upon its utilization. Since this construction began, farms and industries have developed in the areas adjacent to the floodway assuming that they would receive protection. Therefore, overtopping or crevassing of the levees would cause far more damage than anticipated at the start of project construction. The main protection levees in the lower reaches are deficient because of consolidation of the soft underlying soils, especially those below the latitude of Krotz Springs, LA. Early construction of these levees to the approved grade is essential, not only for flood protection, but as a means of access for the movement of manpower and equipment to any spot threatened by floods.

The Atchafalaya Basin project is one of several Main Stem components, which together comprise the plan of improvement for the control of floods on the Mississippi River. The components are: Mississippi River Levees, Channel Improvement, South Bank Arkansas and South Bank Red River Levees, the Atchafalaya Basin, Atchafalaya Basin Floodway System, Old River, and a few miscellaneous items. Because the benefits of the Atchafalaya Basin derive from the way in which they operate together with the other Main Stem components when the Mississippi River floods, the benefit-cost ratio is a composite one that covers the entire plan.

The value of lands and improvements protected by authorized works against the design flood is \$159.4 billion in 2005 dollars. This consists of 226,000 residential acres which include the City of New Orleans, 45,000 acres of commercial lands, 10 million acres of agricultural lands, and 6.5 million acres of woodland and marshland. The area subject to flooding by project flood assuming no protective works is 22.7 million acres. The area that will be provided complete protection by the completed project is 15.1 million acres.

The maximum flood of record was the 1927 flood which overflowed about 26,000 square miles, caused the deaths of 214 people, rendered 637,000 people temporarily homeless, and caused property damages of \$347.0 million. This would be equivalent to \$12.0 billion damages in 2006 prices.

The next flood of magnitude was the 1973 flood which overflowed 16,875 square miles (10.8 million acres), caused the death of 28 people, and displaced approximately 45,300 persons. The deaths and displacements of persons would have been significantly higher without the project in place. Without Federal projects, approximately 19.8 million acres would have been inundated. Total damages with existing projects in operation were \$643 million (1973 price levels). Damages without projects would have been \$12.1 billion and total damages prevented by projects amount to \$11.3 billion. Expressed in 2006 prices, damages without the projects would have been \$43.5 billion and damages prevented would have been \$40.8 billion.



The benefit-cost ratio was derived by measuring the total benefits credited to those Main Stem components against their total cost. Average annual benefits for the composite of Main Stem features are as follows:

Annual Benefits	Amount @ 2.5%	Amount @ 7%
Flood Control	\$ 1,372,231,000	\$ 470,224,000
Navigation	291,680,000	132,965,000
Area Redevelopment	2,480,000	1,208,000
Recreation	3,433,000	3,234,000
Total	\$ 1,669,824,000	\$ 607,631,000

FISCAL YEAR 2007: Current year funds are being used as follows:

Initiate and Complete:	
W-74 Levee Enlargement Phase 1	4,000,000
West Bayou Sale North Bend	3,876,000
W-86 Levee Enlargement	1,800,000
W-102 Levee Enlargement	4,900,000
W-124 Levee Gap Closures	100,000
West Bayou Sale Gordy Levee Phase 1	4,000,000
Lands and Damages	
Surveys and Layouts	300,000
Relocations	100,000
Planning, Engineering and Design	1,074,000
Construction Management	5,751,000
Total	1,699,000
Total	\$ 27,600,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Initiate and Complete:	
E-54 Levee Enlargement	4,150,000
W-40 Levee Enlargement 2 <sup>nd</sup> Lift	3,063,000
E-58 Levee Enlargement	2,500,000
West Bayou Sale Gordy Phase 2	2,745,000
W-74 Levee Enlargement Phase 2	3,500,000
Lands and Damages	300,000
Surveys and Layouts	100,000
Relocations	175,000
Planning, Engineering and Design	5,567,000
Construction Management	1,700,000
Total	\$23,800,000

NON-FEDERAL COST: In accordance with the Flood Control Act of 15 May 1928, the non-Federal sponsor must comply with the requirements listed below.

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation and Replacement Costs
Bear the administrative costs for furnishing rights-of-way for levee and levee drainage construction; purchase maintenance equipment; and perform miscellaneous levee work.	\$ 1,110,000	0
Agree to accept lands turned over to them under the provision of Section 4 of the Flood Control Act of 15 May 1928, and as provided in the Flood Control Act of 18 August 1941.	0	0
Bear costs for and maintain all flood control works after their completion, except controlling and regulating spillway structures, including special levees; maintenance includes normally such matters as cutting grass, removal of weeds, local drainage and minor repairs to the levees.	0	\$3,700,000
For the Upper Point Coupee Loop Area, provide an interior drainage system and comply with the applicable provisions of the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, PL 91-646, approved 2 January 1971, and comply with the provision of Section 221 of the Flood Control Act of 1970, PL 91-611.	7,390,000	0
The State of Louisiana, through the Department of Transportation and Development as the local sponsor, will provide a voluntary 25% cost share for the planning, design, and construction of the interim protection for floodproofing of riverfront businesses in Morgan City and Berwick.	2,500,000	0
Total Non-Federal Costs	\$11,000,000	\$3,700,000

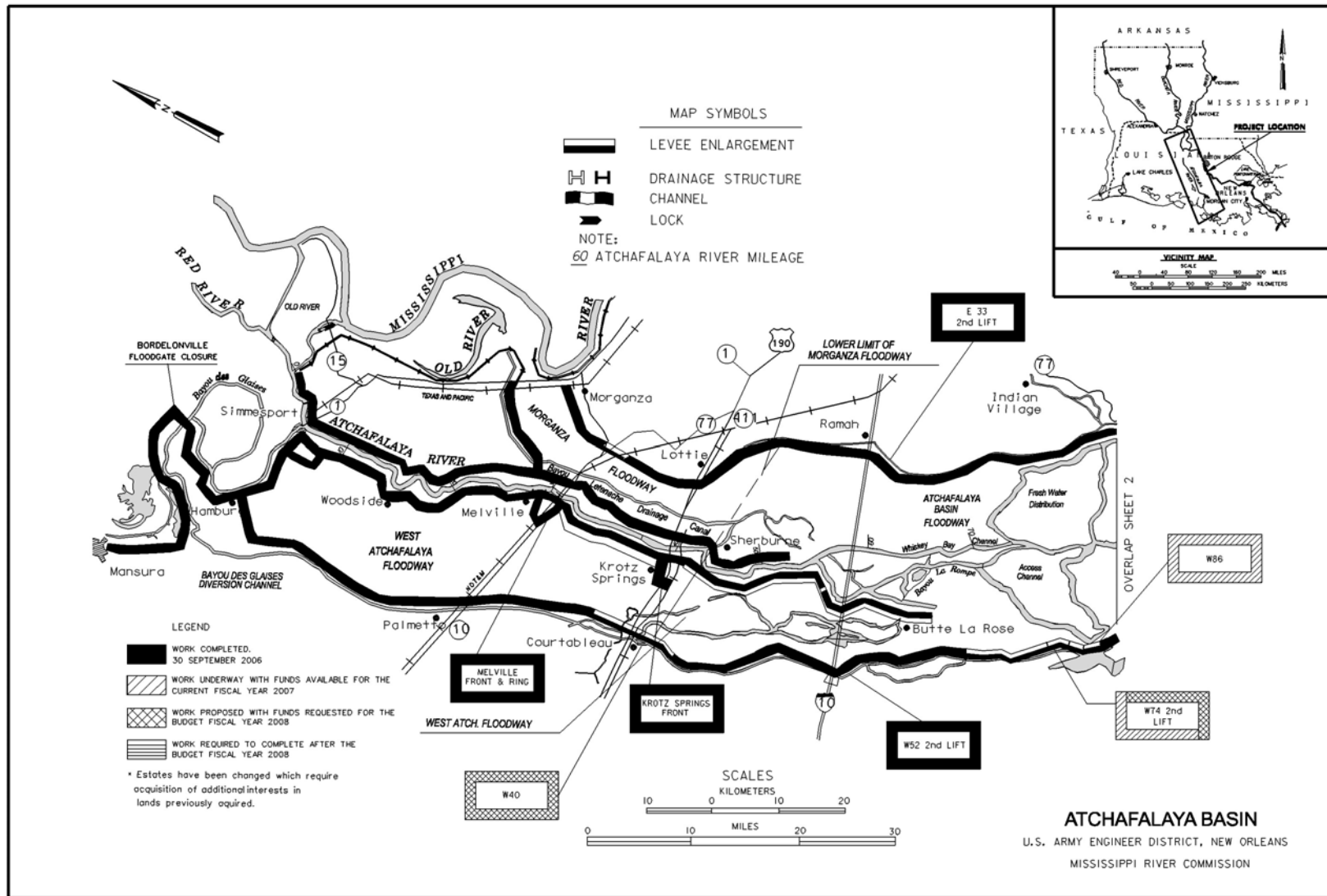
STATUS OF LOCAL COOPERATION: Necessary assurances for maintaining the project have been furnished by the Atchafalaya Basin Levee District; Red River, Atchafalaya and Bayou Boeuf Levee District; St. Mary Parish Government; Pointe Coupee Parish Police Jury; and the towns of Berwick and Morgan City, LA. These agencies are furnishing all requirements of local cooperation necessary for meeting present project schedules.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$1,783,000,000 is an increase of \$4,000,000 from the latest estimate (\$1,779,000,000) presented to Congress (Fiscal Year 2007). This change includes the following items:

Item	Amount
Price Escalation on Construction Features	\$ + 2,034,000
Design Changes	2,469,000
Post Contract Award and Other Estimating Adjustments	- 2,469,000
Price Escalation on Real Estate	+1,966,000
Total	

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final Environmental Impact Statement was filed with the Environmental Protection Agency on 20 August 1982. The final Environmental Impact Statement for the Upper Pointe Coupee Loop Area was filed with the Council on Environment Quality on 11 June 1976.

OTHER INFORMATION: Funds to initiate construction were appropriated in 1928.



SHEET 1 OF 2



APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO and TN - Construction

PROJECT: Channel Improvement, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri and Tennessee (Continuing)

LOCATION: The project is located in the Mississippi River and along its banks from the vicinity of Cairo, Illinois, to the Head of Passes, Louisiana, a distance of approximately 966 miles.

DESCRIPTION: The plan of improvement consists of stabilizing the banks of the river in a desirable alignment and obtaining the most efficient flow characteristics for it for flood control and navigation by means of revetments, dikes, foreshore protection, and improvement dredging. All work is programmed.

AUTHORIZATION: Flood Control Acts of 1928, 1936, 1938, 1941, 1944, 1962, 1965, 1966, and 1970.

REMAINING BENEFIT-REMAINING COST RATIO: 51.4 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 3.8 to 1 at 7 percent. The benefit-cost ratio is based on all features which comprise the Main Stem system of the Mississippi River and Tributaries project.

INITIAL BENEFIT-COST RATIO: This project feature of the Main Stem system was authorized in Fiscal Year 1928 and initial construction funds were provided in Fiscal Year 1928. The authorized comprehensive review of the Mississippi River and Tributaries project, contained in House Document 308/88/2, as updated to reflect 1965 conditions and price levels, is considered to be the base estimate for the Main Stem system. The benefit-cost ratio for the Main Stem components computed for the base estimate was 7.9 to 1.

BASIS OF BENEFIT-COST RATIO: Benefits are from the latest available evaluation approved in October 1979 at 1979 price levels. The latest comprehensive analysis was conducted in 1974. The 1979 analysis is the same as the 1974 analysis except that certain undocumented benefit categories were eliminated and 1979 prices were used.

SUMMARIZED FINANCIAL DATA		ACCUM PCT OF EST FED COST	STATUS (1 January 2007)	PCT CMPL	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$3,985,000,000		Entire Project	93	TBD
Estimated Non-Federal Cost	\$ 1,900,000				
Cash Contributions	\$1,800,000				
Other Costs	100,000				
<b>Total Estimated Project Cost</b>	<b>\$3,986,900,000</b>				<b>PHYSICAL DATA</b>
Allocations to 30 September 2004	\$2,721,142,000		Lands and Damages		19,135 acres
Allocation for FY 2005	36,356,000		Revetments		1,085 miles
Allocation for FY 2006	52,570,000		Dikes		339 miles
Conference Allowance for FY 2007	43,092,000		Dredging		As required
Allocation for FY 2007	43,092,000 *		Foreshore Protection		160 miles
Allocations to 30 September 2007	2,853,160,000	72	Pumping Station		1
Allocation Requested for FY 2008	53,395,000	73			
Programmed Balance to Complete After FY 2008	\$1,078,445,000				
Unprogrammed Balance to Complete After FY 2008	0				

\* Assumed allocation. Final, actual allocations yet to be determined.



**JUSTIFICATION:** The Channel Improvement Project is one of several Main Stem components, which together comprise the plan of improvement for the control of floods on the Mississippi River. The components are: Mississippi River Levees, Channel Improvement, South Bank Arkansas and South Bank Red River Levees, the Atchafalaya Basin, Atchafalaya Basin Floodway System, Old River, and a few miscellaneous items. Because the benefits of Channel Improvement derive from the way in which they operate together with the Main Stem components when the Mississippi River floods, the benefit-cost ratio is a composite one that covers the entire plan.

The Mississippi River, with a drainage area of about 1,245,000 square miles, has a wide range of flow, increasing from an approximate minimum of 90,000 cubic feet per second (675,000 gallons per second) to a maximum of 2,345,000 cubic feet per second (17,587,000 gallons per second) which occurred in 1927 at the latitude of Red River Landing. The project flood is 3,030,000 cubic feet per second (22,500,000 gallons per second). Part of the tremendous energy of this volume of flowing water is directed toward a relentless attack on the banks of the river, causing the unprotected banks to cave into the river. As this caving progresses, the attack becomes more direct, the bendway moves in toward the levee, and more sediment is placed in the river and deposited downstream in the form of a sandbar. This bar gradually builds out into the channel and deflects the river's attack to the opposite bank. As the cycle is repeated the river tends to meander and lengthen. Revetment is placed against the banks of the river at locations where mainline levees are being threatened with destruction or where unsatisfactory alignment and channel conditions are developing. Revetment serves a three-fold purpose in that the river is prevented from encroaching on the Main Stem levees, excess material is kept out of the stream, and a favorable channel alignment and depth are maintained. An objective of the plan is to preserve favorable alignments and efficient cross-sectional areas and to prevent the river from creating new meander patterns. In wide reaches of the river, dikes are used to contract the channel width so as to produce a single efficient channel for navigation and to insure the flood carrying capacity of the river. Chutes and secondary channels are controlled for the same purpose. Improvement dredging is employed to assist the river in removing natural obstructions which deflect the current into undesirable patterns of flow and to assist in developing an efficient channel. Foreshore protection is utilized to preserve the integrity of the Mississippi River Levees from attack by erosion of the batture. Erosion of the batture leads to steep slopes which, when undermined, result in considerable loss of batture and possible failure of the levee.

The value of lands and improvements protected by the Main Stem System authorized works against the design flood is \$159.4 billion in 2005 dollars. This consists of 226,000 residential acres which include the City of New Orleans, 45,000 acres of commercial lands, 10 million acres of agricultural lands, and 6.5 million acres of woodland and marshland. The area subject to flooding by project flood assuming no protective works is 22.7 million acres. The area that will be provided complete protection by the completed project is 15.1 million acres.

The maximum flood of record was the 1927 flood which overflowed about 26,000 square miles, caused the deaths of 214 people, rendered 637,000 people temporarily homeless, and caused property damages of \$347.0 million. This would be equivalent to \$12.0 billion in damages in 2006 prices.

The next flood of magnitude was the 1973 flood which overflowed 16,875 square miles (10.8 million acres), caused the death of 28 people, and displaced approximately 45,300 persons. The deaths and displacements of persons would have been significantly higher without the project in place. Without Federal projects, approximately 19.8 million acres would have been inundated. Total damages with existing projects in operation were \$643 million (1973 price levels). Damages without projects would have been \$12.1 billion and total damages prevented by projects amounted to \$11.3 billion. Expressed in 2006 prices, damages without the projects would have been \$43.5 billion and damages prevented would have been \$40.8 billion.

The benefit-cost ratio was derived by measuring the total benefits credited to those Main Stem components against their total cost. Average annual benefits for the composite of Main Stem features are as follows:

Annual Benefits	Amount @ 2.5 %	Amount @ 7%
Flood Control	\$ 1,372,231,000	\$ 470,224,000
Navigation	291,680,000	132,965,000
Area Redevelopment	2,480,000	1,208,000
Recreation	3,433,000	3,234,000
Total	\$ 1,669,824,000	\$ 607,631,000

FISCAL YEAR 2007: Current funds are being used as follows:

Revetments	\$ 26,117,000
Dikes	16,975,000
Total	\$ 43,092,000

Revetments: The planned program consists of items of work for which funds will be required as follows:

Lands and Damages	\$ 128,000
Construction of Revetments	19,300,000
Cultural Resources	65,000
Planning, Engineering, and Design	5,914,000
Construction Management	710,000
Total	\$ 26,117,000

The items of revetment work are:

Approximate length in feet:

Hickman Bar, KY	800
Obin-Tamm, TN	1,200
Ensley, TN	1,440
Norfolk Star, MS	1,280
Heloise, TN	432
Richardson Landing, TN	288
Cedar Point, Densford, TN	182
Scrubgrass, MS	264
Racetrack, MS	1,500
Bougere, LA	1,750
Refuge, AR	1,500
Lake Concordia, MS	3,000
Reinforcement	9,780

Dikes: The planned dike work consists of the following items:

Randolph, TN	\$ 3,690,000
Lower Bullerton, AR	2,130,000
Ben Lomand, MS	277,000
Below Yellow Bend, AR	1,694,000
Island 84, AR	1,521,000
Tarpley Island, MS	3,221,000
Arbroth, LA	450,000
Grand Bay, LA	405,000
Springfield, LA	303,000
Lands and Damages	72,000
Cultural Resources	45,000
Planning, Engineering, and Design	1,852,000
Construction Management	1,315,000
Total	\$16,975,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Revetments	\$ 41,775,000
Dikes	11,620,000
Total	\$ 53,395,000

The items of revetment work are:

Approximate length in feet:

Norfolk Star, MS	200
Hickman Bar, KY	300
Ensley, TN	360
Obion-Tamm, TN	320
Merriwether-Cherokee, TN	1,760
Wickliffe, KY	1,440
Wolf Island, KY	2,160
Racetrack, MS	1,500
Gold Bottom, LA	1,500
Lake Concordia, MS	4,250
Reinforcement	9,500

Revetments: The planned program consists of items of work for which funds will be required as follows:

Lands and Damages	\$ 98,000
Construction of Revetments	34,563,000
Cultural Resources	60,000
Planning, Engineering, and Design	6,229,000
Construction Management	825,000
Total	\$41,775,000

Dikes: The planned dike work consists of the following items:

Initiate and Complete:	
Loosahatchie, TN	\$ 718,000
Bend of Island 25, TN	2,500,000
Tarpley Cutoff, MS	1,610,000
Bondurant, LA	1,566,000
Opp Wamicott Landing, MS	2,050,000
Springfield, LA	441,000
Lands and Damages	47,000
Cultural Resources	30,000
Planning, Engineering, and Design	1,880,000
Construction Management	778,000
Total	\$11,620,000

NON-FEDERAL COST: In accordance with Section 4 of the Flood Control Act of 1944, as amended by Section 207 of the Flood Control Act of 1962, the non-Federal sponsor must comply with the requirements listed below:

	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation and Replacement Costs
Requirements of Local Cooperation		
Provide lands, easements, rights-of-way, and borrow and excavated or dredged material disposal area.	\$ 100,000	
Pay one-half of the separable costs allocated to recreation (except recreational navigation) and bear all costs of operation, maintenance, and replacement of recreation facilities.	1,800,000	\$ 191,667
Total Non-Federal Costs	\$ 1,900,000	\$ 191,667

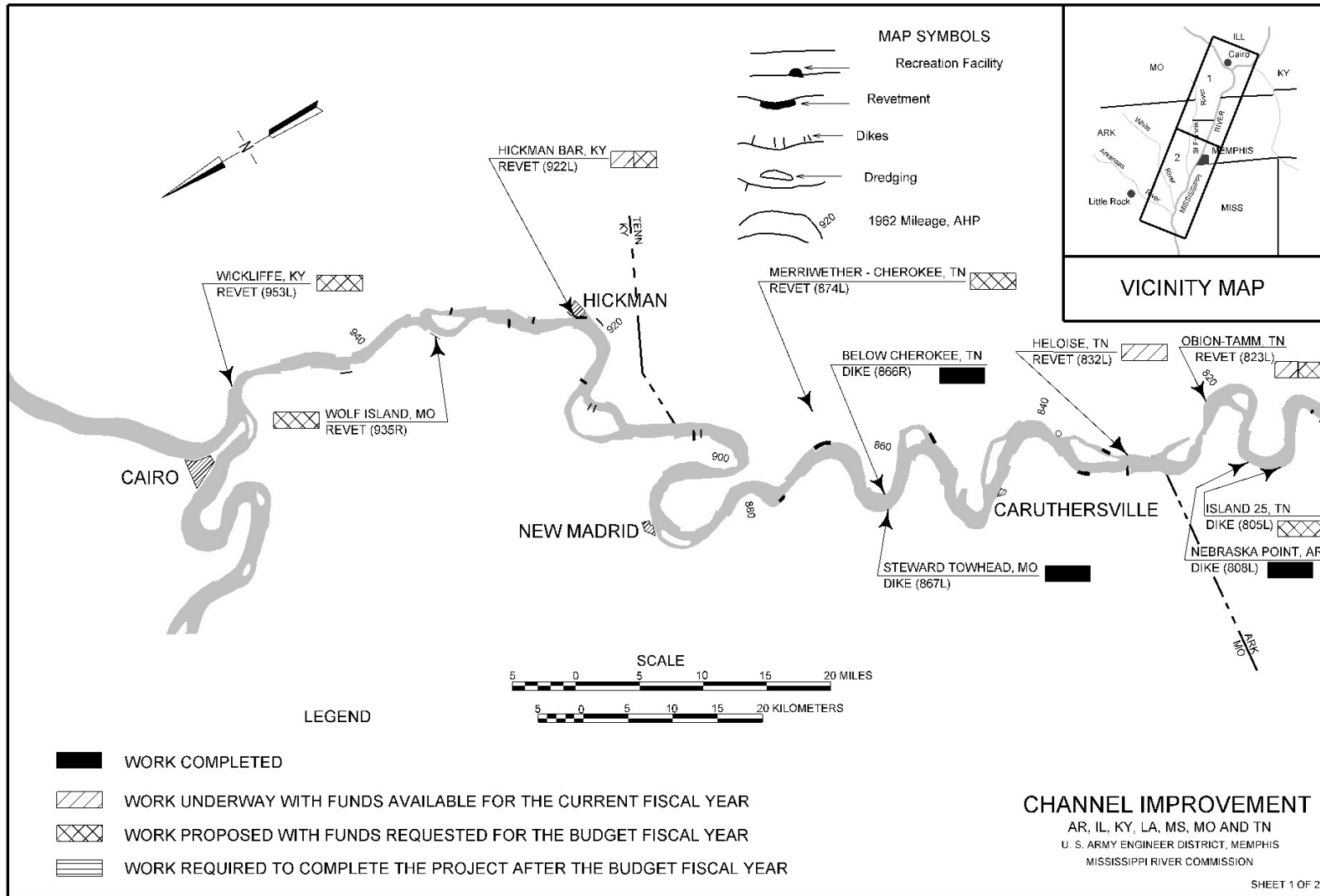
STATUS OF LOCAL COOPERATION: Assurances furnished by the Missouri Department of Conservation for the Dorena Recreation Facility were accepted 27 August 1971; assurances furnished by the Tennessee Department of Conservation for the Richardson Landing Recreation Facility were accepted 3 September 1976; and assurances furnished by the City of Memphis, Tennessee, for Volunteer Bicentennial Park were accepted 11 September 1975. Assurances furnished by the City of Osceola, Arkansas, for Lake Neark, Arkansas, are embodied in the contract for cost sharing approved on 19 September 1982. A Local Cooperation Agreement for the Ed Jones Boat Ramp with the State of Tennessee was signed 27 October 1988. A Local Cooperation Agreement for the Shelby Forest Boat Ramp with the State of Tennessee was signed 11 October 1990. A Local Cooperation Agreement for the Dyersburg, Tennessee, Boat Ramp with the State of Tennessee was signed 11 July 1994.

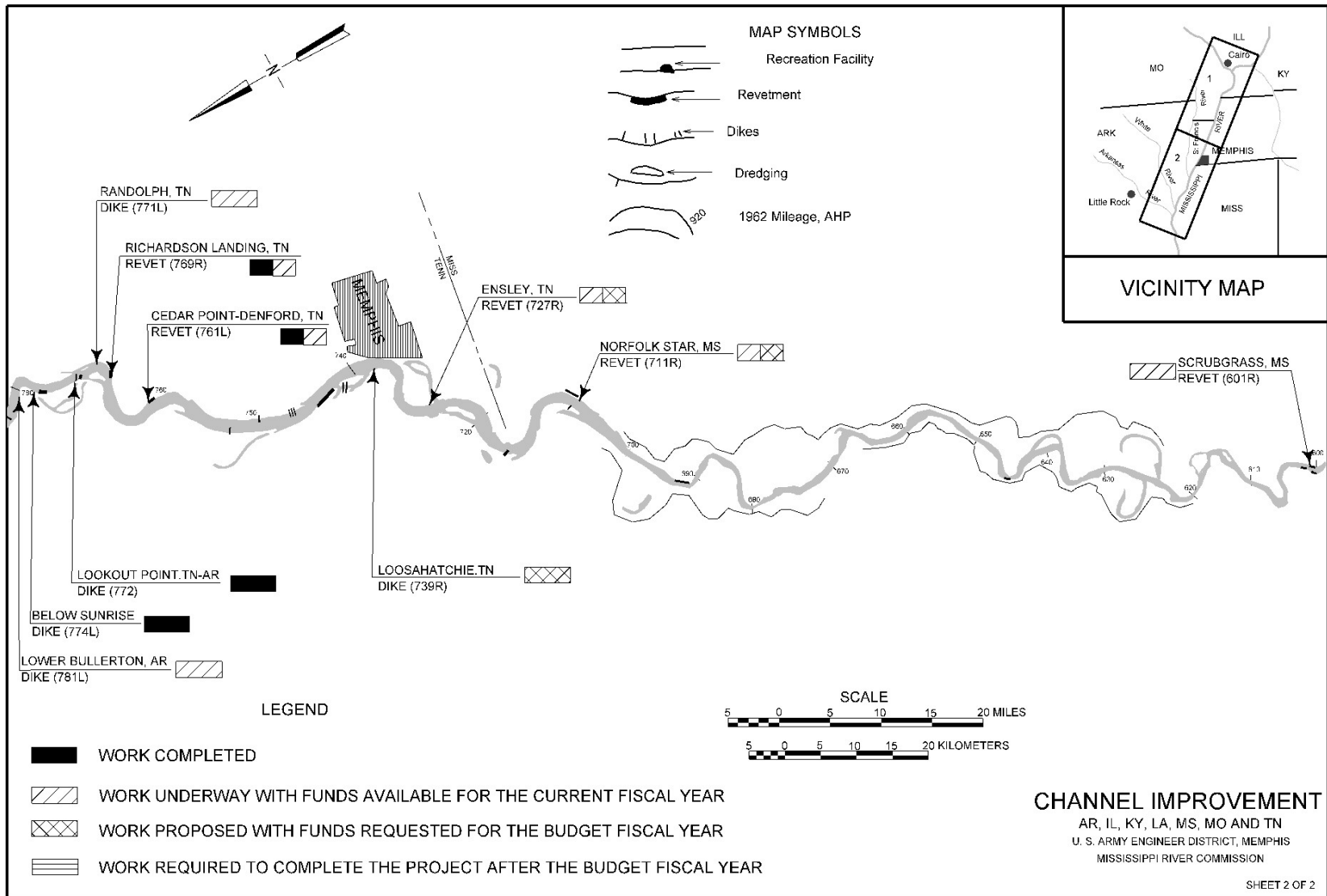
COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$3,985,000,000 is a decrease of \$10,000,000 from the latest estimate (\$3,995,000,000) presented to Congress (FY 2007). This change includes the following items:

Item	Amount
Price Escalation on Construction Features	\$ - 9,219,000
Post Contract Award and Other Estimating Adjustments	- 757,000
Price Escalation on Real Estate	- 24,000
Total	\$ -10,000,000

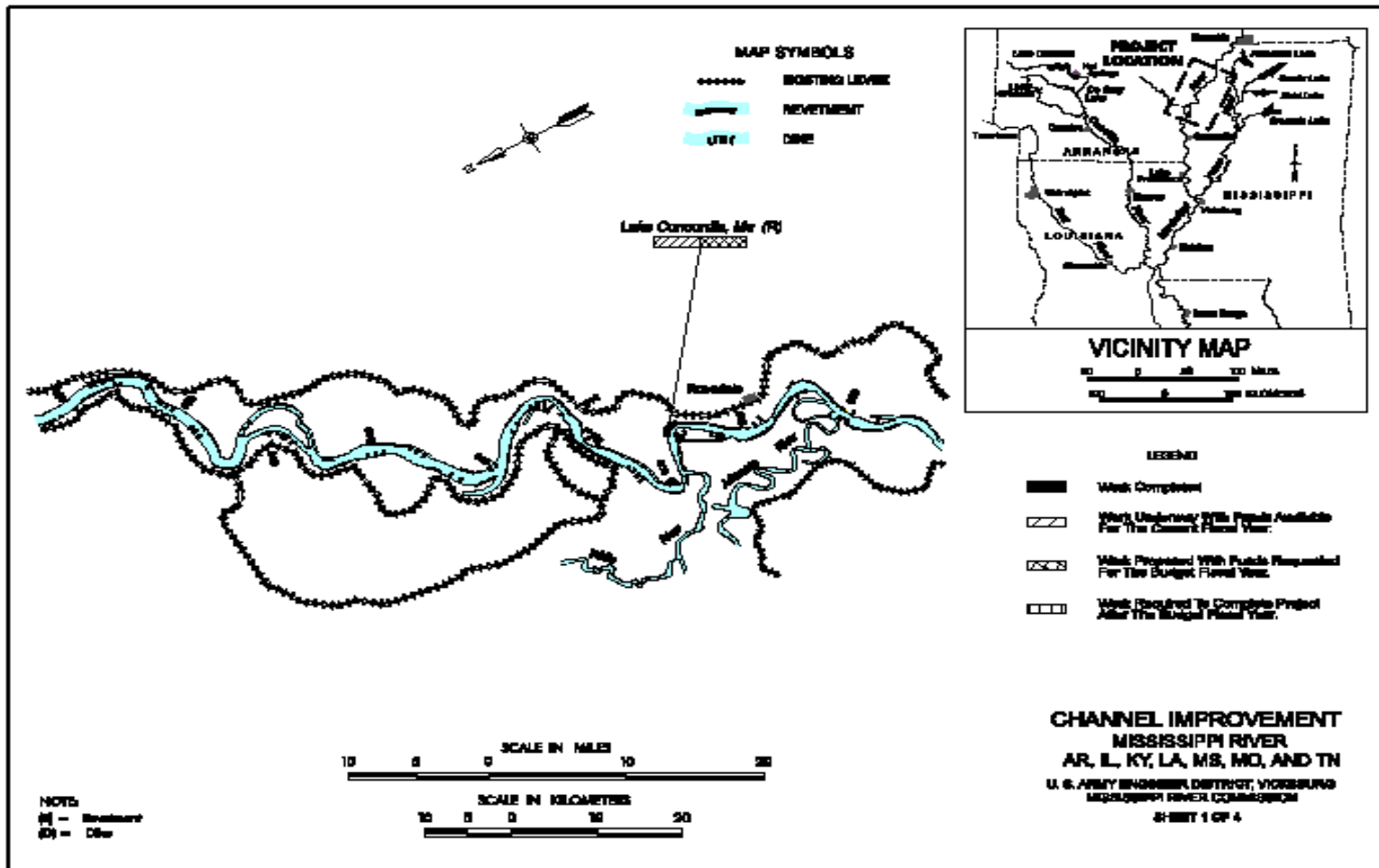
STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Final Environmental Impact Statement was filed with the Council on Environmental Quality on 16 April 1976.

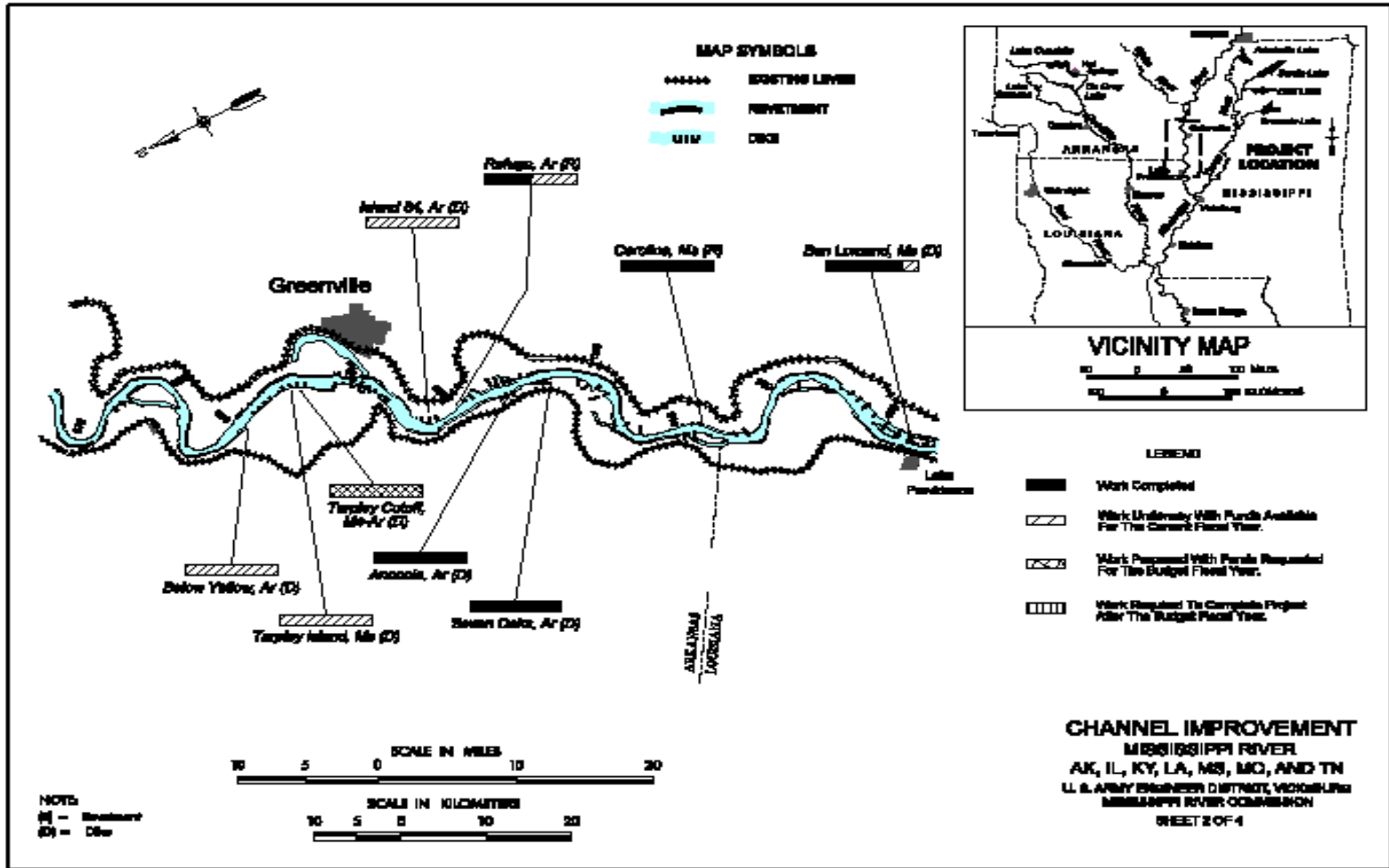
OTHER INFORMATION: Initial construction funds were appropriated in Fiscal Year 1928.

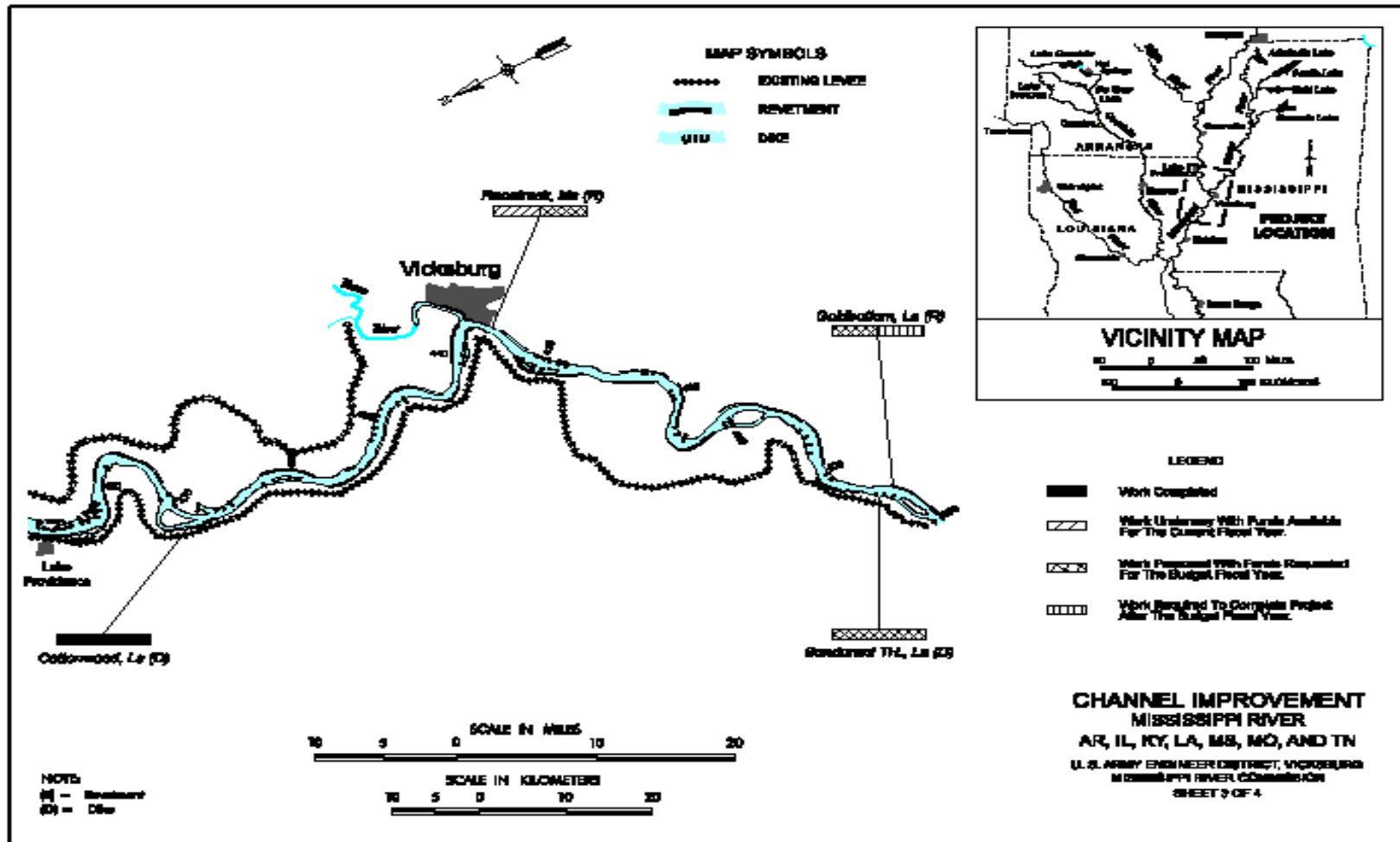


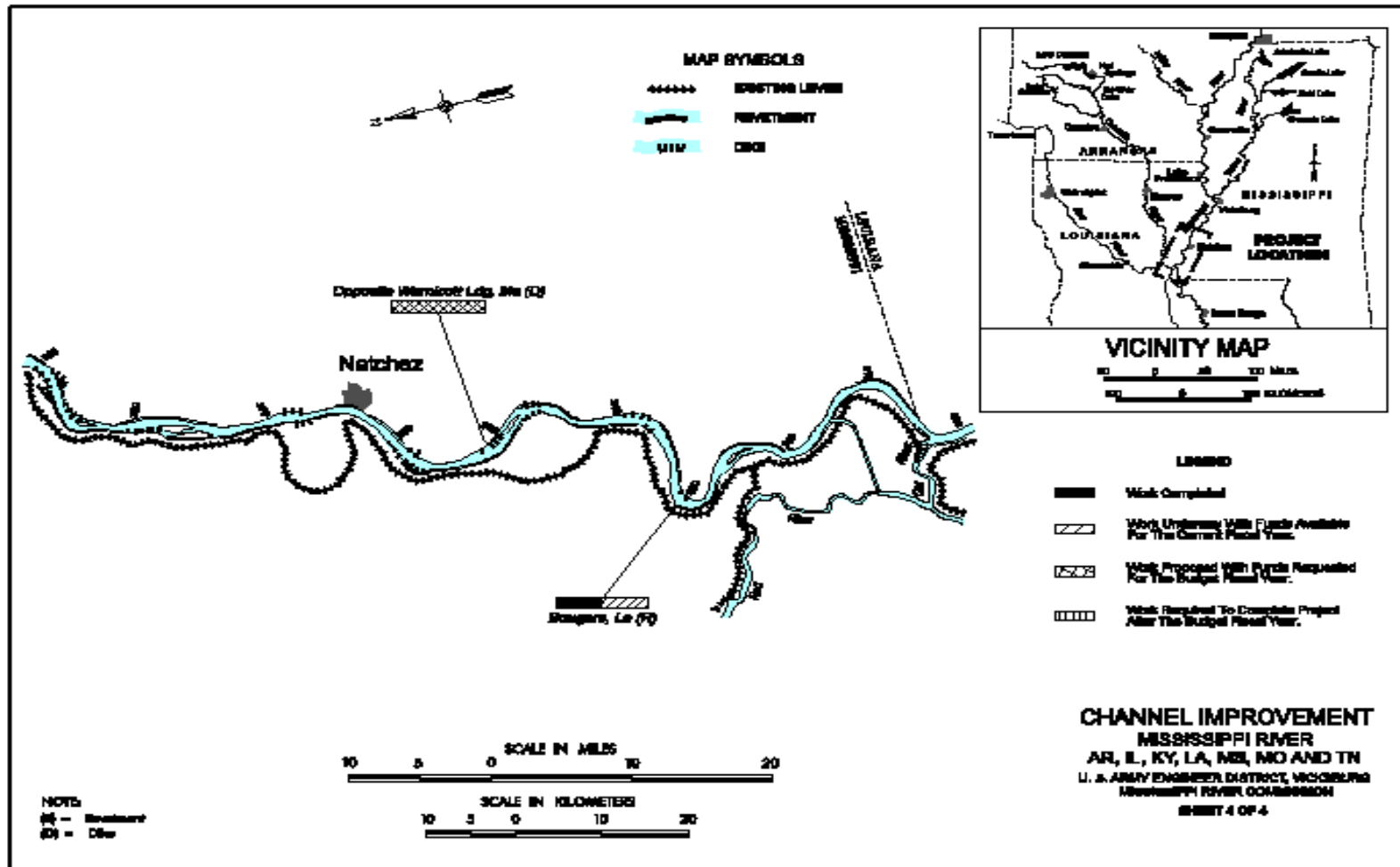


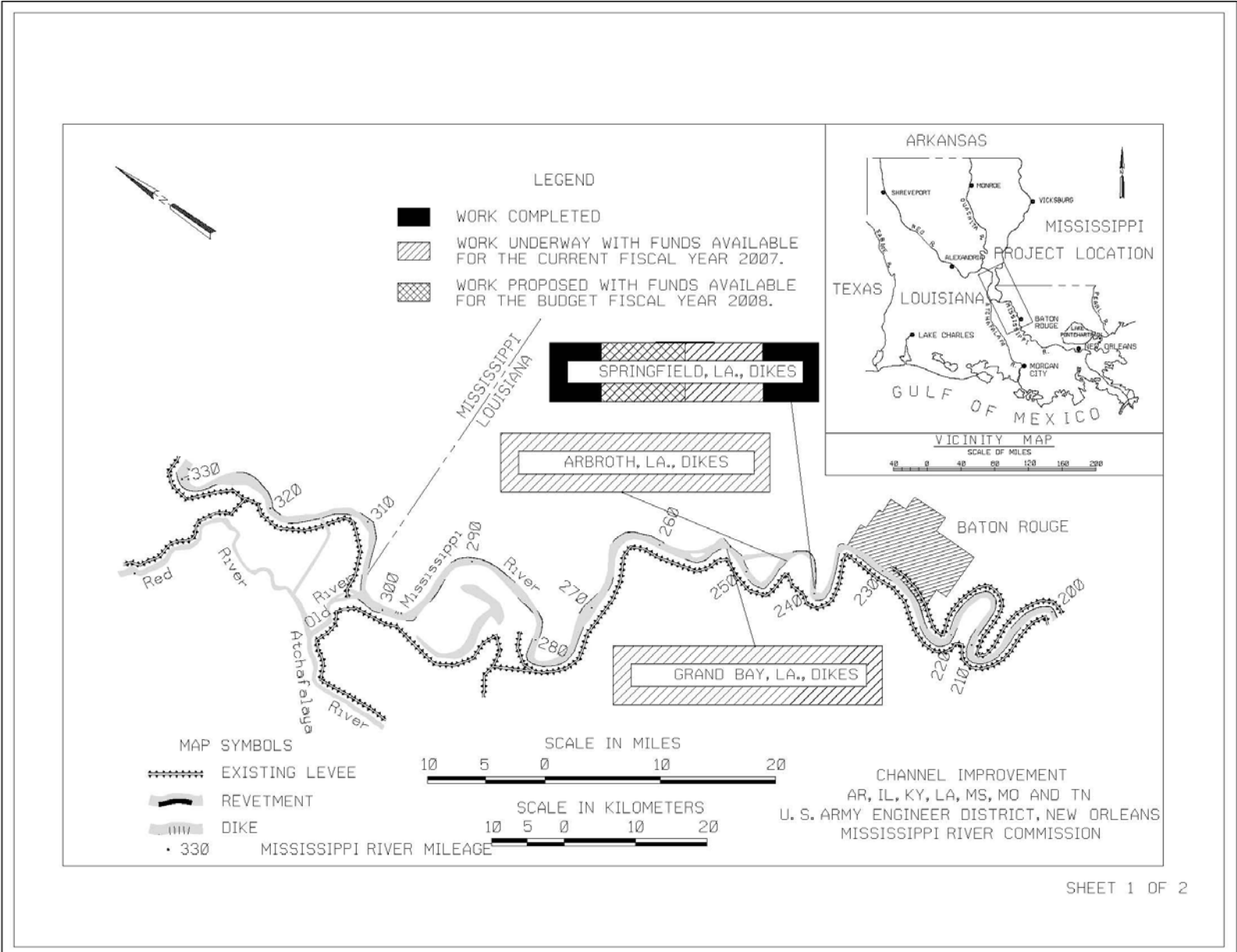




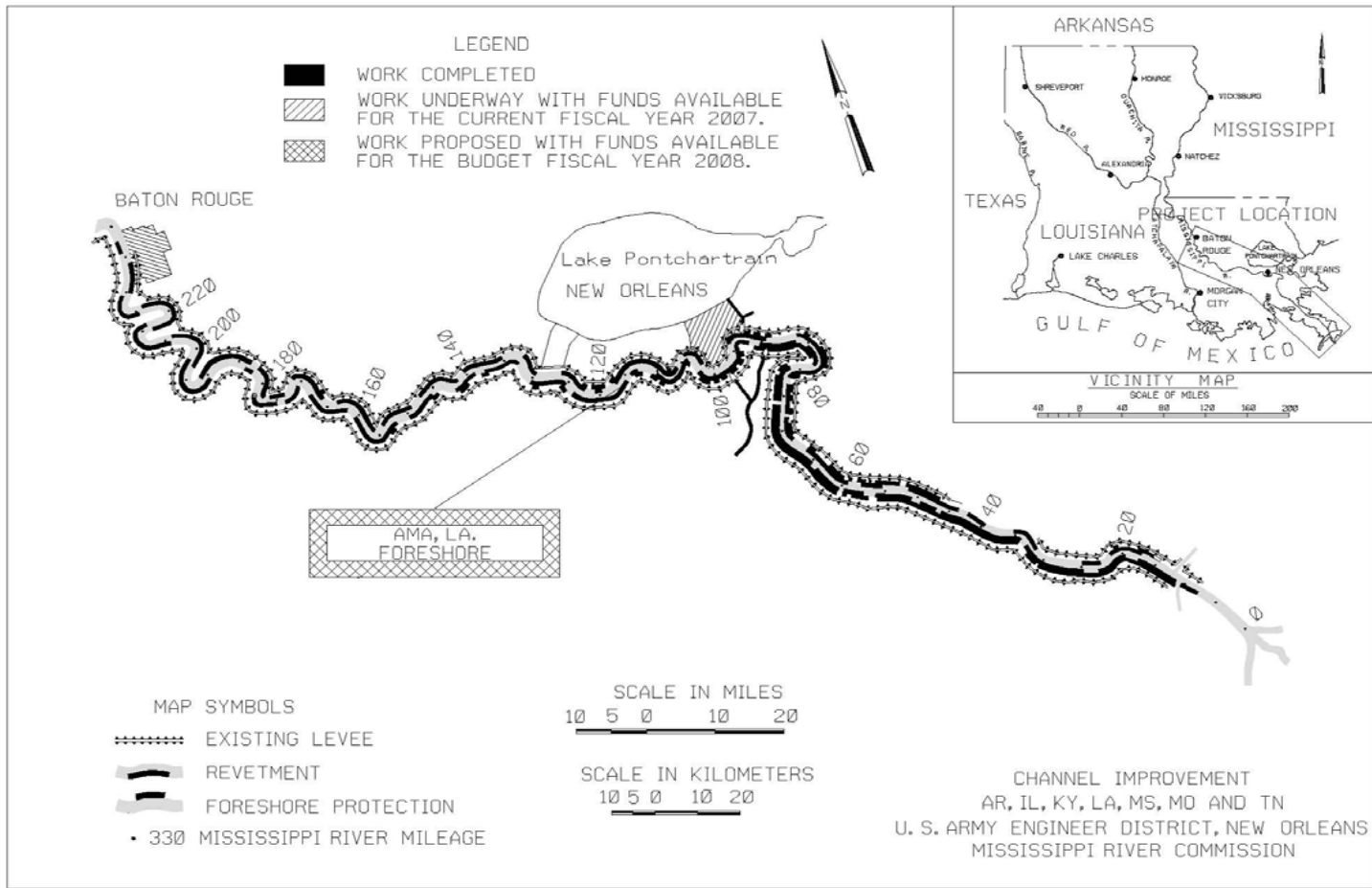








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APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, TN - Construction

PROJECT: Mississippi River Levees, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri and Tennessee (Continuing)

LOCATION: The Mississippi River Levee system on the west bank extends from Allenville, Missouri, on the Little River Diversion Channel generally southward to the vicinity of Venice, Louisiana, and on the east bank from Hickman, Kentucky, to opposite Venice, Louisiana, except where interrupted by hills and tributary streams. Included in the system are the levees which protect Mounds, Mound City and Cairo, Illinois, and the New Madrid Levee and Floodway.

DESCRIPTION: The plan of improvement provides for raising, strengthening, and in some cases, extending existing levees to provide protection against the project flood. This feature includes 1,519.5 miles of levees and 14.8 miles of floodwall. All work is programmed.

AUTHORIZATION: Flood Control Acts of 1928, 1936, 1938, 1941, 1946, 1950, 1954, 1962, 1965, 1968, and PL 92-222.

REMAINING BENEFIT-REMAINING COST RATIO: 40.6 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 3.8 to 1 at 7 percent. The benefit-cost ratio is based on all features which comprise the Main Stem system of the Mississippi River and Tributaries project.

INITIAL BENEFIT-COST RATIO: This project feature of the Main Stem system was authorized in Fiscal Year 1928 and initial construction funds were provided in Fiscal Year 1928. The authorized comprehensive review of the Mississippi River and Tributaries project, contained in House Document 308/88/2, as updated to reflect 1965 conditions and price levels, is considered to be the base estimate for the Main Stem system. The benefit-cost ratio for the Main Stem components computed for the base estimate was 7.9 to 1.

BASIS OF BENEFIT-COST RATIO: Benefits are from the latest available evaluation approved in October 1979 at 1979 price levels. The last comprehensive analysis was conducted in 1974. The 1979 analysis is the same as the 1974 analysis except that certain undocumented benefit categories were eliminated and 1979 prices were used.

SUMMARIZED FINANCIAL DATA		ACCUM PCT OF EST FED COST	STATUS (1 January 2007)	PCT CMPL	PHYSICAL COMPLETION SCHEDULE
Estimated Total Appropriation Requirement	\$2,089,674,000		Entire Project	93	TBD
Future Non-Federal Reimbursement	674,000				
Estimated Federal Cost (Ultimate)	2,089,000,000				PHYSICAL DATA
Estimated Non-Federal Cost	\$ 83,826,000		Channel and Canals		72 miles
Cash Contributions	\$ 2,466,000		Levees:		
Other Costs	80,686,000		Average Height		20-35 feet
Reimbursement	674,000		Length		1,519.5 miles
Recreation Facilities	\$674,000		Floodwalls:		
			Average Height		14-23 feet
Total Estimated Project Cost	\$2,172,826,000		Length		14.8 miles
Allocations to 30 September 2004	\$ 1,056,299,000		Levee Berms		629.3 miles
Allocation for FY 2005	44,651,000		Levee Roads		1,500.0 miles
Allocation for FY 2006	62,764,000		Pumping Stations		5
Conference Allowance for FY 2007	40,756,000				
Allocation for FY 2007	40,756,000 *				
Allocations to 30 September 2007	1,204,470,000	58			
Allocation Requested for FY 2008	28,767,000	59			
Programmed Balance to Complete After FY 2008	855,763,000				
Unprogrammed Balance to Complete After FY 2008	0				

\* Assumed allocation. Final, actual allocations yet to be determined.



JUSTIFICATION: The Mississippi River Levee system is one of several Main Stem components, which together comprise the plan of improvement for the control of floods on the Mississippi River. The components are: Mississippi River Levees, Channel Improvement, South Bank Arkansas and South Bank Red River Levees, the Atchafalaya Basin, Atchafalaya Basin Floodway System, Old River and a few miscellaneous items. Because the benefits of the Mississippi River Levees derive from the way in which they operate together with the other Main Stem components when the Mississippi River floods, the benefit-cost ratio is a composite one that covers the entire plan.

The Mississippi River Levee System provides protection to 23,620 square miles and partial protection to an additional 3,780 square miles in the alluvial valley subject to flooding by the project flood. The alluvial valley is over 650 miles long and varies in width from 20 to 90 miles. Numerous railroads, highways, and airfields connecting the major transportation centers lie within the protected area as do several major transcontinental communication routes. In addition to highly developed agricultural areas, the levees afford protection to urban areas and many industries.

The value of lands and improvements protected by authorized works against the design flood is \$159.4 billion in 2005 dollars. This consists of 226,000 residential acres which include the City of New Orleans, 45,000 acres of commercial lands, 10 million acres of agricultural lands, and 6.5 million acres of woodland and marshland. The area subject to flooding by the project flood assuming no protective works is 22.7 million acres. The area that will be provided complete protection by the completed project is 15.1 million acres.

The maximum flood of record was the 1927 flood which overflowed about 26,000 square miles, caused the deaths of 214 people, rendered 637,000 people temporarily homeless, and caused property damages of \$347.0 million. This would be equivalent to \$12.0 billion damages in 2006 prices.

The next flood of magnitude was the 1973 flood which overflowed 16,875 square miles (10.8 million acres), caused the death of 28 people, and displaced approximately 45,300 persons. The deaths and displacements of persons would have been significantly higher without the Federal projects in place. Without the Federal projects, approximately 19.8 million acres would have been inundated. Total damages with existing projects in operation were \$643 million (1973 price levels). Damages without projects would have been \$12.1 billion and total damages prevented by projects amounted to \$11.3 billion. Expressed in 2006 prices, damages without the projects would have been \$43.5 billion and damages prevented would have been \$40.8 billion.

The benefit-cost ratio was derived by measuring the total benefits credited to those Main Stem components against their total cost. Average annual benefits for the composite of Main Stem features are as follows:

Annual Benefits	Amount @ 2.5%	Amount @ 7%
Flood Control	\$1,372,231,000	\$470,224,000
Navigation	291,680,000	132,965,000
Area Redevelopment	2,480,000	1,208,000
Recreation	3,433,000	3,234,000
Total	\$1,669,824,000	\$607,631,000

FISCAL YEAR 2007: Current funds are being used as follows:

Lands and Damages	\$7,000,000
Cultural Resources Preservation	100,000
Surveys & Layouts	123,000
Cairo, IL P-4 Slurry Trench	3,523,000
Baders-Cottonwood Point, MO Relief Wells	1,700,000
Farrell, MS Relief Wells	1,463,000
Carlisle-Tallula, MS, Item 488-L	2,849,000
Willow Point-Youngs Point, LA, Item 450-R	1,883,000
Willow Point-Youngs Point, LA Item 445-R	5,385,000
Fifth LA Levee District	741,000
Hermitage Seepage Control	1,200,000
Gretna to Point Celeste Ph 1	3,378,000
Lower Mississippi River Museum and Riverfront Interp Site	2,500,000
Planning, Engineering and Design	6,021,000
Supervision and Administration	2,890,000
Total	\$40,756,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue:

Lands and Damages	\$ 350,000
Relocations	2,900,000

Initiate and Complete:

Caruthersville, MO Relief Well	600,000
Council Bend, AR Relief Well	450,000
West Memphis, AR Relief Wells	450,000
Gammon, AR, Relief Wells	150,000
Delta, MS, Relief Wells	1,500,000
Reid Bedford-King, Item 424-R	3,587,000
Jefferson Heights Levee Enlargement	692,000
Gretna to Point Celeste Ph 2	2,961,000
Slope Paving	400,000
Datum Adjustment	225,000
Surveys and Layouts	125,000

Complete:

Willow Point-Youngs Point, LA, Item 450-R	930,000
Willow Point-Youngs Point, LA, Item 445-R	1,170,000
Tallula-Magna Vista, MS, Item 474-L	6,254,000

Planning, Engineering and Design  
Construction Management

3,414,000  
2,609,000

Total

\$28,767,000

NON-FEDERAL COST: In accordance with the Flood Control Acts of 1928, 1936, 1938, 1941, 1946, 1950, 1954, 1962, 1965, 1968 and PL 92-222, the non-Federal sponsor must comply with the requirements listed below:

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation and Replacement Costs
Provide lands, easements, rights-of-way, and borrow and excavated or dredged material disposal areas.	\$80,364,000	
Minor maintenance of all flood control works after their completion, except controlling a regulating spillway structures, including special relief levees; maintenance includes normally such matters as cutting grass, removal of weeds, local drainage and minor repairs to mainline river levees.		\$637,000
Pay one-half of the separable costs allocated to recreation (except recreational navigation) and bear all costs of operation, maintenance, repair, rehabilitation and replacement of recreation facilities.	3,140,000	0
Other (levee and revetment construction)	322,000	
Total Non-Federal Costs	\$83,826,000	\$637,000

STATUS OF LOCAL COOPERATION: It is estimated that local interests had spent approximately \$292,000,000 for flood protection prior to the Act of 15 May 1928. After passage of the Act, the 37 levee districts along the Mississippi River adopted resolutions assuring the United States that the requirements of local cooperation will be met. These local interests have acquired all rights-of-way for work completed and underway and will try to provide the rights-of-way for work scheduled for Fiscal Year 2007. Some levee boards are having difficulty in providing right-of-way when requested, even for construction work in areas where the existing levees are farthest below the authorized grade. Supplemental assurances covering the requirements of the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970 (PL 91-646) have been accepted for Main Stem Mississippi River Levees in Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee.

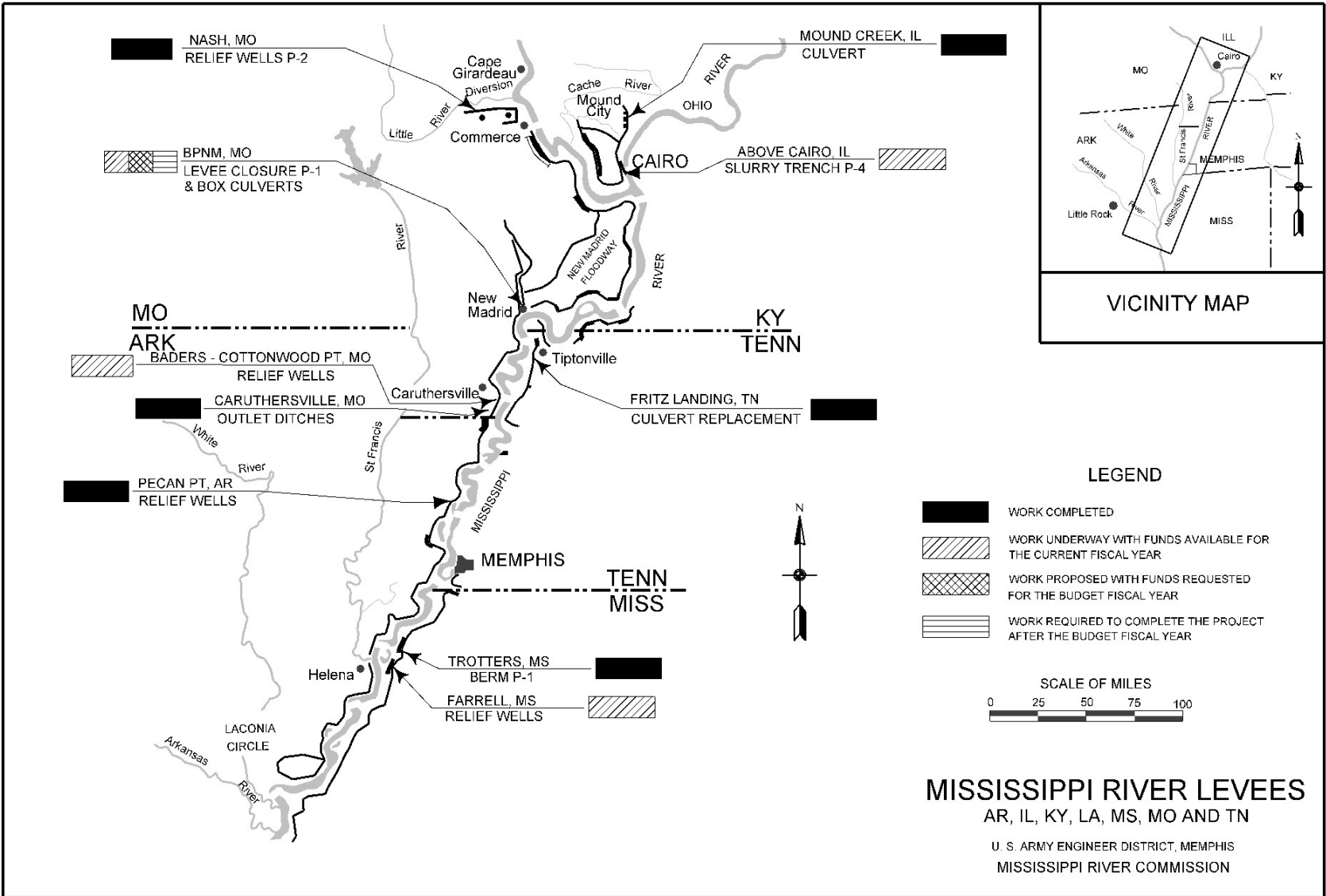
Assurances of local cooperation for the recreation facilities at Warfield Point, Mississippi, were accepted on 14 October 1969. Supplemental assurances covering the River and Harbor Act of 1970 (PL 91-611) and PL 91-646 were accepted 7 August 1972. Assurances have not as yet been requested for the recreation facilities at Mississippi River State Park, Arkansas.

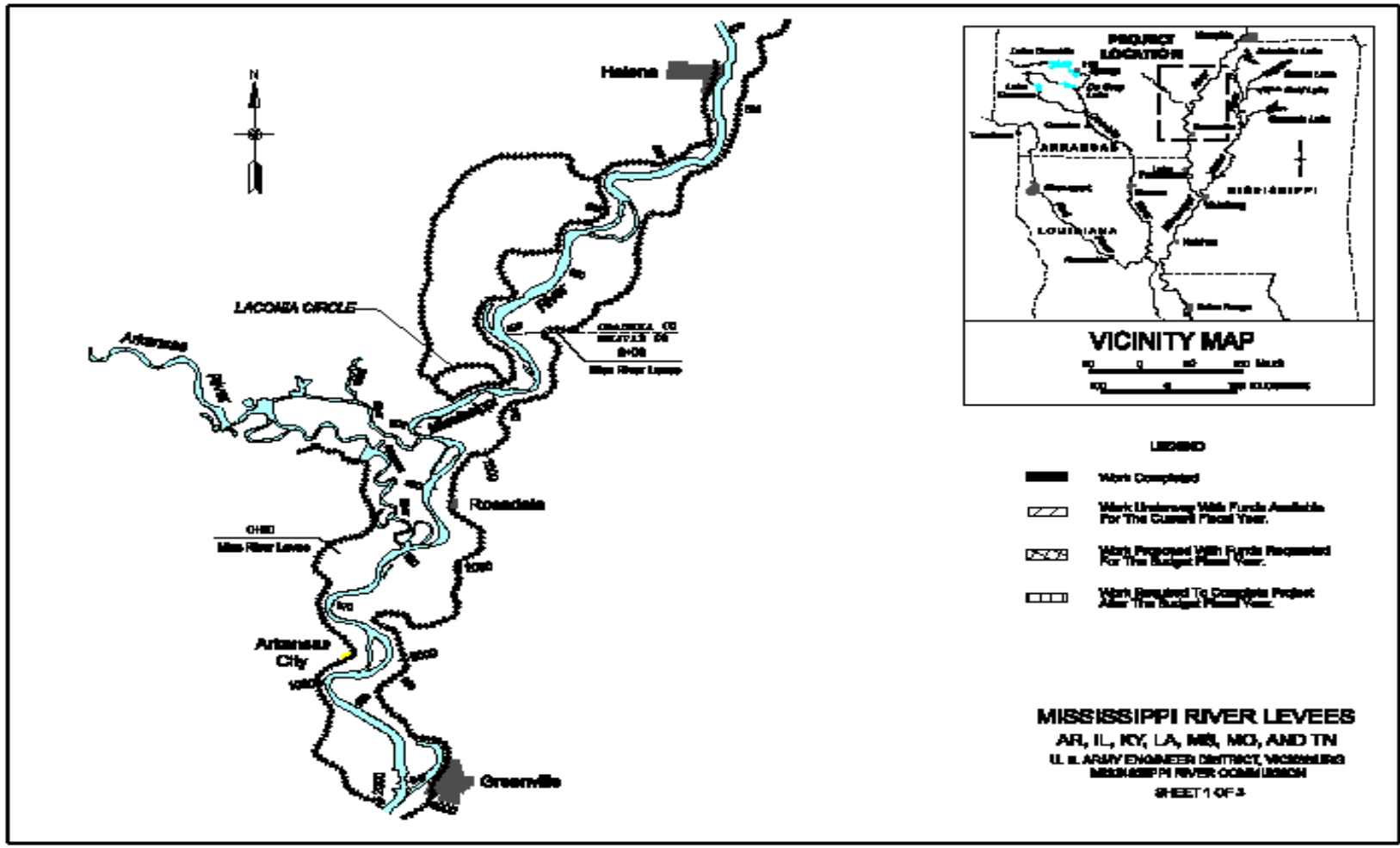
COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$2,089,000,000 is an increase of \$13,000,000 from the latest estimate (\$2,076,000,000) presented to Congress (FY 2007). This change includes the following items:

Item	Amount
Price Escalation on Construction Features	2,807,000
Post Contract Award and Other Estimating Adjustments	8,271,000
Price Escalation on Real Estate	1,922,000
Total	\$ 13,000,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Final Environmental Impact Statement was filed with the Council on Environmental Quality on 16 April 1976. A Supplemental Environmental Impact Statement for the project was completed and the Record of Decision was signed on 5 October 1998. The adequacy of the Supplemental Environmental Impact Statement was challenged but upheld by the United States District Court for the Eastern District of Louisiana. The Fifth Circuit Court of Appeals on October 23, 2000, affirmed the district court's grant of summary judgment to the Government.

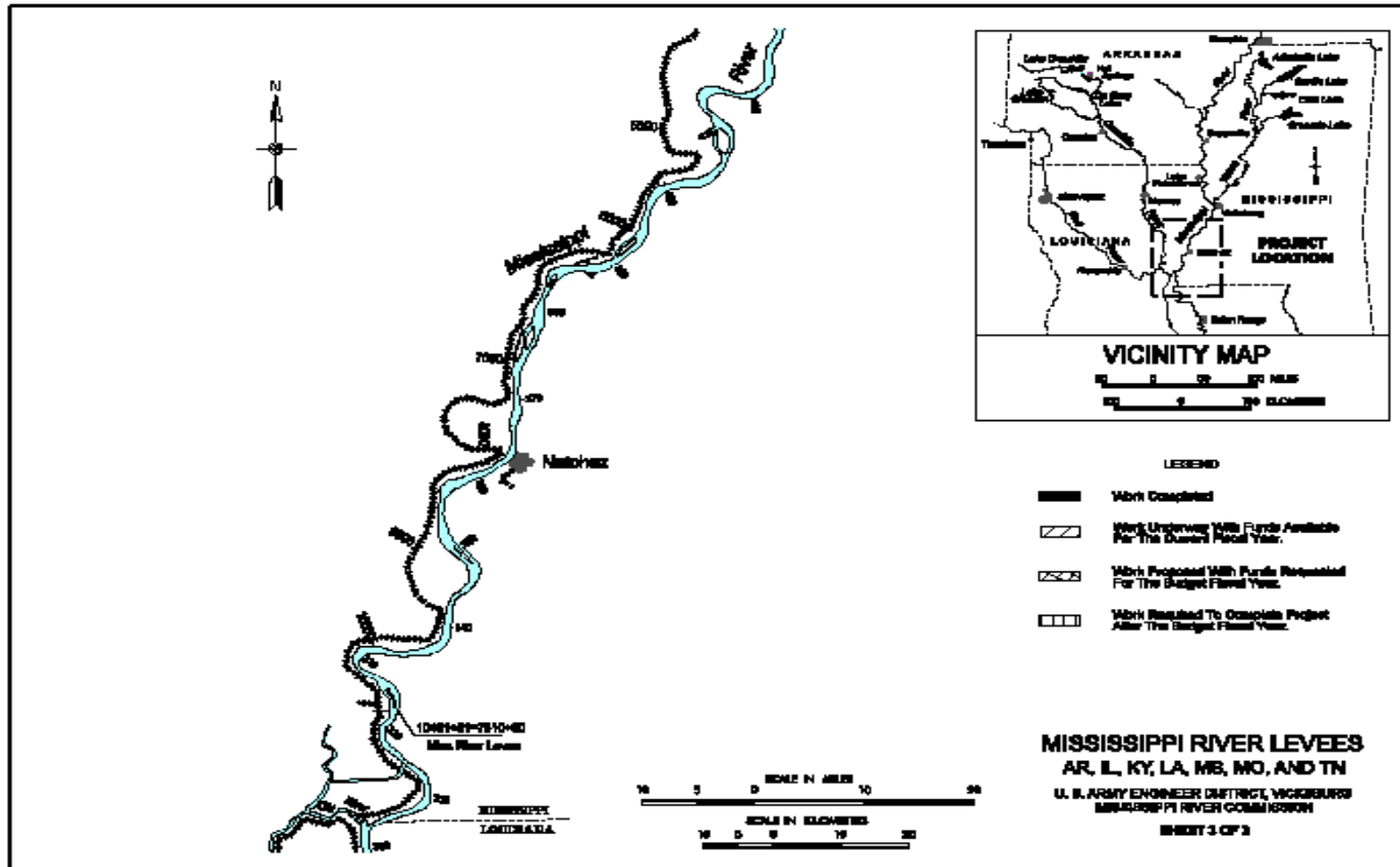
OTHER INFORMATION: Initial construction funds were appropriated in Fiscal Year 1928.

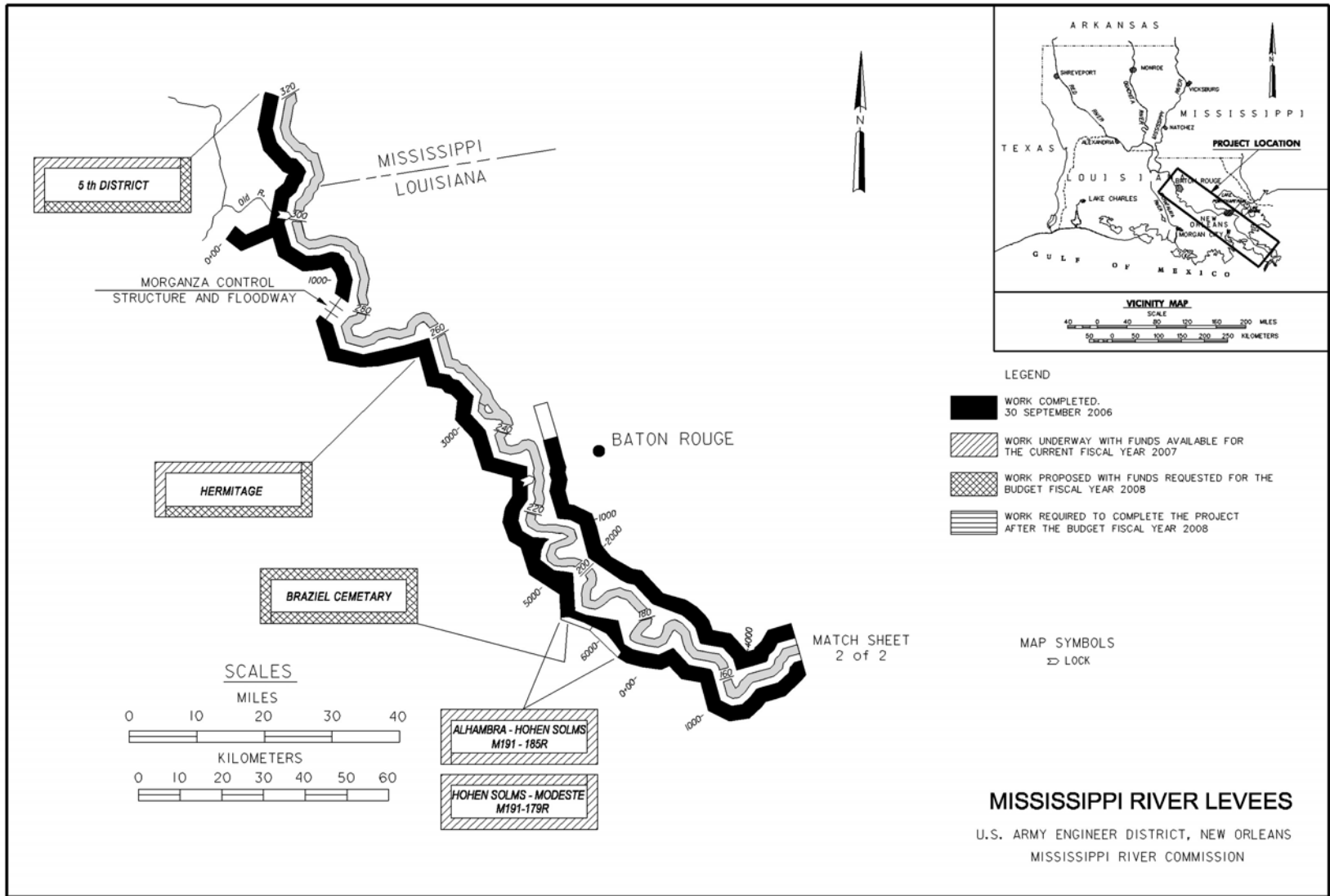




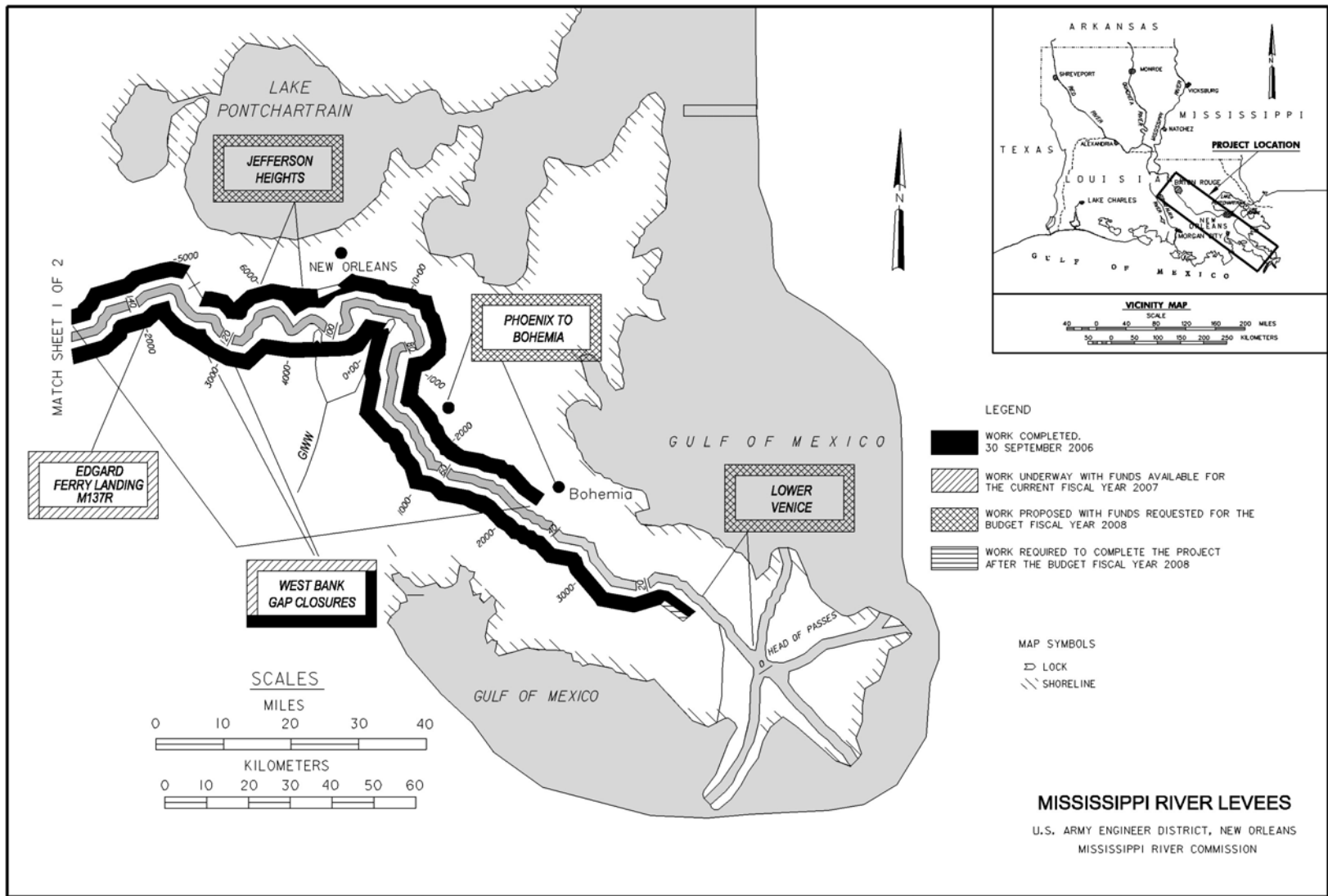








SHEET 1 OF 2



SHEET 2 OF 2

FLOOD AND COASTAL STORM DAMAGE REDUCTION  
CONSTRUCTION  
CONTINUING AUTHORITIES PROGRAM

APPROPRIATION TITLE: Construction, FY 2008

**Emergency Streambank and Shoreline Protection (CAP Section 14)**

Appropriation for FY 2007	\$14,850,000*
Allocation Requested for FY 2008	\$907,000

GENERAL: Section 14 of the Flood Control Act of 1946 (PL 79-526), as amended, authorizes up to \$15,000,000 annually for the construction of emergency bank protection works to prevent flood damages to highways, bridge approaches, public works, churches, hospitals, schools, and other non-profit public services. Each project selected must be economically justified and complete within itself. Federal participation under this authority is limited to a cost of not more than \$1,000,000 at any single locality.

PROPOSED ACTIVITIES FOR FY 2008: Proposed allocations are as follows:

SECTION 14 PROJECT OR ACTIVITY	AMOUNT
KWETHLUK, AK	100,000
TALLAHATCHIE RIVER, SITE 3 , TALLAHATCHIE COUNTY, MS	621,000
Section 14 Coordination Account	186,000
Section 14 Total	\$907,000

\* Assumed allocation. Final, actual allocations yet to be determined.

APPROPRIATION TITLE: Construction, FY 2008

**Shore Protection Projects (CAP Section 103)**

SUMMARIZED FINANCIAL DATA:

Appropriation for FY 2007	\$6,930,000*
Allocation Requested for FY 2008	\$422,000

GENERAL: Section 103 of the River and Harbor Act of 1962 (PL 87-874), as amended, authorizes up to \$30,000,000 annually for development and construction of hurricane and storm damage protection measures along the Nation's shorelines where not already specifically authorized by Congress. Projects under this authority are formulated to provide the same complete project and degree of protection provided under regular authorization procedures. Each project selected must be economically justified and complete within itself. Federal cost participation is limited to \$3,000,000 per project..

PROPOSED ACTIVITIES FOR FY 2008: Proposed allocations are as follows:

<u>SECTION 103 PROJECT OR ACTIVITY</u>	<u>AMOUNT</u>
UNALAKLEET STORM DAMAGE REDUCTION, UNALAKLEET, AK	400,000
Section 103 Coordination Account	22,000
Section 103 Total	\$422,000

\* Assumed allocation. Final, actual allocations yet to be determined.

APPROPRIATION TITLE: Construction, FY 2008

**Flood Control (CAP Section 205)**

Appropriation for FY 2007	\$39,600,000*
Allocation Requested for FY 2008	\$11,716,000

GENERAL: Section 205 of the Flood Control Act of 1948 (PL 80-858), as amended, authorizes up to \$50,000,000 annually for construction of flood control projects where such construction is not already specifically authorized by Congress. Projects are designed to provide the same complete project and same degree of protection provided under regular authorization procedures. Each project selected must be economically justified and complete within itself. Federal cost participation is limited to \$7,000,000 per project at a single locality.

PROPOSED ACTIVITIES FOR FY 2008: Proposed allocations are as follows:

SECTION 205 PROJECT OR ACTIVITY	AMOUNT
BEAVER CREEK & TRIBS, BRISTOL, TN	800,000
CHIPPEWA RIVER AT MONTEVIDEO, MN	3,472,000
EAST PEORIA, IL	100,000
FARGO, RIDGEWOOD ADDITION, ND	1,720,000
HEACOCK CHANNEL, RIVERSIDE COUNTY, RIVERSIDE, CA	5,300,000
Section 205 Coordination Account	324,000
Section 205 Total	\$11,716,000

\* Assumed allocation. Final, actual allocations yet to be determined.

APPROPRIATION TITLE: Construction, FY 2008

**Snagging and Clearing for Flood Damage Reduction (CAP Section 208)**

SUMMARIZED FINANCIAL DATA:

Appropriation for FY 2007	\$297,000*
Allocation Requested for FY 2008	\$10,000

GENERAL: Section 208 of the Flood Control Act of 1954, as amended, authorizes measures to reduce nuisance flood damages caused by debris and minor shoaling of rivers. Work under this authority is limited to clearing and snagging or channel excavation and improvement with limited embankment construction by use of materials from the channel excavation. Projects implemented under this authority have the same project cost sharing requirements as structural flood damage reduction projects implemented under specific congressional authorization. The non-Federal sponsor is responsible for a minimum of 35 percent of total project costs to a maximum of 50 percent of total project costs during the design and implementation period. Federal cost participation is limited to \$500,000 per project.

PROPOSED ACTIVITIES FOR FY 2008: Proposed allocations are as follows:

<u>SECTION 208 PROJECT OR ACTIVITY</u>	<u>AMOUNT</u>
Section 208 Coordination Account	10,000
Section 208 Total	\$10,000

\* Assumed allocation. Final, actual allocations yet to be determined.



# FLOOD AND STORM DAMAGE REDUCTION

## REMAINING ITEMS

## INVESTIGATIONS

1. Surveys

c. Special Studies

Study	Total Estimated Federal Cost	Allocation Prior to FY 2007	Allocation FY 2007	Tentative Allocation FY 2008	Additional to Complete After FY 2008
National Inventory of Flood / Storm Damage Reduction Projects	TBD	30,000,000 1/	0	10,000,000	TBD

1/ Supplemental funding appropriated under PL 109-148 included an allocation of \$30 million in the flood Control and Coastal Emergencies account to initiate work on this effort.

SCOPE:

This is an interagency effort to improve management of the nation's flood and storm damage reduction infrastructure. Specifically, the Corps will coordinate with Federal Emergency Management Agency (FEMA) as well as non-Federal entities to conduct an inventory of the Nation's vast collection of flood and storm damage reduction structures to include Federally operated & maintained projects, Federally authorized locally operated & maintained projects and non-federal projects in the RIP; to create and populate a central database to house and maintain critical information on these structures and projects; and to complete development and test a methodology for assessing the structural and /or operational integrity and associated risk of these existing projects. The results of the national project inventory and risk-based project assessments will be linked to FEMA's ongoing flood mapping program as well as the Corps levee rehabilitation and inspection program, which is funded under the Flood Control and Coastal Emergencies account.

FY 2008 funding continues the study effort and builds upon work accomplished using 2006 emergency supplemental appropriations for this effort. The study will dovetail with continuing work under the National Dam Safety Program. Initial work will focus on levees and floodwalls, though eventually the inventory and methodologies will address all flood and coastal storm damage reduction projects.

JUSTIFICATION:

Using the Program Assessment Rating Tool, an assessment of the Corps Emergency management program determined that there exists a need for a comprehensive database for tracking the maintenance and performance of the Nation's flood and storm protection projects, many of which the Corps regularly inspects under its Rehabilitation and Inspection Program. This information is necessary to ensure flood/storm damage reduction projects perform well during flood and storm events and to improve state and local accountability for maintaining and repairing flood and storm protection projects.

To date, the Corps has constructed over 400 flood control reservoirs and over 9,000 miles of levee and flood wall systems in this country, which

account for only a portion of the total number of projects protecting communities across the Nation. Many of these structures protect highly urbanized areas, and all of them require continued maintenance (either by the Federal government or non-Federal interests) after construction in order to provide the intended level of protection.

Maintenance of completed levee/floodwall projects and systems is typically a non-Federal responsibility with oversight provided by the Corps Rehabilitation and Inspection Program. The Corps conducts periodic inspections of completed Federal and non-Federal flood control works and notifies appropriate parties of the results of such inspections. The Corps' inspections are designed to determine, from visual inspections, if proper maintenance has been accomplished and that there are no obvious deficiencies. They currently do not address hydrologic, hydraulic, or geotechnical issues or the risk associated with the projects conditions that may require more detailed investigations or analyses to insure safe reliable protection from flood risks to public safety.

Additionally, there may be insufficient communication of the results of these inspections to appropriate parties, such as the national Flood Insurance Program and FEMA's map modernization program, although the Corps has improved coordination with the latter recently. The need for improved inspections and communication of those inspection results is great, as the failure to maintain a levee/floodwall system in sound condition may result in withdrawal of certification that such systems meet the FEMA base-flood (100-year) - allowing property owners behind levees to avoid mandatory flood insurance purchase requirements. However, the analyses used to certify these levees may understate the true flood risk, if sufficient hydrologic, hydraulic and geotechnical factors are not evaluated.

There currently exists no single, comprehensive national database on these and other flood/storm damage reduction projects and their location, condition, owners/operators, and other factors relevant to the performance of these projects.

#### FY 2006 & 2007 Accomplishments:

FY 2006 funding initiated work on this study. The Fiscal Year 2006 and 2007 included initiation of the Geospatial inventory, population of the database with available information, collection of GIS data for all federally authorized projects, and development of an assessment methodology specific to levees and floodwalls. Additionally, USACE and FEMA worked collectively on issues such as residual risk communication and USACE inspection program revision and coordinated national effort for flood map modernization.

#### FY 2008 Activities:

Fiscal Year 2008 funding will be used to continue development of the inventory of both federal and non-federal projects with an interim target of complete GIS information on 90 percent of the Federally-constructed levee/floodwall systems and 90% of non-GIS information on non-federal projects. Additionally, the Corps will work collaboratively with FEMA to develop and initiate testing of a risk assessment methodology for levees and floodwalls, begin preliminary identification of "high risk" levees, and complete a joint residual risk communication strategy.

2. Collections and Study of Basic Data

c. Other Programs

(11) Flood Damage Data Program

SCOPE: The Flood Damage Data Program is required to facilitate the collection and maintenance of basic flood damage data to support Corps field offices in accomplishment of flood damage reduction studies. Planning and evaluation of flood damage reduction projects requires knowledge of actual damages caused to various types of properties. The relationships between flood depth, flood duration and velocity, value and type of property, and the amount of damage are essential to making accurate and supportable estimates of the value of projects. The distributions of damages resulting from the various factors involved are needed for the risk analysis framework adopted for water resource studies. Damage data are obtained in rare instances when a damaging event occurs and funded studies are underway. However, in most instances when flooding occurs there are no current studies in the area or other funding mechanism to collect the requisite data to be used in future analysis or to report and accurately record the damages incurred and account for the effect of the factors that caused the damages. Previously, no centralized flood damage data source existed which retrieved basic data for research efforts and for specific project studies. The major purpose of the program is to improve the technical quality and accuracy of flood damage data, to improve the understanding of the interrelationships of the characteristics of flooding on property damage, to improve the formulation of flood damage reduction projects, and reduce the costs of feasibility studies. Coastal damage data collection will be needed to adapt to new coastal protection policies and to respond to concerns from the Office of the Assistant Secretary of the Army (Civil Works) in the review of recent coastal protection projects. The activities of the program are to: (1) conduct actual flood damage surveys following flood events for riverine and coastal events; (2) develop, maintain, and improve the economic database for flood damage reduction projects; (3) calculate flood depth-damage functions for riverine and coastal flooding based on actual damage data; and, (4) develop and maintain a floodplain inventory application that would be used to apply flood damage estimation models to feasibility, reconnaissance, and continuing authority studies.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2008-2012) Program Costs	\$3,200,000
Allocation Requested for FY 2008	220,000
Balance to Complete Five-Year Program after FY 2008	2,800,000
Allocation for FY 2007	\$220,000
Change in FY 2008 from FY 2007	0

## 2. Collections and Study of Basic Data

### c. Other Programs

#### (11) Flood Damage Data Program (continued)

JUSTIFICATION: The \$400,000 requested in FY 2008 for Flood Damage Data would be used to develop and maintain data collection survey forms and data collection techniques, to collect post-flood damage data, to employ the flood damage database to estimate a National model, where regional or local flood characteristics can be specified to estimate flood damage relationships, to update and maintain a computer application for applying flood damage models to floodplain inventory data, and to develop generic business flood damage relationships. Funds would be used to monitor data collection, to collect damage data for riverine and coastal flood events, and data analysis and the development of generic damage relationships, including associated flooding costs which might be appropriate to National Economic Development procedures, and to test the effectiveness of flood warning and flood proofing procedures. Funds would also be used to enhance a website to share results of the analysis.

#### ACCOMPLISHMENTS:

1. Flood damage surveys, using material from OMB-approved questionnaires have been developed, reviewed, and pre-tested.
2. Data collection techniques and data tabulation procedures have been developed. Data collection procedures have been documented in a primer for Corps field personnel and contractors. The primer has been modified for collection of nonresidential structure data and the use of GPS equipment.
3. Over 2,200 residential surveys and approximately 1,500 nonresidential surveys have been completed for properties in 19 states. A database has been created from these surveys and analysis is continuing. Several reports have been issued documenting the case studies and damage function computation.
4. Generic residential content and structure damage functions have been released for single-family homes.
5. Generic business structure damage functions and vehicle damage functions have been computed and documented.
6. Analysis has been completed and reported on the cost of temporary relocation, emergency costs, and clean up costs.
6. A residential depth-damage function application has been released for Corps-wide use. The model has incorporated structure and content estimation and structure and content damage for a comprehensive array of structure types, foundation types, exterior building material, quality, and period of construction. The model has been released to Corps districts for integration with the HEC-Flood Damage Analysis Package for evaluation of flood damage reduction benefits. Training for the use of the model has been conducted for Corps districts and MSC's at regional workshops.
7. A new floodplain inventory tool has been released that can be used for estimating structure values for residential and nonresidential properties, for collecting and recording spatial data, and for incorporating the results into HEC-FDA. A user's guide and training materials have been prepared for the use of that tool.
8. A review of potential methodologies and data sources for estimating flood damage to roads has been completed. A preliminary model for estimating flood damage to roads has been released and field-tested.
9. Approximately 300 records have been collected and evaluated on homes that have suffered coastal flood damage.

APPROPRIATION TITLE: General Investigations, FY 2007

2. Collection and Study of Basic Data

c. Other Programs

(10) Automated Information Systems Support - Tri-Service CADD/GIS Technology Center

SCOPE: This effort provides technical support to engineers and scientists utilizing BIM, CAD, GIS and facility management technologies in the planning, design, construction, operation and maintenance of Corps projects. As there is no way of calculating the benefits which individual districts/projects receive from these technologies the Corps does not propose to charge projects and programs for the Civil Works share of its maintenance costs.

In 1992, the former Army Corps of Engineers' Computer Aided Design and Drafting (CADD) Center, located in the Army Engineer Waterways Experiment Station (WES), was expanded to an Army, Navy, Air Force (Tri-Service) center, including the addition of Geographic Information Systems (GIS) technology, by a joint agreement between the Corps, the Naval Facilities Engineering Command, and the Air Force Civil Engineer. Its purpose was to reduce duplication of effort between the three services in the management of CADD/GIS technology for facilities and environmental engineering. Since that time, the Defense Logistics Agency (DLA), the General Services Administration (GSA), USGS, FBI, Smithsonian Institution, National Capital Planning Commission, U.S. Marine Corps, U.S. Coast Guard, National Institute of Building Sciences, National Geospatial-Intelligence Agency (NGA), EPA, and NASA have joined this effort. As a result, this Center is a multi-agency vehicle to set standards, coordinate CADD/GIS systems uses, promote system integration, support centralized acquisition, and provide assistance for the installation, training, operation, and maintenance of CADD/GIS systems within the DoD facilities and environmental communities, including the Corps districts. All Corps districts that use BIM, CADD and GIS in mapping, planning, real estate, design, construction, operations, maintenance, and homeland defense and readiness benefit from the Center's efforts.

In FY07, the Center was re-chartered to focus its activities on the needs of the tri-services and OSD. This change reverses the trend towards adding other federal agencies. The focus continues on CAD and adds Building Information Modeling (BIM) to the Center's activities) and developing standard GIS data models that address the Civil Works business domains.

For FY 2008, the OMA funding portion is estimated at \$2,090,000. The Civil Works portion is requested at \$350,000 and the Naval Facilities Engineering Command portion is \$250,000. The Air Force Civil Engineer Command's \$100,000 and the U.S. Marine Corps' \$100,000 are used to support the Spatial Data Standards administered out of the Topographic Engineering Center. The \$350,000 requested for FY08 for the Civil Works portion will support over 2,000 users of BIM/CADGIS and facility management technologies for Civil Works projects.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2008-2012) Program Cost	\$3,000,000
Civil Allocation Requested for FY 2008	350,000
Balance to Complete Five-Year Program After FY 2008	2,650,000
Allocation for FY 2007*	398,000
Change in FY 2008 from FY 2007	-48,000
Average Annual Allocation for FY 2003-2007	\$392,000

(\* Assumed allocation. Final, actual allocations yet to be determined.)

APPROPRIATION TITLE: General Investigations, FY 2007

2. Collection and Study of Basic Data

c. Other Programs

10) Automated Information Systems Support - Tri-Service CADD/GIS Technology Center (continued)

JUSTIFICATION: All Corps districts use CAD and GIS computer systems for Civil Works engineering, design, mapping, planning, and facility management. Many have begun the use of BIM as an engineering, and O&M tool. All engineering drafting tables have been replaced with CAD platforms or computer mapping systems and most Corps environmental and natural resource analysis are being performed on GIS platforms. The geospatial data standard efforts of the Center were coordinated with the American National Institute of Standards to develop a National GIS Standard which was approved in November 2001 and includes civil works and homeland defense features. Standards and productivity enhancement tools developed by the Center are used for both in-house and contractor produced drawings, maps and analyses, which assure that all Corps offices have the ability to exchange their work among themselves and with others, including the private sector. The Center is actively coordinating its CAD standards 3.0. with the National Institute of Building Sciences and has created a National CAD Standard, thus reducing the redundancy with the private sector and reducing cost for both government and the private sector. In 2006, the Center began coordination and developmental support for the US National BIM Standard. The BIM standard addresses the latest building information model technology within the US building and construction industry. The Center ensures that the Corps obtains the maximum return on its investment in BIM, CAD and GIS by coordinating development efforts and distributing end products to Corps offices. The BIM, CAD and GIS systems at field offices can achieve maximum productivity when they take advantage of the economies of scale offered by sharing the development and use of common data standards, procedures, and applications. This sharing is accelerated through a concerted effort by the Center, working with various field working groups, to draw from field expertise and dissemination of this knowledge in the form of lessons learned and standards to benefit all Corps users. Comprehensive data standards supported by the Center permit government and industry users to produce equivalent designs, maps and analysis on a variety of computer systems using commercial off-the-shelf BIM, CADD and GIS software.

ACCOMPLISHMENTS IN FY 2007:

1. Release 2.5 of the A/E/C CAD Standard (both document and software tools) was released via the web. This release was distributed by several software vendors as part of their application (e.g. ProSoft). Software updates to implementation applications were incorporated in the new release. The A/E/C CAD Standards content was revised to make it compatible with the latest released version of the National CAD Standard. Requirements for Building Information Modeling Standards (BIM) were developed and incorporated in Release 2.5. A BIM Manager's Workshop was developed and conducted in October.
2. The GIS Spatial Data Standard for Facilities, Infrastructure, and Environment (SDSFIE) Release 2.52.6 was completed. The SDSFIE was transferred to the Topographic Engineering Center for further development to address ACSIM and OSD requirements.
3. The Center administered the Enterprise License Agreement (ELA) it negotiated with Bentley Systems Inc. on behalf of the US Army Corps of Engineers in late CY2005. The ELA provides access to all of Bentley's software applications and meets the Corps' Science and Engineering Technology program goal to reduce software acquisition costs.
4. The Center continued its development of a BIM expertise. A BIM Road Map and Implementation Guide was developed. A Road Map was also completed for the use of the Bentley ProjectWise software as a collaborative tool for BIM, CAD, and GIS. BIM projects for Civil Works were supported (L&D 22) to demonstrate the use of BIM in civil works projects.
5. The Center continued its deployment role for the collaborative engineering tool ProjectWise within USACE.
6. SDSFIE web site was stood up to help users implement the GIS standards.

APPROPRIATION TITLE: General Investigations, FY 2007

ACCOMPLISHMENTS IN FY 2008:

1. A Corporate dataset (originally developed in FY07) for BIM models will be enhanced to include additional Civil Works and Military objects.
2. Vendor interoperability for cost estimating, construction sequencing, O&M, specification generation will be initiated as products mature.
3. Interoperability between BIM products (vendors) will be addressed.
4. Contract Language for BIM deliverables will be updated and distributed to partnering organizations.
5. Software compliance checker for BIM will be released.
6. ProjectWise interoperability tool will be updated to address new technology in vendor applications.
7. BIM Training Classes will be open to partnering agencies.
8. SDSFIE Release 3.0 was completed
9. SDSFIE Training Materials were updated and web site for user support upgraded



APPROPRIATION TITLE: General Investigations, FY 2008

2. Collection and Study of Basic Data

c. Other Programs

(5) Scientific and Technical Information Centers

SCOPE:

Five information analysis centers (coastal engineering, cold regions engineering, concrete technology, hydraulic engineering, and soil mechanics) located at the U. S. Army Engineer Research and Development Center provide the major interface between the Corps of Engineers and the public and private sectors to gather and disseminate information as required by PL 99-802, Federal Technology Transfer Act of 1986. The function of each center is to acquire, examine, evaluate, summarize, and disseminate newly published scientific and technical information generated within the Corp of Engineers and other activities in the U.S. and abroad.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2008-2012) Program Cost	\$400,000
Allocation Requested for FY 2008	\$50,000
Balance to Complete Five-Year Program After FY 2008	\$350,000
Allocation for FY 2007*	\$77,000
*(Assumed allocation. Final, actual allocations yet to be determined.)	
Change in FY 2008 from FY 2007	-27,000
Average Annual Allocation for FY 2003-2007	\$70,000

JUSTIFICATION:

Public Law 99-802, Federal Technology Transfer Act of 1986, requires technology transfer from Federal agencies to the private sector. In addition, both the Department of Defense and the Department of the Army have objectives of supporting the information needs of engineers and scientists and eliminating unnecessary duplication of R&D. The specified information centers, supported by their host laboratories, critically evaluate and summarize the technical validity and merits of published and unpublished research and technical publications on design, construction, or other technology utilization. User communities have been well established and distribution lists for technology transfer are continuously updated. Electronic media including the World Wide Web are used where appropriate. The effectiveness of activities and services is evaluated on a continuing basis, and technology transfer products and methodology are revised when appropriate. Priority for services will be given to deployed troops, Corps of Engineers staff, and other government personnel.

These centers are a major technology transfer resource between the public, the US scientific and engineering community, and academia for results of over 75 years of research results conducted by the ERDC laboratories in the fields of soil mechanics and foundation engineering, cold regions engineering, concrete technology, hydraulic engineering, and coastal engineering. Each center is supported by multi-disciplinary technical staff and has a comprehensive library of

APPROPRIATION TITLE: General Investigations, FY 2008

materials that have been published over the years. In a typical year, each Center responds to hundreds of information requests on subjects within its purview. These services are free to the users. In addition, services such as literature research, information synthesis, publication location, research reviews, and methodology comparisons on subjects of mutual interest to ERDC laboratories and other interested parties are available on a cost-reimbursable basis.

ACCOMPLISHMENTS IN FY 2007:

The Corps made wide use of the World Wide Web (WWW) for technology transfer. The WWW is widely accessible by both the public and private sectors and provides rapid transfer, at significant cost savings, of technical data, bulleting, general information on ongoing studies, technical notes, and ultimately technical reports. Several thousand technical inquires are received annually, with the internet playing a major role in answering those inquires. Inquires are received from Federal, state, and local government activities, universities, private sector engineers and scientists, and citizens. Responses ranged from furnishing a copy of a report, arranging to speak with an expert, furnishing generalized technical advice, or giving updates on technical developments. The Centers also digitized older ERDC research reports of significant technical value and placed them on the internet for access by the public.

<u>Information Analysis Centers</u>	<u>FY 2008</u>
Coastal Engineering	\$10,000
Cold Regions Engineering	10,000
Concrete Technology	10,000
Hydraulic Engineering	10,000
Soil Mechanics	<u>10,000</u>
	\$ 50,000

COORDINATION:

The Information Analysis Centers and their host Laboratories distribute reports, technical notes, computer programs, GIS data, abstracts, information bulletins, and other scientific and technical information to the Defense Technical Information Center (DTIC), Corps libraries, depository libraries, and identified user communities to ensure wide circulation and availability. WWW homepages are maintained on the Internet for public accessibility. Reports are also available for searching through the Corps Library Program's computer system LS/2000. DTIC publicizes reports through its own DOD database and forwards the reports to the National Technical Information Service (NTIS), Department of Commerce. NTIS places reports into a compendia of Selected Water Resources Abstracts and an annual cumulative edition, with conveniently indexed and cross referenced identification of what is being or has been done in water resources research and related scientific and engineering fields by whom, where, and when.

APPROPRIATION TITLE: General Investigations, FY 2008

2. Collection and Study of Basic Data

c. Other Programs

(8) Remote Sensing Systems Support

This item supports the overall technology transfer requirement of the Corps Civil Works Program for Remote Sensing systems, which is the responsibility of the Cold Regions Research and Engineering Laboratory (CRREL) through its Remote Sensing/Geographic Information Systems (GIS) Center of Expertise.

SUMMARIZED FINANCIAL DATA

Estimated Five-Year (FY2008-2012) Program Cost	\$1,500,000
Appropriation Requested for FY 2008	\$150,000
Balance to Complete Five-Year Program after FY2008	\$1,200,000
Appropriation for FY 2007 * Assumed allocation. Final actual allocations yet to be determined.	\$150,000
Increase of FY 2008 from FY 2007	0

JUSTIFICATION:

The Remote Sensing/GIS Center is the Corps' Center of Expertise for Civil Works Remote Sensing and GIS technologies, providing mission essential support as part of the USACE 2012 organization. Through centralized management of this function, the Center provides cost-effective support through technology transfer and applications development for Corps mission responsibilities in all business practice areas: navigation, flood and coastal storm damage reduction, hydropower, regulatory, environment, emergency management, recreation, water supply, and work for others. An enterprise GIS approach is an essential component of this support. Continuing interaction with other researchers and practitioners throughout the Corps, government, the private sector, and academia assures that state-of-the-art and state-of-the-practice knowledge of evolving trends that are relevant to USACE activities are available for the Corps and that duplication of effort is avoided.

Declines in manpower require working smarter, better, and faster. Contributing to this effort, the Center develops approaches for the integration of data from the disparate sources necessary for system wide land and water resources management including: regional sediment management, regional water management, and ecosystem processes and assessment; basin studies; water control; support to emergency management; and compliance with the attendant environmental regulations and related policies. The Center maintains cognizance of state-of-the-art sensors, data collection, analysis, and storage systems, commercial software, and bridging software that integrates these with operational technologies and delivers them to the Corps' divisions, districts, and other agencies' activities. Technology is transferred through telephone and short, no cost assistance to the field. The existence of the Center ensures that the necessary support can be rapidly directed toward solving operational problems that require specialized expertise. The PROSPECT training program in remote sensing and GIS, managed by Center staff, provides another avenue for the transfer of knowledge to those who are, or soon will be, using these technologies. Training also is conducted in the field through workshops, conferences, and distance learning. White papers, pilot projects, Corps and other publications, including Engineering Letters, Circulars, and Manuals, and the Internet, also are used to transfer procedures and lessons learned to end users.

5 February 2007

#### ACCOMPLISHMENTS IN FY 2007:

1. As the Center of Expertise, served as key resource and technology point of contact for the Corps of Engineers for Civil Works remote sensing and GIS. The team of geospatial experts at the Remote Sensing/GIS Center provided access to required expertise to meet the needs of USACE personnel with questions about imagery or Geographic Information Systems.
2. Provided guidance and technical support to the Corps' Geospatial Community of Practice (COP) and provided leadership to the remote sensing, hydrology and hydraulics, and emergency sub-COPs. A number of the COPs in USACE have technical issues that are related to the geospatial technologies. The Remote Sensing/GIS Center of Expertise funds staff to participate in the activities of the COPs to assure that appropriate linkage to the geospatial technologies is available.
3. Supported one-stop service requests from Corps districts and divisions. The Remote Sensing/GIS Center provides no cost support to USACE elements having problems that can be solved in less than 3 days.
4. Provided leadership and technical support to strategic and enterprise USACE geospatial initiatives: System Wide Water Resources Program; Levee Database development; Readiness XXI Technology Transfer Program Management Team; Geospatial Operations and Maintenance Business Interlink (gORM) team member; Emergency Management Remote Sensing, GIS, and Modeling Group; and Hydrology and Hydraulics modeling software development and support team member.
5. Provided technical support to Corps District offices for the development of implementation plans for Geospatial data management including development enterprise geospatial data approaches. This supports includes discussions with district personnel concerning current and desired approaches, consideration of what is occurring in all divisions in the district, and enterprise issues.

#### PROJECTED ACCOMPLISHMENTS IN FY 2008:

1. As the Center of Expertise, served as key resource and technology point of contact for the Corps of Engineers for Civil Works remote sensing and GIS. The team of geospatial experts at the Remote Sensing/GIS Center provided access to required expertise to meet the needs of USACE personnel with questions about imagery or Geographic Information Systems.
2. Provided guidance and technical support to the Corps' Geospatial Community of Practice (COP) and provided leadership to the remote sensing, hydrology and hydraulics, and emergency sub-COPs. Although the COPs are gaining maturity, questions relating to the integration of the geospatial technologies into the COPs business areas still arise. Expertise is provided from the Remote Sensing/GIS Center to see that accurate information is available.
3. Supported one-stop service requests from Corps districts and divisions. The Remote Sensing/GIS Center provides no cost support to USACE elements having problems that can be solved in less than 3 days.
4. Provided technical support to Corps District offices for the development of implementation plans for Geospatial data management including development enterprise geospatial data approaches. This supports includes discussions with district personnel concerning current and desired approaches, consideration of what is occurring in all divisions in the district, and enterprise issues.

5 February 2007

5. Provided leadership and technical support to strategic and enterprise USACE geospatial initiatives: System Wide Water Resources Program, Missouri River Program; Readiness XXI Technology Transfer Program Management Team; Emergency Management Remedial Action Program; Geospatial Operations and Maintenance Business Interlink (gORM) team member; and Hydrology and Hydraulics modeling software development and support team member.

1. Surveys

c. Special Studies

Study	Total Estimated Federal Cost	Allocation Prior to FY 2007	Tentative Allocation FY 2007	Tentative Allocation FY 2008	Additional to Complete After FY 2008
FEMA/ Map Mod Coordination	Annual Program	275,00	425,000	1,500,000	1,500,000 Annual Program

**SCOPE:**

This effort continues a set of ongoing activities coordinating the U.S. Army Corps of Engineers (USACE) Flood Risk Management Program with the Department of Homeland Security Federal Emergency Management Agency's (FEMA) Map Modernization Program (MapMod). MapMod is a program to digitize and update Flood Insurance Rate Maps (FIRMs). After the initial phase of MapMod is complete (projected to be 2010), the program will transition into a maintenance program with the objective of keeping FIRMs updated. Strong interdependencies between USACE flood risk management activities and MapMod create a critical need for close collaboration between the two agencies throughout both the initial and maintenance phases of MapMod to establish and maintain a regular cycle of FEMA flood hazard map updates that is coordinated with ongoing USACE levee inspections, certifications and updates to the USACE levee inventory and database. Additionally, agency coordination is necessary to maintain, update, and communicate flood hazard information so the public can make informed floodplain management decisions. Finally, this collaboration is needed to ensure compatibility between USACE and FEMA programs and thus improve program implementation for the non-Federal flood risk management community.

Fiscal Year 2008 funding and beyond will continue to build on work accomplished in FY 2006 and 2007, using approximately \$700,000 in funds drawn from multiple sources. Specifically, the range of continuing activities involved in this effort includes,

- developing a risk communication strategy to effectively inform the public and decision makers based on the risk information generated by the Map Modernization Program, particularly targeting densely populated areas subject to high residual risk,
- coordinating the sharing of hydrologic and hydraulic information previously developed for USACE studies for Map Modernization purposes,
- collaborating to reduce flood risk in areas where Map Modernization reanalysis has identified increased risks,
- improving Federal inspection, monitoring and enforcement of levee operation and maintenance,
- coordinating the development of levee certification guidance for USACE districts and FEMA regions,
- supporting the work of the National Levee Policy Committee to review levee policy and recommend warranted changes, and
- sustaining the activities of the Interagency Flood Risk Management Committee to allow senior leaders from FEMA and USACE to meet on a regular basis to coordinate agency flood risk-related policies and programs.

The entire effort will be carried out as an integral element of the USACE Flood Risk Management Program – an ongoing umbrella program directed by USACE Civil Works (CECW) and managed and executed through the USACE Institute for Water Resources (IWR). The Flood Risk Management Program functions to integrate and synchronize the flood risk management projects, programs and authorities of the US Army Corps of Engineers with counterpart projects, programs and authorities of FEMA, other Federal agencies, state organizations, and regional and local agencies. Priorities across the multiple activities included in this scope will be set by the USACE Institute for Water Resources, in collaboration with USACE Senior Executives comprising the Steering Committee for the Flood

\* Assumed allocation. Final, actual allocation yet to be determined.

Risk Management Program and FEMA. Input from key stakeholder groups, such as the Association of State Floodplain Managers (ASFPM) and the National Association of Flood and Stormwater Management Agencies (NAFSMA), will be taken into consideration when setting these priorities.

#### JUSTIFICATION:

FEMA has embarked on a billion dollar, 5-year, "Map Modernization Program" (MapMod) to digitize and update the nation's Flood Insurance Rate Maps (FIRMs). The program is then intended to transition into a maintenance program for the purpose of maintaining updated FIRMs. Updating and maintaining FIRMs is critical to effective flood hazard management. They serve as the primary Federal tool for communicating flood risk, as well as the basis for setting flood insurance premiums and designating Special Flood Hazard Areas (areas subject to the 1%-annual-chance flood) where building code restrictions and mandatory flood insurance purchase requirements are in effect.

The progress of the MapMod Program is integrally tied to the USACE Flood Damage Reduction (FDR) and Rehabilitation and Inspection Programs (RIP) because the location, condition and performance of levees plays a significant role in determining what areas will be mapped into flood hazard areas on the FEMA maps. As such, USACE levee policy affects both the progress and the quality of the outputs from the FEMA Map Modernization program.

Likewise, the performance of the USACE FDR and RIP programs are affected by the new flood risk information generated by MapMod, and the resulting demand for further Federal investment in flood damage reduction projects. Additionally, the MapMod process has created a critical need for USACE data and technical expertise to evaluate levee conditions and performance for the purposes of "certification"; that is, determining that a levee provides sufficient protection against the 1%-annual-chance flood such that the protected area behind the levee will not be mapped into a Special Flood Hazard Area.

Because of these interdependencies between USACE programs and MapMod, there is a critical need for close collaboration between USACE, FEMA, and state and local governments both during and after MapMod to maintain, update, and communicate flood hazard information so the public can make informed floodplain management decisions.

This effort will continue to build on the coordination work that has already taken place between FEMA and USACE to ensure consistent FEMA-USACE communication to the public on the MapMod Program and related flood risk issues and to leverage resources when working on similar activities or within the same geographic area.

#### FY 2006 & 2007 Accomplishments:

Throughout Fiscal Years 2006 and 2007, USACE has actively supported the MapMod Program, through a variety of means including:

- Working with FEMA to develop and initiate a plan to notify owners of levees within USACE programs and that are of immediate concern because they clearly pose a threat to public safety based on inspection results. USACE and FEMA coordinated efforts to contact the owners of levees of concern, inform them of the levee conditions and of the options available to remediate the levee or otherwise address the resulting public safety hazards,
- Contributing to FEMA's development of a Provisionally Accredited Levee policy to protect public safety, while still providing levee owners the time needed to verify levee certifications as part of the MapMod process,
- Working with FEMA to coordinate and develop levee certification guidance for USACE districts and FEMA regions,
- Conducting quarterly meetings of FEMA and USACE leadership to ensure that the two agencies maintain complementary policies and practices as the FEMA MapMod Program and USACE Flood Risk Management Program move forward,
- Providing input to the development of the National Levee Inventory to ensure that the inventory is the central location of the most current information to be utilized by USACE, FEMA, and others for activities including risk assessments, levee certification determinations, project inspections and future efforts to update flood hazard maps,
- Developing recommendations improving national levee policy through a report prepared by the Interagency Levee Policy Committee, and

- Providing ongoing support of both FEMA regions and levee owners at the USACE district level by providing data for the mapping studies and information to communities affected by the MapMod Program.

FY 2008 Activities:

Fiscal Year 2008 funding will be used to expand upon previous FEMA and USACE coordination activities to support the implementation of the MapMod Program. Specifically, Fiscal Year 2008 activities will include:

- Developing and initiating a risk communication plan to inform the public and decision makers based on the risk information generated by the Map Modernization Program, particularly targeting densely populated areas subject to high residual risk.
- Sustaining vital coordination activities at the USACE district level, including leveraging information and data from past and ongoing USACE studies to support MapMod studies, conducting meetings with local communities to explain the impacts of the FEMA MapMod Program, and, in cases where MapMod results in a levee decertification, assisting communities in assessing the next steps available to them.
- Continuing quarterly meetings of FEMA and USACE leadership to maintain tight coordination between the two agencies as MapMod is carried out, and to jointly develop new policy that improves flood risk management.
- Continuing implementation of the plan initiated in Fiscal Year 2006 to notify and inform owners of levees that pose an immediate threat to public safety, based on inspection results.
- Collaborating to reduce flood risk in areas where Map Modernization reanalysis has identified increased risks.
- Continue joint efforts with FEMA, with the input from key stakeholder groups such as ASFPM / NAFSMA, to develop field guidance needed to ensure consistency between the two agencies in implementing the Flood Risk Management Program, including engineering and planning guidance relating to levee certification.
- Contributing to efforts to improve Federal inspection, monitoring and enforcement of levee operation and maintenance.
- Conduct policy studies examining options for mitigating flood risks, with a focus on California, particularly in areas where MapMod has highlighted a sizable residual risk brought to light by levee decertifications.

Priorities across the multiple activities included in the scope will be set by the USACE Institute for Water Resources, in collaboration with USACE Senior Executives comprising the Steering Committee for the Flood Risk Management Program and FEMA. Input from key stakeholder groups, such as the Association of State Floodplain Managers (ASFPM) and the National Association of Flood and Stormwater Management Agencies (NAFSMA), will be taken into consideration when setting these priorities. The Silver Jackets Program will be an essential tool in accomplishing these coordination activities. Through Silver Jackets, USACE, FEMA and other Federal agencies create interagency teams at the state level to develop and implement solutions to state natural hazard priorities.



APPROPRIATION TITLE: General Investigations, FY 2008

1. General Investigations

c. Special Studies

Tribal Partnership Program (Sec. 203, WRDA 2000)

SUMMARIZED FINANCIAL DATA:

Estimated total (FY 2000-2008)	6,100,000
Allocation for FY 2005	3,850,000
Allocation for FY 2006	750,000
Allocation for FY 2007	2,320,000*
Allocation requested for FY 2008	1,000,000

\* Assumed allocation. Final, actual allocations yet to be determined.

AUTHORIZATION: Section 203 of WRDA 2000 authorizes the study of flood damage reduction, environmental restoration and restoration and protection, preservation of cultural and natural resources, and “such other projects as the Secretary, in cooperation with Indian Tribes and the heads of other Federal agencies, determines to be appropriate.” Projects follow the standard Civil Works planning process – a reconnaissance report, fully Federally funded, and a feasibility report, cost shared 50/50 with in-kind contributions allowed.

JUSTIFICATION: Section 203, Tribal Partnership Program, was enacted to provide Tribes with various opportunities to partner with the Corps. This authorization acknowledges the Federal Trust responsibility to Tribes as governmental entities, and allows the Corps to fulfill this responsibility during the course of carrying out its essential missions. Because the wording of the authorization is so broad, various types of projects may be considered – floodplain mapping, water control management, self-reliance and economic capacity building, technical capacity building, erosion control, comprehensive planning, emergency management, water quality, water supply, community infrastructure, HTRW assessment and clean up, and a host of other projects. Section 203 is the only authorization the Corps has that specifically targets Tribes nationwide as partners, thus identifying opportunities to work with over 560 Federally recognized Tribal Nations that otherwise might not be reached. With the growing awareness of the program, other Tribes will approach the Corps to participate in these studies. Among those considering partnerships with the Corps in the future are the Navajo Nation and the Pueblo of Picuris.

PROPOSED ACTIVITIES FOR FY 2008: Funds will be used in Alaska to continue the efforts of the ocean and wave modeling and baseline erosion assessment, both viewed as critical items needed for the future of planning for the many tribal communities that are greatly affected by ocean conditions and erosion. Villages under study include Bethel, Newtok, Dillingham, Shishmaref, Kaktovik, Kivalina and Unalakleet.

APPROPRIATION TITLE: General Investigations, FY 2008

1. General Investigations

c. Special Studies

Tribal Partnership Program (Sec. 203, WRDA 2000) (continued)

ACCOMPLISHMENTS IN PRIOR YEARS: Since its enactment, the majority of Section 203 funds have gone to Alaska to study erosion, including the feasibility of moving coastal villages inland. The largest effort has been in Alaska with a major coastal erosion study and the provision of technical assistance to several Alaskan Villages (listed above) and a projected time line for both options. The Corps is currently studying the options of erosion control versus moving the villages inland. This effort has gone on for some time due to its complexity and will likely continue for several years to come.

In FY 05, for the first time, other Districts had the opportunity to utilize Section 203 funding. Buffalo, Detroit, New England Omaha, Albuquerque and Sacramento Districts submitted several proposals. Omaha, Albuquerque and Sacramento received earmarks for reconnaissance studies with the Lower Brule and Cheyenne River Sioux, as well as the Shoshone-Bannock (Omaha); the Pueblos of Santa Ana, San Juan, San Ildefonso, Santa Clara, Santo Domingo, and Zuni, as well as the Jicarilla Apache (Albuquerque); and the Washoe (Sacramento). Several positive 905(b) reports have been submitted to date – San Ildefonso Watershed Study and Pleasant Point (Passamaquoddy) Ecosystem Restoration, Little River Band of Ottawa Indians ecosystem restoration and cultural resources preservation project, Sokaogan Chippewa Community Ecosystem Restoration Study, and the Little River Band of the Ottawa Nation Ecosystem Restoration and Cultural Resources Study. One negative 905(b) report has been submitted – Lucy Vincent Beach (Wampanoag) cultural resources preservation study. The Shoshone-Bannock, Washoe and several Pueblos are continuing studies under Section 203.

1. General Investigations

c. Special Studies

Study	Total Estimated Federal Cost	Allocation Prior to FY 2007	Allocation FY 2007	Tentative Allocation FY 2008	Additional to Complete After FY 2008
12 Actions for Change to Improve Investigations	30,600,000	200,000	TBD	3,100,000	\$25,850,000

SCOPE:  
 USACE has embarked on an ambitious program for quickly incorporating the lessons learned from Hurricane Katrina into “Twelve Actions for Change”. The goals of the 12 Actions for Change are to improve public safety and the Nation’s water resources infrastructure by providing expert and professional services to the Nation, to include collaboration with public and private interests through mutually supporting integration of skills, resources, and programs to make the necessary changes. The 12 Actions are interrelated and interdependent, and will be fully integrated for execution. Specifically, through the General Investigations funding of the 12 Actions, USACE will improve its ability to conduct and evaluate investigations by employing an integrated, comprehensive, and systems-based approach that employs risk-based planning; developing planning and engineering tools to support improved understanding of the system within which a proposed project will perform as well as the local and regional implications of alternative concepts for achieving project goals; providing capability for cumulative impacts analyses using a flexible and adaptive systems approach to allow continuous upgrades as new knowledge emerges and new planning and engineering practice is developed; update software for risk-based planning; addressing national policy on tolerable risk levels; expanding policy and methods to support planning of flexible adaptive systems that include environmental and ecosystem lessons learned, improve hydrologic frequency methods; and advancing the understanding of meteorological and oceanographic interactions as storms propagate from the ocean across complex terrain to support science-based planning and evaluation of hurricane protection and coastal storm damage reduction systems. These results represent accomplishments in Actions 1, 2, 3, 5, 9, 10, and 12, and are strongly linked to successful execution of Actions 4, 6, 8, and 11.

FY 2008 funding builds upon work accomplished using 2006 emergency supplemental appropriations for the Interagency Performance Evaluation Task Force (IPET), Hurricane Protection Decision Chronology (HPDC), and 2007 funding to respond to critical needs identified by these groups and by the National Academy of Science, the American Society of Civil Engineers’ External Review Panel, and others in the wake of Hurricane Katrina. The Corps will incorporate strategies and processes used to conduct and evaluate investigations in its Continuing Authorities Program, the Inspection of Completed Works Program, which is funded in the Flood Control and Coastal Emergencies fund, and in the National Dam Safety Program, which is funded in the Operation and Maintenance account.

JUSTIFICATION:  
 Using the Program Assessment Rating Tool, an assessment of the USACE Flood and Storm Damage Reduction Program determined that there exists a need to evaluate how completed flood and coastal storm damage reduction projects help reduce the Nation’s overall flood damages; provide greater coordination between USACE, FEMA, and other federal, state, and local agencies that set floodplain and coastal zone management policies; and improving risk communication and public involvement in risk reduction strategies. A related assessment of the USACE Emergency Management Program determined that USACE lacked a comprehensive database to evaluate the performance of flood and storm protection projects that it regularly inspects and maintains; IPET noted that cumulative impacts analyses are an integral part of the evaluation process. A related assessment of the Regulatory Program noted that the USACE should do more watershed (system) planning in advance of development and less project-based planning. The 12 Actions for Change will provide the methods, processes, and technologies for USACE to implement a water resources systems approach, with a balanced, multidisciplinary, multi-objective, and multi-stakeholder evaluation framework at appropriate scales of space and time.

#### FY 2007 Accomplishments

FY 2007 funding enabled USACE to expedite development of a peer reviewed engineering model for coastal storms, begin developing methods and tools to support comprehensive evaluation of incremental changes to Corps projects over time, begin developing and testing a method for including the effects of climate variability, relative sea level rise and other effects in adaptive planning and engineering systems, improving our methods for communicating the significance of flooding risks to the public, and also increasing public involvement in evaluating alternatives and making decisions, and expedite development of a method used to construct stage and flow frequency relationships to include the physical limits of the basin.

#### FY 2008 Activities

In FY08, Actions 2, 5, and 12 (Employ Risk-based Concepts in Planning, Design, Construction, Operations and Major Maintenance; Employ Adaptive Planning and Engineering Systems; and Invest in Research, respectively) will be emphasized, and the output of these Actions is strongly linked to successfully executing the FY07 program in these Actions and the FY07 and FY08 programs in Actions 1, 3, 9, and 10 (Employ an Integrated Comprehensive Systems-Based Approach; Continuously Reassess and Update Policy for Program Development, Planning Guidance, Design and Construction Standards; Effectively Communicate Risk; and Establish Public Involvement Risk Reduction Strategies, respectively). Fiscal Year 2008 funding will be used to continue development of a peer reviewed engineering model for coastal storms; further develop methods and tools to support comprehensive evaluation of incremental changes to Corps projects over time; prepare guidance on incorporation of relative sea level rise and climate variability in USACE systems; evaluate a pilot study on communicating the significance of flooding risks to the public; begin a pilot on increasing public involvement in evaluating alternatives and making decisions; and prepare guidance for the new method used to construct stage and flow frequency relationships to include the physical limits of the basin.

# FLOOD AND STORM DAMAGE REDUCTION

## REMAINING ITEMS

## CONSTRUCTION

APPROPRIATION TITLE: Construction, FY 2008

**Dam Safety and Seepage/Stability Correction Program**

Allocation FY 2007	\$11,000,000	Tentative Allocation FY 2008	\$39,000,000
Evaluation Studies	\$ 0	Evaluation Studies	\$29,000,000
Post-Evaluation Work	\$11,000,000	Post-Evaluation Work	\$10,000,000

GENERAL: The Dam Safety and Seepage/Stability Correction Program provides for studies and modification of completed Corps of Engineers dams. There are over 700 dams under the Corps jurisdiction. While no Corps dams are in imminent danger of failure, some have been identified as having a higher risk of a dam-safety incident than originally anticipated based on new data or the likelihood of extremely large floods and seismic events. The Corps has started the implementation of a Portfolio Risk Analysis program and has completed screening over 20% of the Corps dams. The evaluation studies funded under the Dam Safety and Seepage/Stability Correction Program are for dams identified with very high risks of a dam-safety incident. Dam Safety Assurance modifications are made to provide for passage of the maximum probable flood (PMF) based on changes in the climate of the area. Other dam safety assurance modifications are designed to insure that the dam retains the reservoir during and after a major earthquake. Seepage problems at USACE dams are usually related to increase reservoir levels above the previous pool of record at a dam. Other seepage problems arise due to water seeping through the contact between the dam and bed rock. Static instability generally involves movement that starts at a slow rate and could result in massive displacement of large volumes of material if not corrected. Seepage/stability correction projects are classified as major rehabilitations. Dam modification work is proceeding under existing authorities on projects where cost-effective risk reduction measures have been identified in accordance with national priorities.

BUDGET REQUEST: The \$39,000,000 requested for Fiscal Year 2008 will be used (1) for high priority studies (\$29,000,000) and (2) to continue post-evaluation work (\$10,000,000) on high risk dam safety assurance, seepage control, and static instability correction projects.

- (1) For Evaluation Studies \$29,000,000 is requested. The Corps Screening Portfolio Risk analysis has identified 26 Dam Safety Action Class I and II critical projects for studies during Fiscal Year 2008. These are the highest priority projects where studies have not been completed in prior years. These studies were previously budgeted under the Operations and Maintenance appropriation.

Dam Safety Assurance Studies

Ball Mountain Lake, VT  
Cherry Creek Lake, CO  
East Branch Clarion River Lake, PA  
Hidden Dam, CA  
Isabella Dam, CA  
Keystone Lake, OK  
Mansfield Hollow Lake, CT  
Rough River Lake, KY

Blakely Mountain Dam, AR  
Dover Dam, Muskingum River, OH  
Eau Galle River Lake, WI  
Hop Brook Lake, CT  
John Day Lock and Dam, OR & WA  
Lake Shelbyville, IL  
Martis Creek, CA & NV

Seepage/Stability Correction Major Rehabilitation Studies

Beach City Lake, Muskingum Basin, OH  
Dale Hollow, TN  
Herbert Hoover Dike, FL  
LCADA-Whittier Narrows Dam, CA  
Nolin River Lake, KY  
Zoar Levee @ Dover Dam, Muskingum Basin, OH

Bolivar Dam, Muskingum Basin, OH  
Green River Lake, KY  
J.E. Roush Lake, KY  
Mohawk Dam, Muskingum Basin, OH  
Salamonie Lake, KY

- (2) For Post-Evaluation Work \$10,000,000 is requested for Fiscal Year 2008. These funds will be used to continue post-evaluation work on high risk dam safety assurance, seepage control, and static instability correction projects, once their evaluation reports are approved.

APPROPRIATION TITLE: Construction, FY 2008

**Estuary Restoration Program (Title I of P.L. 106-457)**

Allocation FY 2007	\$5,000,000*	Tentative Allocation FY 2008	\$5,000,000
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GENERAL: The Estuary Restoration Act of 2000, Title I of P.L. 106-457 authorizes the Secretary to carry out estuary habitat restoration projects recommended for implementation by the Estuary Habitat Restoration Council and meeting various criteria. Each project must address restoration needs identified in an estuary habitat restoration plan, be consistent with the estuary habitat restoration strategy developed under the Act, include a monitoring plan that is consistent with the standards for monitoring developed under the Act and include satisfactory assurance from the non-Federal interests proposing the project that the non-Federal interest will have the capability to carry out items of local cooperation, including maintenance. Except when innovative technology is involved the Federal share may not exceed 65 percent of the cost of the project. Non-Federal interests shall provide lands, easements, rights-of-way and relocations and are responsible for all costs associated with operating (including monitoring), maintaining, replacing, repairing, and rehabilitating the projects. Nine projects are in various stages of implementation. Examples include a dam removal on the Eastern Shore of Maryland, filling of mosquito ditches to restore wetlands in Florida, and reconnecting a back water slough thus restoring tidal floodplain wetland habitat in Oregon. FY 2007 and FY 2008 funds would be to support new projects.

BUDGET REQUEST: The \$5,000,000 requested for Fiscal Year 2008 is to continue the program of estuary habitat restoration, including initiation of new projects.  
\*Assumed allocation. Final actual allocations yet to be determined.

APPROPRIATION TITLE: Construction, FY 2008

**12 Actions for Change to Improve Construction**

Total Estimated Federal Cost	Allocation Prior to FY 2007	Allocation FY 2007	Tentative Allocation FY 2008	Additional to Complete After FY 2008
72,700,000	250,000	TBD	4,600,000	67,850,000

**SCOPE:**

USACE has embarked on an ambitious program for quickly incorporating the lessons learned from Hurricane Katrina into “Twelve Actions for Change”. The 12 Actions are interrelated and interdependent, and will be fully integrated for execution. Specifically, through the Construction General funding of the 12 Actions, USACE will improve its ability to implement a systems approach to risk-based construction and major rehabilitation by communicating the residual risk associated with levees both within and outside the Corps; providing methods to support levee certification in collaboration with FEMA and major stakeholders; developing and implementing improvements to professionalism and accountability in organizational decision-making that will ensure effective system performance, to include regionalization of technical specialty areas; balancing competing interests so that the public safety is held paramount in organizational decision-making; developing new methods and procedures for clear and candid communications will allow the public to make informed decisions on risk; enhancing our management of technical expertise and professionalism to rebuild public confidence in our ability to provide safe, reliable water resources systems fully integrating engineering and ecosystem restoration; integrate and infuse updated technologies for rapid characterization of levee, dike, dam, and floodwall stability under a variety of loadings, for rapid, cost-effective, and sustainable protection of levees and dikes from protected side erosion by waves and overtopping, and for sustainable emergency repair protocols and techniques for flood damage reduction infrastructure for broad range of structure classes and situations; and updating policy and guidance for design, construction, and major rehabilitation of USACE systems. These results represent accomplishments in Actions 2, 3, 8, 9, 10, 11 and 12, and are strongly linked to successful execution of Actions 1, 4, 5, and 6.

FY 2008 funding builds upon work accomplished using 2006 emergency supplemental appropriations for the Interagency Performance Evaluation Task Force, Hurricane Protection Decision Chronology, and 2007 funding to respond to critical needs identified by these groups and by the National Academy of Science, the American Society of Civil Engineers’ External Review Panel, and others in the wake of Hurricane Katrina. The Corps will incorporate the new methods, processes, and technologies throughout the life cycle of USACE systems, for all business lines.

**JUSTIFICATION:**

Using the Program Assessment Rating Tool, an assessment of the USACE Flood and Storm Damage Reduction Program determined that there exists a need to evaluate how completed flood and coastal storm damage reduction projects help reduce the Nation’s overall flood damages; provide greater coordination between USACE, FEMA, and other federal, state, and local agencies that set floodplain and coastal zone management policies; and improving risk communication and public involvement in risk reduction strategies. The 12 Actions for Change will ensure responsible and competent public service professionalism with life safety as a fundamental driver by developing teams and organizations operate in an integrated manner with appropriate responsibilities and authorities; implementing systematic accountability; developing certification requirements for technical professionals and products; ensuring professional integrity and accountability in organizational decision making; and more effectively involving other Federal agencies and stakeholders in the process of managing flood and coastal storm risks.

**FY 2007 Accomplishments:**

FY 2007 funding enabled USACE to update planning and engineering guidance to incorporate safety and resilient safeguard measures that will preclude rapid formation of failure mechanisms in local protection systems; begin conducting workshops to expedite updating engineering and planning guidance (obtaining rapid feedback on critical issues and transferring changes into practice); begin improving professionalism and accountability in decision making by developing certification requirements for critical engineering services and products, strengthening performance evaluations, establishing a Quality Manager / Principal Engineer position



who will ensure engineering integrity with public safety as the highest priority, and planning for periodic organizational reviews for all offices; begin developing new messages and methods for communicating the significance of residual risks to the public and conducting pilot tests; begin developing new ways to involve the public in evaluating alternatives, making decisions, and preparing for flood emergencies; begin improving the understanding and capability of the engineering workforce to reduce residual risks of proposed alternatives, to design effective modifications required for safety, and to assess the safety and reliability of completed local protection systems; begin improving our capability to make emergency repairs, provide resilient engineering systems, and accounting for all realistic failure mechanisms by investing in the research and development (R&D) required to develop innovative solutions

FY 2008 Activities:

In FY08, Actions 2, 3, 8, 9, 11, and 12 (Employ Risk-based Concepts in Planning, Design, Construction, Operations and Major Maintenance; Continuously Reassess and Update Policy for Program Development, Planning Guidance, Design and Construction Standards; Assess and Modify Organizational Behavior; Effectively Communicate Risks, Manage and Enhance Technical Expertise and Professionalism; and Invest in Research, respectively) will be emphasized, and the output of these Actions is strongly linked to successfully executing the FY07 program in these Actions and the FY07 and FY08 programs in Actions 1, 5, 6, 7, and 10 (Employ an Integrated Comprehensive Systems-Based Approach, Employ Adaptive Planning and Engineering Systems, Focus on Sustainability, Review and Inspect Completed Works, and Establish Public Involvement Risk Reduction Strategies). Fiscal Year 2008 funding will be used to infuse the methods, technologies, and processes developed in 2007 to USACE Districts and major stakeholders; will update planning and engineering systems guidance to reflect recommendations made by IPET and related groups; continue R&D for innovative methods to rapidly characterize levee, dike, dam, and floodwall stability and provide sustainable protection from erosion by waves and overtopping, as well as sustainable emergency repair; pilot regionalization of technical specialties, regional Risk Managers, and district Principal Engineers; develop a plan for periodic organizational reviews; continue to improve the understanding and capability of the engineering workforce to reduce residual risks of proposed alternatives, to design effective modifications required for safety, and to assess the safety and reliability of completed local protection systems; and pilot improved risk communication methods that increase public involvement in risk reduction.

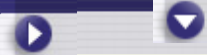
# HYDROPOWER

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## Program Assessment

### Corps of Engineers: Hydropower

Program

View Similar Programs

This program generates hydropower at 75 existing Federal multi-purpose dams, while meeting other authorized purposes of these dams such as navigation and flood damage reduction. About three percent of the nation's electricity is produced by the Corps, a significant source of power in some regions.

**PERFORMING**

★ **Adequate**

Rating

What This Rating Means

- **The program's performance generally has declined over the past 10 years.** System availability has been declining as much of the infrastructure is approaching the end of its design life.
- **The Corps does not have an overall short-term and long-term asset management strategy.** Each regional office develops its own plan for the maintenance, major rehabilitation, and replacement of its equipment.
- **Performance results reflect high forced outage rates, the lack of a quality, systematic program evaluation and the failure to develop a strategy for undertaking major rehabilitations.**

343



**We are taking the following actions to improve the performance of the program:**

**Improvement Plan**

About Improvement Plans

- Developing a comprehensive asset management strategy to better account for the inventory, value, condition and reliability of its hydropower assets.
- Developing a program-wide strategy to better plan for the future funding of needed hydropower improvements.

**Learn More**

- **Assessment Details, Funding, and Improvement Plan.**
- How all Federal programs are assessed.
- Learn more about Corps of Engineers: Hydropower.

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# CONSTRUCTION

HYDROPOWER  
CONSTRUCTION  
NORTHWESTERN DIVISION

APPROPRIATION TITLE: Construction, Hydropower (Major Rehabilitation), Fiscal Year 2008

PROJECT: Garrison Dam and Power Plant, North Dakota (Continuing)

LOCATION: The Garrison Dam Project is located in McLean and Mercer Counties in North Dakota on the Missouri River approximately 77 river miles upstream of Bismarck near Riverdale, North Dakota.

DESCRIPTION: Garrison Dam and Reservoir is a multi-purpose project consisting of a rolled earth-filled dam with a sheet pile cutoff, a hydroelectric power plant, and a reservoir with storage capacity of 23,821,000 acre feet for flood control, navigation, power, recreation, irrigation, and municipal supply. Five hydraulic turbine-driven generating units with a total plant rated capacity of 518 MW and the operation and maintenance facilities are housed in the powerhouse. The present hydropower benefits directly associated with Garrison Power Plant include (1) clean, non-polluting power generation for the region, and (2) average power generation revenues of about \$33.6 million per year to the U.S. Treasury. This major rehabilitation project will replace the existing turbine runners on all five units with new runners designed to improve reliability and maximize efficiency over a broad range of operating conditions. A Phase II scope was added from an addendum to the major rehabilitation project that was approved by HQUSACE on 15 September 2004. The Phase II work will address upgrades to electrical components that will allow the project to maximize the full reliability and efficiencies obtained in the powerhouse upgrades.

AUTHORIZATION: Flood Control Act of 1944, PL 78-534 (existing project)

REMAINING BENEFIT-REMAINING COST RATIO: 3.0 to 1 at 7 percent

TOTAL BENEFIT-COST RATIO: 3.29 to 1 at 7 percent

INITIAL BENEFIT-COST RATIO: 1.9 to 1 at 7 3/4 percent (FY 1997)

BASIS OF BENEFIT-COST RATIO: Benefits are from the Garrison Dam & Power Plant Major Rehabilitation Evaluation Report approved 27 February 1995 at 1994 price levels. Phase II benefits are from the Garrison Dam & Power Plant Major Rehabilitation Evaluation Report Addendum approved 15 September 2004 at 2004 price levels.

SUMMARIZED FINANCIAL DATA:

		ACCUM PCT OF EST FED COST	STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Appropriation Requirement	\$105,183,000		Entire Project	56	To be determined
Estimated Non-Federal Reimbursement	105,183,000		Phase I	100	
Estimated Federal Cost (Ultimate)	0		Phase II	8	
Estimated Non-Federal Cost	105,183,000				
Cash Contributions	\$ 0				
Other Costs	0				
Reimbursement, Power	105,183,000				
Total Estimated Project Cost	105,183,000				
			PHYSICAL DATA		
			Phase I		
			Power Installation:	3 Units at 109,250 KW	
				2 Units at 95,000 KW	

SUMMARIZED FINANCIAL DATA (continued)

Allocations through 30 September 2004	\$46,895,000	
Allocations for FY 2005	8,103,000	
Allocations for FY 2006	3,423,000	
Allocations for FY 2007	0	*
Allocations through FY 2007	58,421,000	56
Allocation Requested for FY 2008	6,200,000	62
Programmed Balance to Complete after FY 2008	40,562,000	
Unprogrammed Balance to Complete after FY 2008	0	

PHYSICAL DATA (continued)

Phase II  
Electrical Reliability Equipment

\* Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: All five of the Garrison turbine runners have experienced cracking at the trailing edges of their runner blades near the runner crown. Cracking was first discovered on Unit 3 in 1958 during an annual inspection. Cracking has continued through the years such that occasional repairs of blades in Unit 1 and annual-to-biennial repairs of blades in Units 2 through 5 must be performed. The continued cracking jeopardizes the future reliability of the runners, creating a potential for long outages due to a possible failure requiring complete shutdown of an affected unit. While no failures have occurred, continued weld repairs produce increasingly unfavorable metallurgy and residual stress distribution, increasing the probability of a failure. Studies indicate that without the proposed correction the failure probability will gradually increase until failure occurs. Installation of new improved turbine runners for all five units will avoid such reliability problems, both present and future, by correcting the cyclic loading which causes the turbine runner blade cracking. This will decrease operation and maintenance costs and extend the life of the hydropower plant. Lost plant efficiency will be restored and efficiency will be increased beyond the original 1950's design without an increase in cost over a replacement option using in-kind turbine runners. The addendum work will allow the plant to achieve full efficiencies and reliabilities obtained from the ongoing major rehabilitation work. The generator set-up (GSU) transformers, electrical power train equipment, and switchyard equipment are from the original construction of the project, circa 1950. All are underrated and exhibiting conditions indicating they are nearing the end of productive life. The reliability of the generating power onto the transmission system by the Garrison project is no greater than the least reliable equipment in the electrical power train. Prior to the ongoing rehabilitation, the turbine-generators were capable of producing 98 MW each. As a result of the ongoing rehabilitation, the turbines and generators both are capable of producing 112.5 MW each. The existing electrical power train equipment and systems, along with associated peripheral equipment including GSU transformers and oil-filled pipe cable, and switchyard are rated for the 98 MW capacities of the turbine-generators prior to rehabilitation. Although the capacity of the turbine-generators is significantly increased, their capability is currently limited to 98 MW by this equipment. Average annual benefits are as follows:

Annual Benefits	Amount
Deferred Maintenance Benefits	\$ 3,144,100
Restored Efficiency Benefits	7,903,500
Efficiency Improved Benefits	<u>5,457,400</u>
Total Benefits	\$16,505,000

FISCAL YEAR 2007: N/A



FISCAL YEAR 2008: The requested amount of \$6,200,000 will be applied as follows:

Switchyard Improvements & misc. electrical component replacement unit #5 (including associated E&D and S&A) (new contract)	<u>6,200,000</u>
Total	\$6,200,000

NON-FEDERAL COSTS: Garrison Dam is a multi-purpose project, and the cost for the turbine runner modifications will benefit hydropower generation only. The hydropower from Garrison Powerplant is marketed by Western Area Power Administration (WAPA), through which project costs are ultimately repaid to the Treasury. WAPA has provided a letter stating that they "will be able to market any additional power gained through increased efficiency of the turbines."

STATUS OF LOCAL COOPERATION: N/A

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$105,183,000 is a decrease of \$1,077,000 from the latest estimate (\$106,260,000) presented to Congress (FY 2007). This change includes the following items:

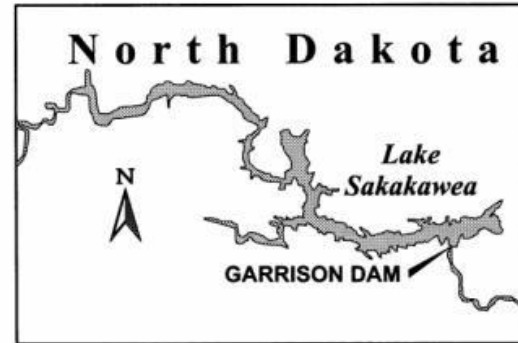
ITEM	AMOUNT
Other estimating adjustments	-2,153,000
Price escalation on construction features and changes in projected inflation rates	<u>1,076,000</u>
Total	\$-1,077,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The proposed rehabilitation is not a major Federal action that would significantly affect the quality of the human environment, and therefore did not require the preparation of an environmental impact statement. The U.S. Fish and Wildlife Service concurred with the "Finding of no Significant Impact."

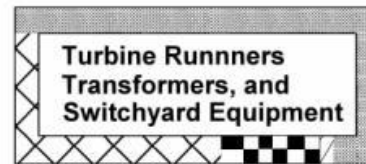
OTHER INFORMATION: This project consists of replacing all 5 turbine runners at the Garrison Dam Project. Turbine related work was completed under a furnish and install contract. Machining and painting work were subcontracted. The units removed were dismantled and sold as scrap metal, except for one unit that has become a display for the plant tourists. Additional work consisting of fabricating and installing new wicket gates and replacing existing circuit breakers and transformers was added to the project in FY00. Additional work consisting of removal of the existing generator coils and iron core, re-level and align the stator frame and purchase and install new laminations and coils was added to the project in FY02 as a result of unexpected shaft alignment problems on 3 generator units. There is no requirement to undertake fish and wildlife mitigation measures in conjunction with this rehabilitation project.





Now that the turbine and generator rehab is complete, the generators have increased capacity and ratings significantly greater than the capability of the existing electrical power train and peripheral equipment. The turbines and generators both are capable of producing 112.5 MW each. The existing electrical power train equipment and systems, along with associated peripheral equipment, are rated for 98 MW capacities of the turbines and generators prior to the rehabilitation. Although the capacity of the turbine generators is significantly increased, their capability is still limited to the 98MW of the existing equipment. Consequently an addendum to the Major Rehab report was prepared and approved by HQUSACE on 15 September 2004. The addendum report includes replacement of the existing transformers, electrical power train, peripheral equipment, and switchyard equipment. The additional construction cost was originally estimated at \$51,399,700 with an incremental benefit-to-cost ratio of 2.52. Completion of the approved plan will take approximately three years to award all contracts and 5 years to physically complete the work. The Western Area Power Administration (WAPA), the Federal power marketing agency with marketing jurisdiction over the power produced at Garrison, has provided a letter of support for the recommended plan.

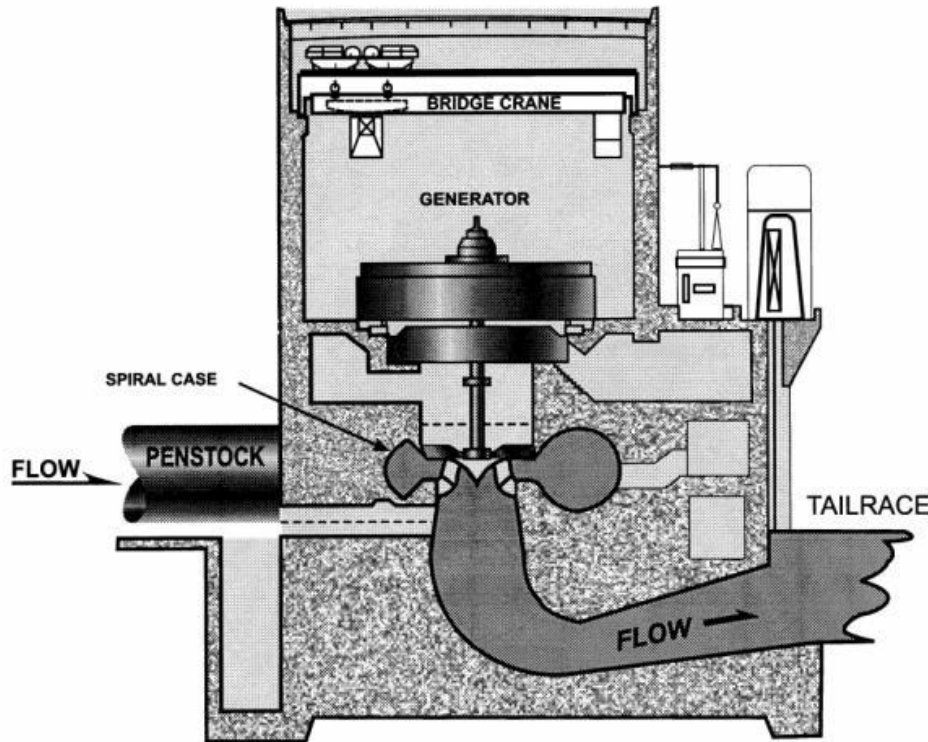
Initial construction of the powerhouse was completed in 1955.



VICINITY MAP



-  WORK COMPLETED
-  WORK UNDERWAY WITH FUNDS AVAILABLE FOR THE CURRENT FISCAL YEAR
-  WORK PROPOSED WITH FUNDS REQUESTED FOR THE BUDGET FISCAL YEAR
-  WORK REQUIRED TO COMPLETE THE PROJECT AFTER THE BUDGET FISCAL YEAR



TRANSFER SECTION THRU GARRISON DAM POWER PLANT

**GARRISON DAM & POWER PLANT  
NORTH DAKOTA  
MAJOR REHABILITATION**  
U.S. Army Engineer District, Omaha  
Northwestern Division

HYDROPOWER  
CONSTRUCTION  
SOUTH ATLANTIC DIVISION

APPROPRIATION TITLE: Construction, General - Multiple Purpose Power (Replacement).

PROJECT: John H. Kerr Dam and Reservoir, VA & NC (Continuing).

LOCATION: The Kerr Powerhouse is located on the Roanoke River in Mecklenburg County, Virginia, 7 miles east of Boydton, Virginia, 80 air miles southwest of Richmond, Virginia, and 60 air miles north of Raleigh, North Carolina.

DESCRIPTION: The recommended plan involves the rewinding of seven generator units to maximum capacity, replacement of the turbines and main power transformers, and the replacement or refurbishment of key electrical and mechanical peripheral equipment in order to improve the overall reliability of the project, reduce operation and maintenance costs, reduce unscheduled repair costs, and provide additional hydropower capacity and power revenues.

AUTHORIZATION: Flood Control Act of 1944.

REMAINING BENEFIT-REMAINING COST RATIO: 8.3 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 3.6 to 1 at 7 percent.

BASIS OF BENEFIT-COST RATIO: Benefits are from the latest available evaluations contained in the Major Rehabilitation Evaluation Report addendum and transmittal memorandum dated June 1997 at October 1996 price levels. Benefits were brought to current conditions of the power generation facilities and expected alternative costs in January 2005 using information from the Hydropower Design Center.

INITIAL BENEFIT-COST RATIO: 1.4 to 1 at 7 1/8 percent. Initial construction funds appropriated in FY 1998.

SUMMARIZED FINANCIAL DATA		ACCUM PCT OF EST FED COST	STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Total Appropriation Requirement	\$80,400,000		Entire Project	44	TBD
Future Non-Federal Reimbursement	\$80,400,000				
Estimated Non-Federal Cost (Ultimate)	\$ 0				
Cash Contributions	0				
Other Costs	0				
Reimbursements	\$ 80,400,000				
Power	\$80,400,000				
Total Estimated Project Cost	\$80,400,000				
Allocations to 30 September 2004	\$ 17,150,000				
Allocation for FY 2005	4,685,000				
Allocation for FY 2006	13,560,000				
Conference Allowance for FY 2007	11,000,000				
Allocation for FY 2007	11,000,000				
Allocations through FY 2007	46,395,000	58			
Allocation Requested for 2008	\$ 13,000,000	74			
Programmed Balance to Complete after FY 2008	21,005,000				
Unprogrammed Balance to Complete after FY 2008	0				

PHYSICAL DATA

Rewind Generator	7
Replace Turbines	6
Refurbish Turbines	1
Replace Transformers	All

Division: South Atlantic

District: Wilmington

John H. Kerr Dam and Reservoir, NC & VA

3 January 2007

JUSTIFICATION: The John H. Kerr Powerplant, which was initially placed into operation in 1953, is showing signs of excessive wear of the generators, the peripheral equipment and the turbines. This has resulted in a loss of efficiency, reduced reliability of the units and lost power output for the units. The recommended plan of improvement calls for rewinding the generators to maximum capacity, replacement of the turbines and main power transformers, and replacement or refurbishment of key electrical/mechanical peripheral equipment. The recommended plan will improve the powerplant's overall reliability, reduce further degradation of the hydroelectric units, decrease operation and maintenance costs, and increase the power generation capability. There is growing concern with project reliability due to recent malfunctions of oil circuit breakers in the switchyard, for which repair parts are no longer available and must be custom fabricated; frequent leaks in the raw water piping system, which is in extremely poor condition throughout; and the extremely heavy cavitation observed in the runner, stay ring and discharge ring of unit #5. Average annual benefits for hydroelectric power are \$17,485,000.

FISCAL YEAR 2007: The allocated amount of \$11,000,000 will be used for power plant rehabilitation, planning, engineering and design and construction management.

FISCAL YEAR 2008: The requested amount of \$13,000,000 will be applied as follows:

Continue work under contract for rehabilitation of powerplant	\$11,780,000
Planning, Engineering and Design	490,000
Construction Management	730,000
Total	\$13,000,000

NON-FEDERAL COST: The costs allocable to power are reimbursable, and will be reviewed and adjusted based on construction costs when the project becomes operational.

Requirements of local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Pay all costs allocated to hydropower and bear all costs of operation, maintenance, repair, rehabilitation and replacement of hydropower facilities	\$80,400,000	\$6,043,000

STATUS OF LOCAL COOPERATION: Pursuant to Federal Laws responsibility for repayment of hydropower costs rests with the power-marketing agency, the Southeast Power Administration.

Division: South Atlantic

District: Wilmington

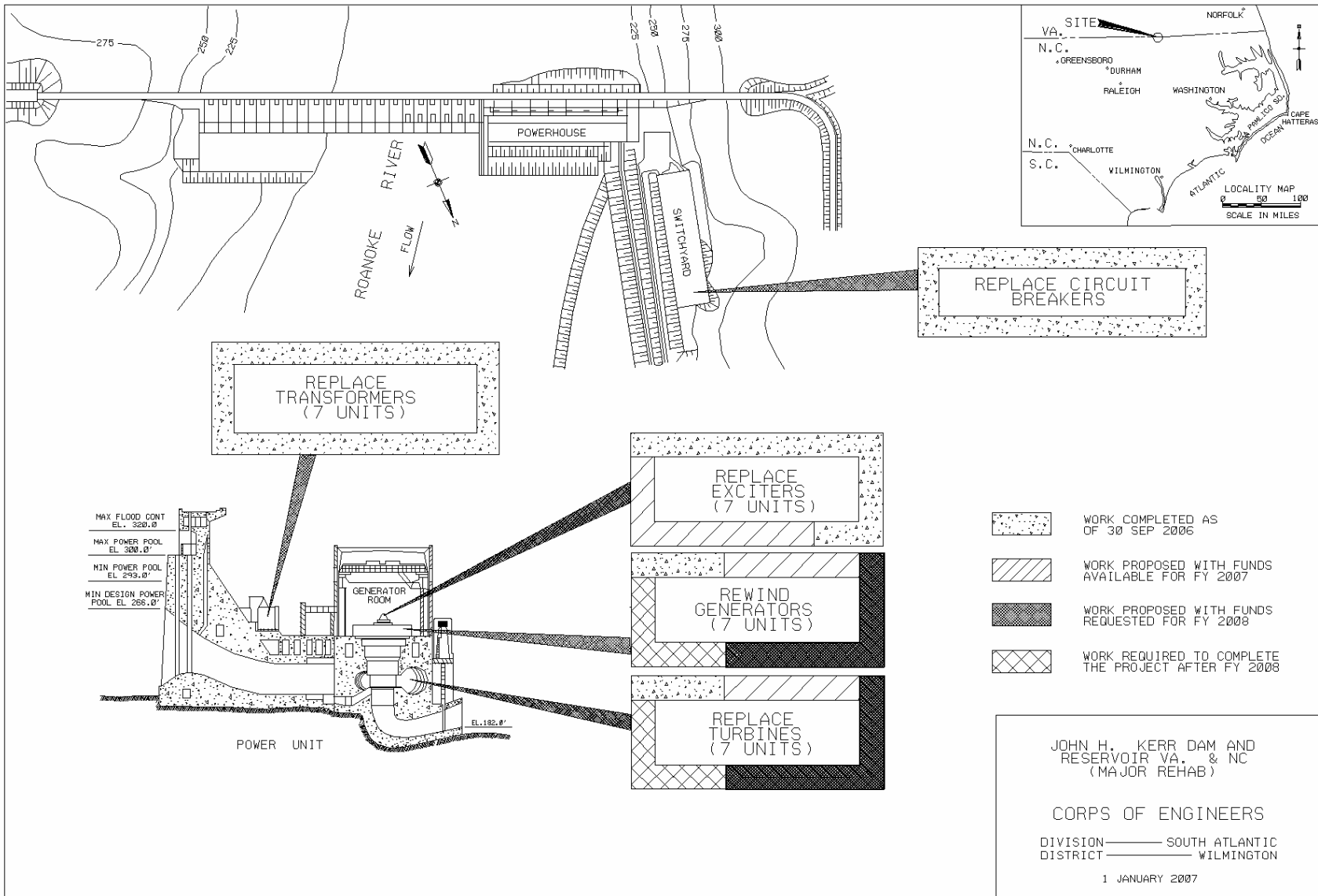
John H. Kerr Dam and Reservoir, NC & VA

3 January 2007

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$80,400,000 is the same as the latest estimate (\$80,400,000) presented to Congress (FY 2007).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: An Environmental Assessment and Finding of No Significant Impact was prepared and distributed in December 1996 for public comment. The Finding of No Significant Impact was signed by the District Engineer on 7 February 1997.

OTHER INFORMATION: None.



Division: South Atlantic

District: Wilmington

John H. Kerr Dam and Reservoir, NC & VA

3 January 2007



APPROPRIATION TITLE: Construction, General - Multiple Purpose Power

PROJECT: Richard B. Russell Dam and Lake, Georgia and South Carolina (Continuing)

LOCATION: The project is located on the Savannah River about 275 miles above the mouth, 16 miles southeast of Elberton, Georgia and between the existing J. Strom Thurmond and Hartwell Lakes.

DESCRIPTION: The project consists of a concrete gravity-type dam, flanked by earth embankments with a maximum height of 200 feet above the river. The total length of 5,616 feet consists of a 1,884-foot concrete section and embankments of 3,732 feet. The gate-controlled spillway has a design capacity of 800,000 c.f.s. The project includes the installation of 328 megawatts of conventional power completed in January 1986 and 320 megawatts of reversible pumped storage power for a total available capacity of 648 megawatts.

AUTHORIZATION: Flood Control Act of 1966, modified by the Water Resources Development Act of 1976 and the Water Resources Development Act of 1986.

REMAINING BENEFIT - REMAINING COST RATIO: not applicable because project construction is substantially complete.

TOTAL BENEFIT - COST RATIO: 1.9 to 1 at 7 percent.

INITIAL BENEFIT - COST RATIO: 2.0 to 1 at 3 1/4 percent (FY 1972).

BASIS OF BENEFIT - COST RATIO: Benefits are from the cost allocation study completed in December 1991 at October 1991 price levels.

SUMMARIZED FINANCIAL DATA			ACCUM PCT OF EST FED COST	STATUS (5 Feb 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Total Appropriation Requirement		\$627,700,000		Entire Project	98.8	To be determined
Future Non-Federal Reimbursement		590,583,000				
Estimated Federal Cost (Ultimate)		33,517,000				
Estimated Non-Federal Cost		592,483,000				
Cash Contributions		1,900,000				
Reimbursements		590,583,000				
Power	590,583,000					
Total Estimated Project Cost		629,600,000				
Allocations through 30 September 2004		611,631,000				
Allocations for FY 2005		972,000				
Allocations for FY 2006		1,287,000				
Conference Allowance for FY 2007		0				
Allocation for FY 2007		4,600,000	*			
Allocations thru FY 2007		618,490,000	98.8%			
Allocation Requested for FY 2008		6,900,000	99.6%			
Programmed Balance to Complete after FY 2008		2,310,000				
Unprogrammed Balance to Complete after FY 2008		0				

\*Assumed allocation. Final, actual allocations yet to be determined.

Division: South Atlantic

District: Savannah

Richard B. Russell Dam and Lake, GA & SC

5 February 2007

PHYSICAL DATA

Dam		Relocations-Roads (Miles)	19.5
Type: Concrete Gravity, flanked by earth embankments		Railroads (Miles)	9.1
Maximum Height (Feet)	200	Initial Power Installation	
Length		4 Conventional Units (MW)	82
Concrete Section (Feet)	1,884	4 Pump Storage Units (MW)	80
Embankments (Feet)	3,732	Normal Average Head (Feet)	144
Spillway		Reservoir Capacity (Acre-feet)	
Type: Gate Controlled		Flood Control	140,000
Design Capacity (c.f.s)	800,00	Power	126,800
Lands and Damages (Acres)	0	Dead Storage	899,400
Type: Predominantly timber and Agricultural	53,112		
Improvements: Typical farm units			

JUSTIFICATION: The 648 megawatts installation, including pumped storage, will help meet the increased power requirements and rapid growth demands in this region. The output can be marketed and fully utilized immediately upon project completion in Federal Energy Regulatory Commission (FERC) supply areas 21, 22, and 23. This includes all of South Carolina, most of North Carolina, Georgia, Alabama, and parts of Mississippi and Florida. The FERC has stated repeatedly the need for this power source. This project will be an integral unit of the plan for development of the Savannah River Basin for flood control, navigation, power, and allied purposes. The recreational facilities will serve an area within a large zone of influences surrounding the three-lake complex of J. Strom Thurmond, Hartwell, and Richard B. Russell lakes. Average annual benefits are as follows:

Annual Benefits	Amount
Power	\$ 52,995,000
Flood Control	177,000
Recreation	3,597,000
Fish and Wildlife	71,000
Area Redevelopment	4,212,000
Total	\$ 61,052,000

FISCAL YEAR 2007: The FY2007 funds will be used to continue environmental monitoring of pumped storage operation (\$900); initiate installation of Static Start and Main Circuit Breakers (\$200); initiate installation contracts on JST O2 System for RBR Pumped Storage (\$2,800); planning, engineering and design (\$500) and construction management (\$200).

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue environmental monitoring of pumped storage operation	\$900,000
Initiate Installation Contracts for the Mitigation JST O2 System	\$5,700,000
Planning, Engineering and Design	\$100,000
Construction Management	\$200,000
<b>Total</b>	<b>\$6,900,000</b>

NON-FEDERAL COST: In accordance with Public Law 89-72, agreements for recreation development with the States of Georgia and South Carolina have been executed and were approved by the Secretary of the Army 20 May 1974. The costs allocable to power are reimbursable, and will be reviewed and adjusted, based on construction costs when the project becomes operational.

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Capital Cost allocated to power.	590,583,000	3,557,000
Pay, contribute in kind, or repay (repayment not to exceed 50 years) with interest, one-half of the separable costs allocated to recreation.	1,900,000	0
Bear all costs of operation, maintenance, repair, rehabilitation, and replacement of recreation facilities.	0	249,000
<b>Total Non-Federal Costs</b>	<b>592,483,000</b>	<b>3,806,000</b>

STATUS OF LOCAL COOPERATION: The State of Georgia began payments for recreation reimbursements in May 1985. The State of South Carolina began payments in August 1985. Responsibility for repayment of power costs rests with the Southeastern Power Administration pursuant to Federal Laws.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps) costs estimate of \$627,700,000 is an increase of \$3,600,000 from the latest estimate (624,100,000) presented to Congress (FY 2007). The change includes the following items.

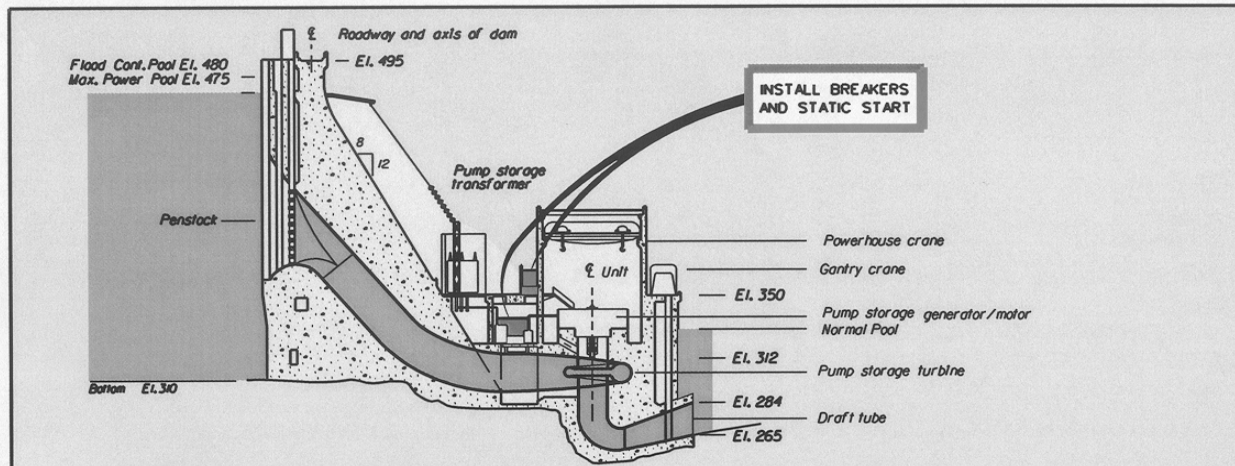
<u>Item</u>	<u>Amount</u>
Price increase due to delay in construction contracts and delay in awarding of JST O2 system work due to lack of funding from FY04 to present. Also extends environmental monitoring and associated costs in FY13.	\$3,600,000
Total	\$3,600,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final Environmental Impact Statement (EIS) on conventional installation was submitted to Council on Environmental Quality (CEQ) on 31 May 1974. A supplement on water quality to the final EIS was filed with CEQ in May 1976. The final EIS on pumped storage was filed with the Environmental Protection Agency (EPA) in October 1979. The Supplement on fish and wildlife mitigation to the final EIS was filed with the EPA in December 1981. A supplement to the final EIS on pumped storage was filed in August 1991. A final NEPA document (Environmental Assessment) now based on 4 ½ years of environmental testing is complete. It embodies those technical items that the Corps of Engineers (COE) and South Carolina have reached agreement on, relating to operational measures, construction of a O2 system to increase fish habitat and continued environmental monitoring of a commercial operation. The EA for Pumped Storage was completed in FY 1999 and the FONSI was signed in August 1999.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1968. Funds to initiate land acquisition were appropriated in FY 1971 and allocated in FY 1972. Initial construction funds were appropriated in FY 1975.

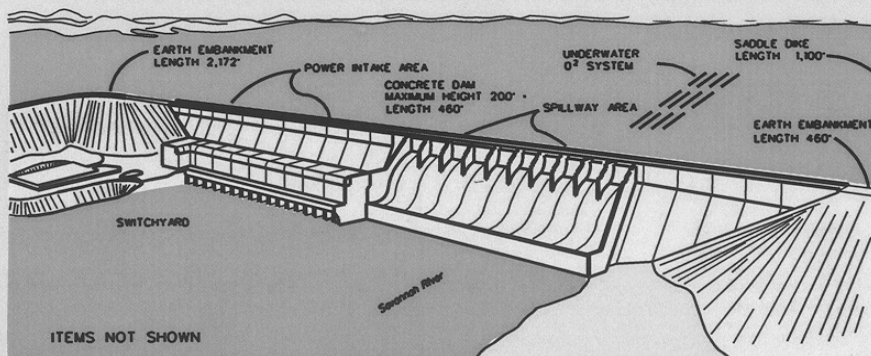
Pumped Storage was declared commercially available on 1 September 2002 with a favorable decision from U.S. District Court granted 03 May 2002. That hearing on the Corps' request for summary judgment to dismiss the injunction was conducted on 17 October 2000 in the Charleston, SC U.S. District Court.

In accordance with the NEPA Decision previously signed in August 1999, the District agreed to construct an oxygenation system in JST Lake to mitigate the environmental impacts from the potential summer time temperature rise to the striped bass habitat in the tailwater regime below RBR Dam. This mitigation must be in place before there is the full use of the 4 Pump-Back units year round. The O2 system is designed to provide for additional fish habitat and it is located near Modoc about 5 miles above JST Dam. Also, in accordance with the NEPA document, the Corps is required to continue environmental monitoring for seven years, five of which must cover the plan 5 year round capability using 4 pump units. The District has agreed to limit pumping to two units from June to September prior to the construction of the O2 system, after that, all 4 pump units will be available during the summer months.

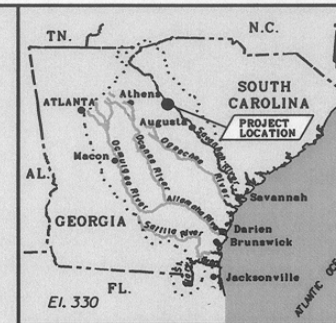


**PUMP STORAGE  
INTAKE AND POWERHOUSE SECTION**

SCALE IN FEET  
40 0 40



**PERSPECTIVE**



**VICINITY MAP**

**STATUS OF WORK**

- WORK COMPLETED AS OF 30 SEPTEMBER 2005
- WORK UNDERWAY WITH FUNDS AVAILABLE FOR FY 2006
- WORK PROPOSED WITH FUNDS REQUESTED FOR FY 2007
- WORK REQUIRED TO COMPLETE THE PROJECT AFTER FY 2007

**ITEMS NOT SHOWN:**

INSTALL NEW JST O<sub>2</sub> STORAGE AND DISTRIBUTION SYSTEM-RBR PUMPED STORAGE STORAGE MITIGATION (25 MILES DOWNSTREAM)

CONTINUE ENVIRONMENTAL MONITORING FOR PUMPED STORAGE OPERATION

**MULTIPLE PURPOSE PROJECTS INCLUDING POWER  
RICHARD B. RUSSELL DAM AND LAKE  
GEORGIA AND SOUTH CAROLINA**

WORK COMPLETED, IN PROGRESS & PROPOSED

SAVANNAH DISTRICT  
SOUTH ATLANTIC DIVISION  
1 JANUARY 2006

HYDROPOWER  
CONSTRUCTION  
SOUTHWEST DIVISION

APPROPRIATION TITLE: Construction - Replacement, (Multiple Purpose, including Power).

PROJECT: Ozark Powerhouse Replacement, Arkansas (Continuing).

LOCATION: Ozark Powerhouse is located at Ozark Jeta-Taylor Lock & Dam on the Arkansas River in Franklin County, Arkansas. The project is part of the McClellan-Kerr Arkansas River Navigation System.

DESCRIPTION: The Ozark powerhouse was constructed in 1972-74. The five 20 Megawatt slant-axis turbines have experienced numerous failures and require repair and replacement to maintain hydropower generation. This project consists of redesigning and replacing the turbines as well as rehabilitation of the speed increasing gearboxes, rehabilitation of the powerhouse cranes, and replacement and rehabilitation of supporting systems and equipment. Rehabilitation will restore plant output and reliability.

AUTHORIZATION: River and Harbor Act of 1946.

REMAINING BENEFIT-REMAINING COST RATIO: 2.6 to 1 at 7 percent

TOTAL BENEFIT-COST RATIO: 1.9 to 1 at 7 percent

INITIAL BENEFIT-COST RATIO: 2.3 to 1 at 5.125 percent (FY 2003).

BASIS OF BENEFIT-COST RATIO: Benefits are from the Ozark Powerhouse Major Rehabilitation Amendment to Project Benefits, dated June 2006, at 2006 price levels.

SUMMARIZED FINANCIAL DATA	ACCUM PCT OF EST FED COST	STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Total Appropriation Requirement	\$64,477,000	Entire Project	7	To Be Determined
Future Non-Federal Reimbursement	64,477,000 1/			
Estimated Federal Cost (Ultimate)	0			
Estimated Non-Federal Cost	\$84,577,000			
Cash Contributions	\$20,100,000 2/			
Other Costs	0			
Reimbursements	\$64,477,000			
Hydropower	\$64,477,000			
Total Estimated Project Cost	\$84,577,000			

PHYSICAL DATA  
Replace existing five turbines  
with new turbines.

**Division: Southwestern**

**District: Little Rock Project:**

**Ozark Powerhouse Major Rehabilitation, Arkansas**



SUMMARIZED FINANCIAL DATA

ACCUM  
PCT OF EST  
FED COST

Allocations to 30 September 2004	\$ 953,000	
Allocation for FY 2005	4,412,000	
Allocation for FY 2006	0 <sup>3/</sup>	
Conference Allowance for FY 2007	0	
Allocation for FY 2007	0 <sup>4/</sup>	
Allocations through FY 2007	5,365,000	8
Allocation Requested for FY 2008	17,300,000	35
Programmed Balance to Complete after FY 2008	41,812,000	
Unprogrammed Balance to Complete after FY 2007	0	

1/ In accordance with the cost sharing and financing concepts reflected in the Flood Control Act of 1944, hydropower rehabilitation is funded upfront 100% Federal, with 100% non-Federal payback with interest from Southwestern Power Administration's sale of power over a 50-year period starting at completion of construction.

2/ Funding provided by the Customers in advance of the required reimbursement through the Southwestern Power Administration (SWPA).

3/ FY 2006 work being funded by the Customers through SWPA.

4/ FY 2007 work being funded by the Customers through SWPA.

JUSTIFICATION: One Ozark Powerhouse unit is permanently disabled. Extensive cost and effort is currently required to maintain the remaining four (4) units in operation. The power produced at Ozark serves customers throughout Arkansas, Missouri, Texas, and Oklahoma. Annual unit availability from 2001 through 2005 averaged 47%. Annual loss of revenue is impacting the hydropower customer's rate base, and impacting the ability of the Federal government to recoup the initial capital investment through the sale of electrical power. This project will remove the existing five turbines and replace them with "state of the art" turbines. Replacement of the turbines with improved design turbines will allow for more efficient generation of power, restore power benefits, and extend the useful life of this feature. Average annual benefits of \$12,294,000 are all hydropower, and based on 2006 price levels.

Division: Southwestern

District: Little Rock Project:

Ozark Powerhouse Major Rehabilitation, Arkansas

5 February 2007

365

FISCAL YEAR 2007: Customer funding of \$16,300,000, authorized in FY 2006 and FY 2007, will be used to perform the following work this fiscal year:

Continue contract for rehabilitation of turbine units and appurtenant equipment	\$ 14,000,000
Planning, Engineering, and Design	1,000,000
Construction Management	<u>1,300,000</u>
Total	\$16,300,000

FISCAL YEAR 2008: The requested amount of \$17,300,000 will be applied as follows:

Continue contract for rehabilitation of turbine units and appurtenant equipment	\$ 15,795,000
Planning, Engineering, and Design	452,000
Construction Management	<u>1,053,000</u>
Total	\$17,300,000

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the Flood Control Act of 1944, the non-Federal sponsor must comply with the requirements listed below:

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
<u>Reimburse</u> all of the construction costs allocated to hydropower and bear all costs of operation, maintenance, repair, rehabilitation, and replacement of hydropower facilities.	\$84,577,000	0
Total Non-Federal	\$84,577,000	0

The non-Federal sponsor will reimburse construction costs over a period not to exceed 50 years following completion of construction.

**Division: Southwestern**

**District: Little Rock**

**Project: Ozark Powerhouse Major Rehabilitation, Arkansas**

STATUS OF LOCAL COOPERATION: Initially, this project was to be 100 percent Federally funded with payback from the Southwestern Power Administration's sale of power. Due to the unavailability of Federal funds, the non-Federal sponsor provided \$14,400,000 in FY 2006 and will provide \$5,700,000 in FY 2007 to continue the turbine contract. Reimbursement payments for the remaining construction costs will be initiated at the completion of construction.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$84,577,000 at 2006 price levels. is an increase of \$25,677,000 from the latest estimate (\$58,900,000) presented to Congress (FY 2005). This change includes the following items.

Item	Amount
Price Escalation on Construction Features	\$ - 4,119,000
Post Contract Award and Other Estimating Adjustments	<u>29,796,000</u>
Total	\$ 25,677,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT COMPLIANCE: An environmental assessment of the project was completed in January 1999. A Finding of No Significant Impact was signed 13 January 1999.

OTHER INFORMATION: The Major Rehabilitation Report was approved in July 1999, with an amendment to project benefits completed in June 2006. Funds to initiate construction were appropriated in Fiscal Year 2003. The turbine replacement contract work is continuing in FY2007 using hydropower customer funding provided through the Southwestern Power Administration (SWPA).

The Webbers Falls Powerhouse major rehabilitation project is being constructed as an option to the Ozark Powerhouse major rehabilitation as both projects have similar type of units (slant access turbines). Combining the two projects into one contract will result in a savings of \$5,000,000.

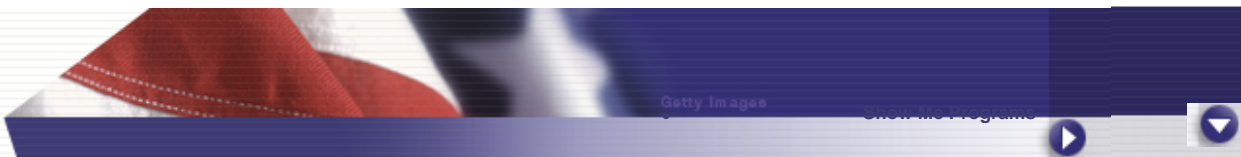
The City of Jonesboro, Arkansas is providing the Customer funding to continue work on both the Ozark and Webbers Falls Powerhouse major rehabilitation projects in FY 2007.

# COMMERCIAL NAVIGATION

# COMMERCIAL NAVIGATION

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EXPECT FEDERAL PROGRAMS TO PERFORM WELL, AND BETTER EVERY YEAR.



## Program Assessment

### Corps of Engineers: Coastal Ports and Harbors

This program helps design, build, operate and maintain the nation's coastal maritime infrastructure -- ports, harbors, and navigation channels. More than 1.3 billion tons of cargo worth more than \$900 billion moves through these facilities annually.

#### PERFORMING

☆☆ Moderately Effective

- **The Corps coastal navigation program plays an important role in constructing, operating and maintaining coastal maritime infrastructure essential for meeting international commercial and military needs.**
- **Corps investment decisions to construct new coastal maritime infrastructure facilities under this program have not always been based on sound economic considerations.** That somewhat undisciplined approach tends to waste valuable resources and reduce the program's effectiveness.
- **Corps decisions on how to spend its operation and maintenance budget need improvement.** The Corps needs to develop and apply better management techniques to budget O&M expenditures, including facility condition indices which assess the need for O&M spending in an orderly and methodical way.



## We are taking the following actions to improve the performance of the program:

### Improvement Plan

About Improvement Plans

- Selecting Corps coastal navigation construction projects using objective, business-like, economic criteria to achieve the maximum benefits possible and to eliminate waste and inefficiency.
- Developing and implementing improved techniques for managing O&M expenditures, including facility condition indices, standardizing decision-making across Corps divisions and districts.

### Learn More

- **Assessment Details, Funding, and Improvement Plan.**
- How all Federal programs are assessed.
- Learn more about Corps of Engineers: Coastal Ports and Harbors.

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Expect More Programs

## Program Assessment

### Inland Waterways Navigation

Program

View Similar Programs

The goal of the program is to facilitate substantial movements of waterborne commerce on the inland waterways where highly cost-effective. The Corps uses locks and dams, navigation channels, and other measures to support safe, reliable, and environmentally sustainable transportation on these waterways.

#### NOT PERFORMING

#### Results Not Demonstrated

- **The rehabilitation of existing infrastructure is funded from a different appropriation than routine maintenance, and responsibility for these interrelated investments is fragmented.** The current approach diffuses accountability and oversight, does not reflect the full cost of operating and maintaining existing projects, and impedes development of an integrated investment strategy.
- **The Corps proposed new navigation locks on the Upper Mississippi River and Illinois Waterway based on an outdated economic model that overstates benefits and a second economic model that reflects flawed, hypothetical data and assumptions.** The National Academy recommended developing a new model based on real willingness-to-pay data to form the foundation for estimating the benefits.
- **The Corps needs to develop standard risk and reliability criteria to measure the condition of its inland waterways projects nationwide and use in establishing priorities for maintenance funding.**

Rating

What This Rating Means





## We are taking the following actions to improve the performance of the program:

### Improvement Plan

About Improvement Plans

- Proposing to transfer the rehabilitation of inland waterways projects, where the extent of the work is not large enough to be considered a replacement, from construction to the maintenance program.
- Developing a new economic model to estimate properly the economic benefits of a range of possible improvements on the Upper Mississippi River and Illinois Waterway.
- Improving how the program measures risk and reliability. The Corps has held five workshops with waterways users to discuss the factors relevant to the allocation of maintenance funding.

### Learn More

- **Assessment Details, Funding, and Improvement Plan.**
- How all Federal programs are assessed.
- Learn more about Inland Waterways Navigation.

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# INVESTIGATIONS

COMMERCIAL NAVIGATION  
INVESTIGATIONS  
GREAT LAKES AND OHIO RIVER DIVISION

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Division: Great Lakes and Ohio River Division

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Tentative Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Great Lakes Navigational System, Michigan, Illinois, Indiana, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin	7,996,000	3,215,000	1,509,000	1,272,000	300,000	800,000	900,000

Detroit District

The Great Lakes/St. Lawrence Seaway navigation system is an international waterway that provides a minimum 25.5' safe draft for nearly 2,300 miles. The system extends from the Atlantic Ocean throughout the Great Lakes to Duluth, MN. The navigation system is operated and maintained by both the United States and Canadian Governments through the St. Lawrence Seaway Development Corporation (USDOT), the St. Lawrence Seaway Management Corporation (Transport Canada), and the U.S. Army Corps of Engineers. The system contributes significantly to the North American economy in both the United States and Canada. Section 456 of the Water Resources Development Act of 1999 directed the Corps to review the feasibility of improving commercial navigation on the Great Lakes navigation system, including locks, dams, harbors, ports, channels, and other related features, in consultation with the St. Lawrence Seaway Development Corporation (SLSDC). A Reconnaissance Report, in response to the 1999 WRDA study authorization, was approved in February 2003. Prior to initiation of any feasibility studies, additional information is needed, as a supplement to the reconnaissance report, for determination of the Federal interest. This effort will also include an assessment of baseline without-project conditions for the environment, engineering features and economic conditions, and examine concerns that have been raised as a result of public involvement and coordination. Should the recommendation be to proceed with further studies, this phase must also determine the scope of additional studies, including cost and duration, and develop a Project Management Plan. Since the system is a bi-national waterway, coordination with Canada occurred during the development of the Reconnaissance Report, and in May 2003, Transport Canada and the Department of Transportation entered into a Memorandum of Cooperation which underscores both countries intent to cooperate and collaborate to ensure the viability of the Great Lakes St. Lawrence Seaway System. Further coordination between the Canadian and U.S. Governments has resulted in a draft Memorandum of Understanding between the USDOD, SLSDC and Transport Canada (TC) would be negotiated. Canadian funding for their involvement in the study has been proceeding at a level commensurate with that of the USACE. Through FY06, Canadian funding for the supplemental study efforts has totaled approximately \$5M, and Canada has funding committed to continue their efforts in FY07.

Bi-national Steering Committee/working groups have been established for the supplemental study efforts, including representatives from TC, USDOT, USACE, USFWS, Environment Canada, and both U.S. and Canadian Seaway Authorities. A series of regional public meetings were held to solicit input on the study from interested stakeholders of the waterway. Engineering analyses of the system have been completed, including infrastructure inspections, and reliability modeling initiated. Future traffic forecasts have been developed, including a new cargo/new vessel market assessment. An environmental baseline for the system has been drafted.

FY07 efforts will be limited to continued coordination of the ongoing bi-national system infrastructure assessment, with minimal funding available to continue initial integration of engineering/economic model outputs and to begin to development of future O&M scenarios/costs and associated environmental implications.

FY08 funding will be used to complete the bi-national system assessment and begin incorporation of the findings into the remaining tasks required for completion of the supplemental recon report in FY09, which will include the formalization of the scope and cost sharing requirements of any follow-on study efforts.

COMMERCIAL NAVIGATION  
INVESTIGATIONS  
MISSISSIPPI VALLEY DIVISION

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Mississippi Valley Division

Project	Total Estimated Federal Cost \$	Allocation To FY 2004 \$	Allocation for FY 2005 \$	Allocation for FY 2006 \$	Allocation for FY 2007 \$	Allocation Requested for FY 2008 \$	Additional to Complete After FY 2008 \$
LOUISIANA							
Bayou Sorrel Lock, LA New Orleans District	7,300,000	464,000	527,000	1,238,000	1,500,000 *	1,371,000	2,200,000

Bayou Sorrel Lock is a feature of the Atchafalaya Basin project, which is a feature of the Flood Control, Mississippi River and Tributaries project. The project flood flow line for the Atchafalaya Basin was modified in 1986 to the current elevation of 28.7. In order to maintain the level of flood protection provided by the Atchafalaya Basin Project, the lock must be modified or replaced. The need to modify Bayou Sorrel Lock presents an opportunity to address increasing navigation concerns at this lock. Planning, engineering, and design of the modification or replacement for flood reduction benefits were delayed until the optimum navigation plan could be studied. A feasibility study was approved in March 2004. The recommended plan consists of replacing the existing lock with a new 75 by 1,200 foot concrete chamber lock immediately adjacent to the existing lock at an estimated cost of \$97,500,000. The benefit-cost ratio is 14 to 1 based on the latest economic analysis dated September 2002. Preconstruction engineering and design cost would be all Federal.

Total Estimated Preconstruction Engineering and Design Costs	\$7,300,000	Total Estimated Preconstruction Engineering and Design Costs	\$7,300,000
Initial Federal Share	7,300,000	Ultimate Federal Share	7,300,000
Initial Non-Federal Share	0	Ultimate Non-Federal Share	0

Development of the Detailed Design Report (DDR) is being performed by a "Regional Team" composed of individuals from the Vicksburg, St Louis, St Paul, Rock Island, and New Orleans Districts.

Fiscal Year 2007 funds are being used for development of the DDR. The DDR will be subjected to an Independent Technical Review (ITR) in Fiscal Year 2007, and preparation of plans and specifications will be initiated.

Funds requested for Fiscal Year 2008 will be used to continue plans and specifications for the initial construction contract.

The project is not authorized for construction. The PED completion date is being determined.

\* Assumed allocation. Final, actual allocations yet to be determined.

COMMERCIAL NAVIGATION  
INVESTIGATIONS  
NORTH ATLANTIC DIVISION

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
SURVEYS – (Navigation)							
MASSACHUSETTS							
Boston Harbor, MA New England District	2,601,000	1,111,000	516,000	297,000	300,000 *	377,000	0

Boston Harbor is located along the eastern coast of Massachusetts and is New England's largest port serving as the principal distribution point for the commerce of Massachusetts, New Hampshire and Vermont. In 2004, waterborne commerce totaled 25.8 million tons, of which approximately 70 percent were liquid petroleum products. The inner harbor is comprised of the Main Ship, Reserved, Chelsea River and Mystic River Channels. The Massachusetts Port Authority (Massport) has been upgrading facilities at Conley Terminal, which is located along the southerly side of the Reserved Channel. In addition, Massport has plans to expand Conley Terminal onto the adjacent Coastal Oil Terminal property and to develop a bulk cargo terminal at nearby North Jetty Terminal, increasing the number of berths that would benefit from deeper channels. The Port of Boston Competitiveness Task Force Report, dated December 1998, concluded that the channels accessing Conley Terminal must be dredged to at least 45 feet for New England companies to remain competitive by receiving containerized cargo by direct ocean going service. Ships drawing 45-foot drafts now make 3 calls a week to Boston Harbor. Navigation improvements to deepen portions of Boston Harbor to at least 45 feet would increase the efficiency of harbor operations and reduce tidal delays for larger vessels. A feasibility cost-sharing agreement (FCSA) was executed with Massport on 27 June 2002. Massport requested an amendment to the FCSA to investigate deepening the Chelsea and Mystic River Channels to 40 feet. The reconnaissance report, certified in August 2001, recommended deepen the Main Ship, Reserved, and Entrance Channels to 45 feet.

Fiscal Year 2006 funds were used to continue the feasibility phase, including channel design efforts, ship simulation studies, environmental resource surveys and multi-port, multi-modal economic analysis.

Fiscal Year 2007 funds are being used to continue the feasibility phase, including preparation of a draft feasibility report and SEIS.

Fiscal Year 2008 funds will be used to complete the feasibility phase, including preparation of the final feasibility report and SEIS, and technical reviews. The estimated cost of the feasibility phase is \$5,034,000, which is to be cost shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of the study cost sharing is as follows:

Total Estimated Study Cost	\$5,118,000
Reconnaissance Phase (Federal)	84,000
Feasibility Phase (Federal)	2,517,000
Feasibility Phase (Non-Federal)	2,517,000

The reconnaissance phase was completed in June 2002. The feasibility study is scheduled to be completed in September 2008.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.



APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
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VIRGINIA

Norfolk Harbor and Channels, Craney Island, VA Norfolk District	10,350,000	0	0	0	1,100,000 *	3,000,000	6,250,000
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The Craney Island Dredged Material Management Area (CIDMMA) is a 2,500 acre man-made containment area located along the south bank of the James River in Portsmouth, VA. It was authorized by the River and Harbor Act of 1946 and constructed from 1956 through 1958. Craney Island is Federally owned and operated and is used by private interests, local municipalities, and Federal and Commonwealth Government agencies for disposal of dredged material from Norfolk Harbor and adjacent waterways. The Virginia Port Authority, an agency of the Commonwealth of Virginia, has expressed interest in expanding the containment area to the east. The expansion will extend the useful life of the CIDMMA and provide an area that could be developed as a long-term berthing and port facility adjacent to the Norfolk Harbor Channel.

The Chief of Engineers issued his report on 24 October 2006. The recommended project, estimated to cost \$703,900,000 with an estimated federal cost of \$26,800,000 and an estimated non-federal cost of \$677,100,000, is the locally preferred plan that includes a 580-acre eastward expansion of the existing Craney Island, suitable to construct a port facility on, a 50 foot deep access channel to the existing Norfolk Harbor 50 foot deep channel and a compensatory mitigation plan. The average annual benefits amount to \$333,300,000 for reduction of dredge material placement cost and transportation cost savings. The benefit-to-cost ratio is 4.4 to 1 based upon the economic analysis in the approved feasibility study dated August 2006. By letter dated 27 July 2006, the Virginia Port Authority understands the preconstruction engineering and design cost-sharing requirements and is expected to be the non-Federal sponsor for this effort. The design agreement is scheduled for execution in July 2007. Preconstruction engineering and design will ultimately be cost-shared at the rate for the project to be constructed but will be financed through the preconstruction engineering and design period at 25 percent non-Federal. Any adjustments that may be necessary to bring the non-Federal construction in line with the project cost-sharing will be accomplished in the first year of construction. The Virginia Port Authority has a requirement to complete the preconstruction engineering and design effort in two years and has expressed an interest to advance and/or contribute non-Federal funding to meet this commitment.

Total Estimated Preconstruction Engineering and Design Effort Cost	\$13,800,000	Total Estimated Preconstruction Engineering and Design Effort Cost	\$13,800,000
Initial Federal Share	10,350,000	Ultimate Federal Share	550,000
Initial Non-Federal Cost	3,450,000	Ultimate Non-Federal Share	13,250,000

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
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PRECONSTRUCTION ENGINEERING AND DESIGN ACTIVITIES (PED) – (Navigation)

VIRGINIA

Norfolk Harbor and Channels, Craney Island, VA (Continuing)  
Norfolk District

Consistent with the cost sharing and financing concepts enacted by the Water Resources Development Act of 1986 and 1996, local interests are required to provide all lands, easements, rights-of-ways, relocations necessary for the construction, and disposal areas. The Chief of Engineers report recommends a locally preferred plan with the local interest paying 96 percent of all costs allocated to construction of the disposal cell and associated dredging.

Fiscal Year 2007 funds will be used to execute the design agreement and initiate the engineering and design phase of the project.

Fiscal Year 2008 funds will be used to continue the engineering and design efforts. The schedule for completion of the PED effort is to be determined.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.

COMMERCIAL NAVIGATION  
INVESTIGATIONS  
PACIFIC OCEAN DIVISION

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Division: Pacific Ocean Division

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Barbers Point Harbor Modification, Oahu, H Honolulu District	1,889,000	1,601,000	40,000	198,000	0 *	50,000	0

\* Assumed allocation. Final actual allocations are yet to be determined.

Barbers Point Harbor is located on the Ewa plains along the western coast of the Island of Oahu, Hawaii, and is situated adjacent to the 1,367-acre James Campbell Industrial Park (Oahu's major industrial area) and the 800-acre Kapolei Business Park. The harbor was originally intended to serve as a deepwater relief harbor for the port of Honolulu and to service the shipping requirements of the industries at Campbell Industrial Park, thus eliminating or reducing the need for considerable overland transshipment expense involved in importing and exporting via Honolulu Harbor and the congested Honolulu metropolitan area. However, the rapid development and growth of the Ewa plains region and the establishment of the community of Kapolei as Oahu's second urban center near Barbers Point have placed increased importance and demand on the harbor to service the growing communities, businesses, and industries in the Ewa area. The recommended plan, estimated to cost \$31.0 million (\$23.2 million Federal; \$7.8 million non-Federal), is to deepen the entrance and access channels to -44 feet and also deepen the turning basin to -42 feet.

The local sponsor is the State Department of Transportation and they are willing to meet the cost sharing requirements for Preconstruction Engineering and Design (PED) and subsequent project construction in accordance with project cost sharing. PED will ultimately be cost shared at the rate for the project to be constructed but will be financed through the PED period at 25% non-Federal.

Fiscal Year 2007 funds are being used to continue work on the draft Feasibility Report/Supplemental Environmental Impact Statement.

Fiscal Year 2008 funds will be used to complete technical and policy reviews of Feasibility Report/Supplemental Environmental Impact Statement and negotiation of PED agreement. Completion of feasibility phase scheduled for January 2008.

A summary of cost sharing is as follows:

Total Estimated Study Cost	\$3,403,000
Reconnaissance Phase (Federal)	375,000
Feasibility Phase (Federal)	1,514,000
Feasibility Phase (Non-Federal)	1,514,000

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: Pacific Ocean Division

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
<b>PRECONSTRUCTION ENGINEERING AND DESIGN (PED) ACTIVITIES – Navigation</b>							
Maalaea Harbor, Maui HI, Honolulu District	4,939,000 <sup>1/</sup>	4,688,000	89,000	-8,000	0 *	150,000	20,000

<sup>1/</sup> PED partially funded with Construction funds.

\* Assumed allocation. Final actual allocations are yet to be determined.

Maalaea Bay is situated on the southwest coast of Maui, approximately 7 miles south of Wailuku, the county seat of Maui, State of Hawaii. Vessels moored in the existing State-owned facility at Maalaea Harbor have experienced surge and wave action from ocean swells generated by storms occurring in the southern hemisphere. The existing entrance channel is open to southerly swells and storm waves that directly enter the harbor basin causing damages to the vessels moored inside. The surge action renders much of the harbor basin unusable for safe mooring of vessels. The recommended project, estimated to cost \$19.9 million with an estimated Federal cost of \$17.9 million and an estimated non-Federal cost of \$2.0 million, includes the enlargement, deepening and the relocation of the entrance channel and extension of the existing south breakwater to reduce surge and wave action within the basin. These improvements would also increase the usable harbor basin area allowing Maui District boaters currently awaiting slips at Maalaea to safely wet-store their vessels at the harbor and provide safer navigation conditions for vessels using the facility. The harbor, when fully developed, would have a basin area of 13.5 acres with a maximum capacity of approximately 220 boats. The average annual benefits are \$4.6 million. The benefit-cost ratio is 3.70 to 1 at 7 percent. The non-Federal sponsor is the State of Hawaii. The entire local share of the project first costs was appropriated by the 1989 State of Hawaii Legislature for the Harbors Division Capital Improvement Program for the fiscal 1990-1991 biennium, but has since been rescinded due to delays in finalizing the design, caused by environmental concerns. The funds will be reinstated prior to the construction award. The final EIS was filed with the EPA on April 28, 1980. A supplement to the EIS was completed in July 1994. The draft second supplement to the EIS was completed and circulated in May 1998. Numerous public and agency comments and concerns were received regarding the project's impacts on coral reef and surfing resources. These concerns are currently being addressed and include an independent review of alternatives and physical model studies to evaluate the impacts of alternative project features on surfing sites and navigability.

Fiscal Year 2007 funds are being used to continue the PED activities.

Fiscal Year 2008 funds will be used to continue work on the ready-to-advertise (RTA) package and PCA.

A summary of study cost sharing is as follows:

Total Estimated Preconstruction Engineering and Design Costs	4,939,000	Total Estimated Preconstruction Engineering and Design Costs	4,939,000
Initial Federal Share	4,939,000	Ultimate Federal Share	3,951,000
Initial Non-Federal Share	0	Ultimate Non-Federal Share	988,000

5 February 2007

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: Pacific Ocean Division

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
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PRECONSTRUCTION ENGINEERING AND DESIGN (PED) ACTIVITIES – Navigation

Maalaea Harbor, Maui HI,  
Honolulu District

This project is authorized for construction by Section 101 of the Rivers and Harbors Act of 1968 (Public Law 90-483) in accordance with provisions contained in House Document No. 353, 90<sup>th</sup> Congress, 2nd Session, dated July 8, 1968. .

The scheduled completion date of the PED phase is yet to be determined.

5 February 2007

COMMERCIAL NAVIGATION  
INVESTIGATIONS  
SOUTH ATLANTIC DIVISION

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008  
 Division: South Atlantic

Study/Project	Total Estimated Federal Cost \$	Allocation Prior to FY 2007 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
PRECONSTRUCTION ENGINEERING AND DESIGN (PED) ACTIVITIES - NAV					
Savannah Harbor Expansion	6,073,000	3,953,000	1,100,000*	700,000	320,000
Savannah District					

\*Assumed allocation. Final, actual allocations yet to be determined.

The Savannah Harbor area includes the lower 21.3 miles of the Savannah River, which is the principal boundary between the states of Georgia and South Carolina. The city of Savannah is located about 18 miles from the river mouth. Results of the South Atlantic Cargo Traffic Container Study indicate the current 2.0 million twenty-foot equivalent units (TEU) through South Atlantic Ports is projected to exceed 13 million TEU by the year 2050; this volume is greater than today's total U.S. containerized trade. The non-Federal interest, Georgia Ports Authority (GPA), conducted the feasibility study under the authority of Section 203 of the Water Resources Development Act of 1986 (WRDA 86) and was responsible for funding all associated feasibility study costs. The Feasibility Report was submitted to the Secretary of the Army in August 1998. The project, authorized in WRDA 99, is estimated to cost \$246,400,000, with an estimated Federal cost of \$142,063,000 and an estimated non-Federal cost of \$104,337,000 includes deepening the harbor channel from 42 feet up to 48 feet (2001 price levels). The average annual benefits amount to \$35.2 million, all for commercial navigation. The benefit-cost ratio is 3.0 to 1 at 7-1/8 percent based on the latest economic analysis dated August 1998. The Georgia Ports Authority is aware of project cost sharing requirements. PED may ultimately be cost shared under the authority of Section 204 of WRDA 86 (at the rate for the project to be constructed), but will be financed through the PED period at 81 percent non-Federal and 19 percent Federal. Upon completion of construction, credit will be given to the local sponsor for the Federal share of the PED cost.

Total Estimated Preconstruction		Total Estimated Preconstruction	
Engineering and Design Costs	\$31,273,000	Engineering and Design Costs	\$31,273,000
Initial Federal Share	6,073,000	Ultimate Federal Share	23,454,750
Initial Non-Federal Share	25,200,000	Ultimate Non-Federal Share	7,818,250

In accordance with the cost sharing and financing concepts reflected in WRDA 86, non-Federal interests will be required to provide lands, easements, rights of way, and dredged material disposal areas; modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary, for the construction of the project; pay 25 percent of the cost of construction of the portion of the project which has a depth in excess of 20 feet but not in excess of 45 feet; pay 50



APPROPRIATION TITLE: General Investigations, Fiscal Year 2008  
 Division: South Atlantic

Study/Project	Total Estimated Federal Cost \$	Allocation Prior to FY 2007 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
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Savannah Harbor Expansion  
 Savannah District  
 (continued)

percent of the cost of construction of the portion of the project which has a depth in excess of 45 feet; and reimburse an additional 10 percent of the cost of general navigation features 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 material disposal areas provided for commercial navigation.

Fiscal Year 2007 funds are being used to continue Federal oversight and begin the development of the Tier II Environmental Impact Statement (EIS) (including funding the other Federal Cooperating Agencies for their work and involvement with the Tier II EIS). GPA, via the Stakeholders Evaluation Group (SEG), is seeking to develop a consensus, incorporating input from local government, resource agencies, non-governmental organizations (NGO) and the Federal government on the optimum project scope, not exceeding 48 feet deep.

Fiscal Year 2008 funds will be used to complete Federal oversight of the GRR and the completion of the Tier II EIS development, as well as continue to fund the other Federal Cooperating Agencies for their participation and review. Scheduled completion date for the Tier II EIS and General Reevaluation Report (GRR) is May 2008. Record of Decision slated for September 2008. PED completion date is to be determined.

COMMERCIAL NAVIGATION  
INVESTIGATIONS  
SOUTHWESTERN DIVISION

ILLUSTRATION A-2.2  
COST-SHARED FEASIBILITY STUDY

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Division: Southwestern

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Brazos Island Harbor, Brownsville Channel, Texas Galveston District	3,516,000	100,000	25,000	767,000	500,000	400,000	1,724,000

The Port of Brownsville is located on the south Texas coast near the US-Mexican border. The study area encompasses the entire Brazos Island Harbor and surrounding region. The entrance channel is located offshore of Cameron County, Texas, in the Gulf of Mexico and ends at the Port of Brownsville Main Harbor in the City of Brownsville. The existing channel is 42-feet deep (plus 2-feet over-depth) by 300-foot wide entrance channel for a distance of 2.5 miles converging to a natural water depth of 44-feet in the Gulf of Mexico; a 42-foot deep by 250-foot wide by 14.8 miles long channel within the inland segment of the waterway; a 42-foot deep by widths varying from 325 to 400 feet at the turning basin for a length of 5,200 feet; and the final segment of the Brownsville Turning Basin at a depth of 36 feet and a width of 1,200 feet. The most recent deepening was authorized by the Water Resources Development Act of 1986. Project construction was completed in 1996. The proposed study will address the feasibility of deepening the entrance and jetty channel (2 miles) to 48 feet, deepen the lower 9 miles of main channel to 48 feet and deepen the upper 7 miles of main channel and turning basin to 45 feet. Benefits are expected to be obtained from reduced transportation costs due to more fully loaded vessels, increased efficiencies associated with serving the U.S. offshore rig industry, and the restoration of up to 6,500 acres of tidal marsh habitats. Brownsville is primarily a bulk commodity port covering both liquid and dry cargo handling. It is an important in-transit port for trade to and from Mexico. In 2002, Brownsville was the nation's second largest in-transit harbor by volume. Total tonnage on the Brazos Island Harbor increased from 1,829,000 tons in 1992 to 4,741,000 tons in 2002; a difference of 2,912,000 tons. In addition to traditional vessel traffic, there is a need for increased channel dimensions in order to serve offshore rigs presently operating in the U.S. Gulf Coast. The operational draft of the newer rigs ranges from 45 to 63 feet. The project will contribute to the restoration of over 6500 acres of tidal marsh habitats, as well as brush habitat with the Bahia Grande in collaboration with federal and state agencies. This entire marsh was destroyed by the mid-20<sup>th</sup> Century due to loss of tidal connection by surrounding development. Marsh restoration associated with the project will provide feeding, breeding, and wintering habitat for colonial and migratory water birds, and provide connective habitat to the Atascosa National Wildlife Refuge. The Non-Federal Sponsor for the project is the Brownsville Navigation District. The Feasibility Cost Sharing Agreement (FCSA) was executed in June 2006. Prior to the start of feasibility, the Consolidated Appropriations Act, 2003, (PL 108-7), Section 113 (credit for wetlands restoration), authorized the Secretary of the Army to provide credit to the non-Federal sponsor for work performed to restore the wetlands at Bahia Grande, Lower Laguna Madre, and Vadia Ancha as environmental mitigation for project impacts..

Fiscal Year 2007 funds are being used to conduct more detailed environmental, economic, engineering, and real estate reviews of the alternatives. Fiscal Year 2007 funds will also be used on necessary modeling (ship simulation, currents, sediment) studies and various engineering surveys and borings necessary to select the recommended plan. Fiscal Year 2008 funds will be used to screen alternatives and develop the National Economic Development (NED) plan.

6 February 2007

Brazos Island Harbor, Brownsville Channel, TX (Continued)

The preliminary estimated cost of the feasibility phase is \$6,722,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of the study cost is as follows:

Total Estimated Study Cost	\$6,877,000
Reconnaissance Phase (Federal)	155,000
Feasibility Phase (Federal)	3,361,000
Feasibility Phase (non-Federal)	3,361,000

The reconnaissance phase was completed in June 2006 with the execution of the Feasibility Cost Sharing Agreement. The scheduled completion date of the feasibility phase of the study is to be determined.

ILLUSTRATION A-2.2  
COST-SHARED FEASIBILITY STUDY

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Division: Southwestern

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Freeport Harbor, Texas Galveston, TX	2,796,000	662,000	418,000	495,000	500,000	721,000	0

The Freeport Harbor project is located along the mid to upper Texas coast, and is formed by the improvement of the Brazos River, Texas, from the mouth about 6 miles upstream to Freeport, Texas. It provides for a 47 foot deep, 400 foot wide entrance channel; 45 foot deep, 400 foot wide main channel; 45 foot deep, 750 foot diameter turning basin; a 45 foot deep, 1000 foot diameter Brazos Port Turning Basin; a 45 foot deep, 1200 foot diameter Upper Turning Basin, 36 foot deep, 200 foot wide Brazos Harbor channel; and 36 foot deep, 750 foot diameter Brazos Harbor turning basin. The local sponsor, the Brazos River Harbor Navigation District, is interested in examining the feasibility of improvements to the existing deep draft navigation channel and to determine the Federal interest in expanding the reach of the navigation channel to the Stauffer Channel and turning basin. Freeport Harbor is an important port for imported petroleum products, exported petrochemicals, and general cargo. The existing channel is not sufficiently deep to fully load the existing tanker fleet serving Freeport Harbor. Further, the 400-foot wide entrance and main channels limit Freeport Harbor to one-way traffic for all vessels and daylight-only operation for larger vessels. The light-loading, one-way traffic and daylight-only operation result in significantly higher cost to users than would be experienced if the harbor were enlarged and deepened. Average annual benefits due to the improved efficiency of using larger vessels are currently estimated at over \$20 million from deepening the channel and over \$4 million for widening the channel. The Brazos River Harbor Navigation District signed a Feasibility Cost Sharing Agreement (FCSA) in July 2003. Freeport Harbor is an existing Federally authorized navigation channel. For safety reasons, the Port is seeking a permit to expedite widen the channel prior to the completion of the Federal project to provide for safe passage of large Liquefied Natural Gas (LNG) ships that are expected to use the Port as soon as ongoing construction of a LNG processing facility is complete, The Port Freeport is pursuing assumption of maintenance under Section 204(f) of WRDA 86 for a proposed improvement to the Freeport Harbor Channel

Fiscal Year 2007 funds are being used to continue feasibility phase of the study to include preparing engineering appendix; real estate gross appraisal; environmental impact analysis; and initiate draft feasibility report and advanced draft environmental impact study. Fiscal Year 2008 funds will be used to complete the draft feasibility report and draft environmental impact study, hold an alternatives formulation briefing scheduled for July 2007, and complete final feasibility report and environmental impact statement.

The cost of the feasibility phase is \$5,342,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of the study cost is as follows:

Total Estimated Study Cost	\$ 5,467,000
Reconnaissance Phase (Federal)	125,000
Feasibility Phase (Federal)	2,671,000
Feasibility Phase (Non-Federal)	2,671,000

The reconnaissance phase was completed in July 2003. The feasibility study is scheduled to be completed in September 2008.

ILLUSTRATION A-2.4  
PRECONSTRUCTION ENGINEERING AND DESIGN

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Division: Southwestern

Study	Total Estimated Federal Cost	Allocation Prior to FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Texas City Channel, TX Galveston District	5,898,000	2,818,000	986,000	894,000	900,000	300,000	0

The project is located in Galveston Bay and serves the petrochemical industry to Texas City, Texas, which lies 10 miles northwest of Galveston and 35 miles southeast of Houston. In 2004, the Port of Texas City handled over 65 million short tons of crude oil, petroleum products and chemical products and was ranked the ninth largest port in the U.S. The Texas City Channel is a 7.3-mile long deep draft channel extending from Bolivar Roads in Galveston Bay to Texas City, Texas. The channel has a protective rubble-mound dike, 28,200 feet long along the northerly side of the channel. The benefit-cost ratio for this improvement is 8.3 to 1 as an individual modification based on October 1988 price levels and 7 5/8 percent interest rate. The Port of Texas City is essentially a crude oil importing facility, and development of a deeper channel has been a high priority of the local sponsor and the users since the oil crisis of the mid1970's. The city of Texas City, Texas is the sponsor for the project. By letter, dated April 2001, the city of Texas City indicated their desire to provide financial support, and a willingness to cost share construction of the project. The non-Federal sponsor requested reevaluation studies be accomplished to determine the feasibility of deepening the navigation channel to 45 feet to be consistent with the Galveston Harbor and Channel Deepening and to maintain the present channel and turning basin widths. The General Reevaluation Report (GRR) for a 45-foot channel will be finalized in the July 2007. Preconstruction Engineering and Design (PED) is being conducted at up-front Federal financing. The non-Federal sponsor's cost share will be provided in the first year of construction.

The project is authorized for construction by the Water Resources Development Act (WRDA) of 1986. A preliminary costs estimate for the reevaluated plan of a channel depth of 45 feet is \$63,100,000 based on the draft GRR dated January 2007. Federal costs are estimated at \$47,325,000 and non-Federal costs at \$15,775,000 and results in a 4.4 to 1 benefit-cost ratio, based on March 2006 price levels and 7.0 percent interest rate. This would result in a non-Federal contribution of 25 percent of project construction costs (including design). In addition, the non-Federal sponsor would be responsible for lands, easements, rights-of-way, and relocations; if their share does not equal 10 percent of the construction cost, a cash payment would be required for the difference.

Fiscal Year 2007 funds are being used to complete the reevaluation and environmental studies, including preparing the final GRR and Supplemental Environmental Assessment, Engineering Appendix, and initiate the first set of Plans and Specifications. Fiscal Year 2008 funds will be used to complete the Preconstruction and Engineering which includes the first set of Plans and Specifications. The completion date for Preconstruction Engineering and Design is September 2008.

# CONSTRUCTION

COMMERCIAL NAVIGATION  
CONSTRUCTION  
GREAT LAKES AND OHIO RIVER DIVISION



APPROPRIATION TITLE: Construction General - Locks & Dams (Navigation)

PROJECT: Chickamauga Lock and Dam, Tennessee River, Tennessee (Continuing)

LOCATION: The project is located on the Tennessee River at Mile 471.0 about 7 miles upstream of Chattanooga, Tennessee.

DESCRIPTION: Chickamauga Lock has structural problems that result from ongoing alkali aggregate reaction (AAR) that cause the concrete to physically expand and this is threatening the structural integrity of the lock. A construction start was provided in the FY 2004 Energy & Water Development Appropriations Bill, P.L. 108-357.

AUTHORIZATION: Section 114 of the FY 2003 Energy & Water Development Appropriations Bill, P.L. 108-7.

REMAINING BENEFIT-REMAINING COST RATIO: 1.3 at 7.0 percent.

TOTAL BENEFIT-COST RATIO: 1.5 at 7.0 percent.

INITIAL BENEFIT-COST RATIO: 2.0 at 6 3/8 percent

BASIS OF BENEFIT COST RATIO: Benefits are from the latest available evaluation approved in June 2005 at FY01 price levels.

SUMMARIZED FINANCIAL DATA

			STATUS (1 Jan 2007)	PCT CMPL	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost		\$349,000,000			
Construction General	\$174,500,000				
Inland Waterways Trust Fund	\$174,500,000				
Total Estimated Project Cost		\$349,000,000	Entire Project	10%	TBD

PHYSICAL DATA

Lock Chamber (New) 110 ft. x 600 ft.

Division: Great Lakes and Ohio River

District: Nashville

Chickamauga Lock and Dam, Tennessee River, TN

February 2007

SUMMARIZED FINANCIAL DATA (Continued)

	CONSTRUCTION GENERAL	INLAND WATERWAYS TRUST FUND	ACCUM. PCT. OF EST. FED. COST
Allocations to 30 September 2004	3,567,000	3,567,000	
Allocation for FY 2005	7,552,000	7,552,000	
Allocation for FY 2006	4,950,000	4,950,000	
Conference Allowance for FY 2007	13,500,000	13,500,000	
Allocation for FY 2007	13,500,000	13,500,000	
Allocations through FY 2007	29,569,000	29,569,000	17
Allocation Requested for FY 2008	17,600,000	17,600,000	27
Programmed Balance to Complete after FY 2008	127,331,000	127,331,000	
Unprogrammed Balance to Complete after FY 2008	0	0	

JUSTIFICATION: The existing 60-foot X 360-foot Chickamauga Lock, which was completed in 1940, is plagued with “concrete growth” resulting from an alkali-aggregate reaction (AAR). This reaction creates a gel that absorbs moisture, swells, and expands the concrete. When the concrete is restrained, the growth increases internal stresses, which causes cracking and movement of the concrete monoliths. This movement causes equipment misalignment as well as structural instability. The growth is continuing, therefore non-standard, major maintenance is significantly increasing, raising both expenses and lock outages. Under an economic scenario, the cost for maintaining the lock will determine when the lock should be closed. With significant annual maintenance, Chickamauga Lock can be economically kept open until at least the year 2010. Beyond that time, the accelerating rate of deterioration will increase both in the frequency and cost of major repairs. As the lock deteriorates, there is the added risk that the owner, Tennessee Valley Authority, will close the lock due to safety concerns. Lock closure before a new lock is in place will shut off 318 miles of river above Chattanooga, including river access to Knoxville and Oak Ridge, TN. Closing off the upper river to navigation impacts ability to barge asphalt for highway construction in these areas and critical oversized components such as nuclear steam generators and components of the \$1.7 billion Spallation Neutron Source program (moved by water transportation). The 110-foot x 600-foot replacement lock will reduce lock transit time and will be consistent with the size of the six locks downstream on the Tennessee River.

FISCAL YEAR 2008: The requested amount will be applied as follows:

Division: Great Lakes and Ohio River

District: Nashville

Chickamauga Lock and Dam, Tennessee River, TN

February 2007

Continue Cofferdam Construction Contract	\$28,500,000
Planning, Engineering, and Design	4,800,000
Construction Management	1,900,000
Total	\$35,200,000

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, 50 percent of the total cost for the project will be derived from the Inland Waterways Trust Fund.

STATUS OF LOCAL COOPERATION: None required.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$349,000,000 is an increase of \$30,000,000 from the latest estimate (\$310,000,000) submitted to Congress (FY 2007). The change includes the following items:

Item	Amount
Price Level Updating and Inflation	\$ 8,500,000
Increase in Real Estate Costs	900,000
Increase in Cofferdam Construction Estimate	20,600,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: A Final Supplemental Environmental Impact Statement was included in the Feasibility Report dated February 26, 2002. The Record of Decision was signed on July 20, 2004.

OTHER INFORMATION: Funds to initiate construction were appropriated in FY 2004.



**US Army Corps of Engineers**

Great Lakes and Ohio River Division  
Nashville District

**1**  
Rd/Bridge  
Relocation

Utilities  
Relocation

**2**  
Cofferdam  
Construction

**3**  
110' x 600'  
Lock Construction

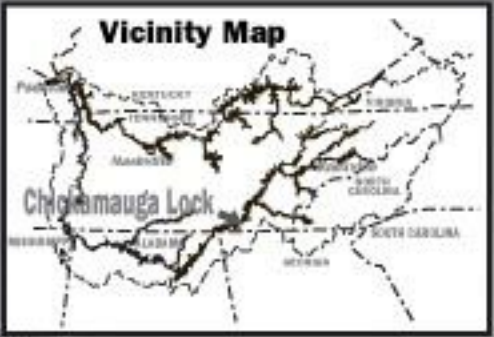
Hwy 153

"NEW" Lake Resort Dr.  
Lake Resort Dr.

N. Chickamauga Creek

Access Rd.

Tennessee River



**Legend - Status of Work By Major Construction Features**

<b>1,2</b>	Work proposed with funds received in FY 2007
<b>2</b>	Work proposed with funds requested for FY 2008
<b>2,3</b>	Work required to complete project after FY 2008

APPROPRIATION TITLE: Construction General - Locks & Dams (Navigation)

PROJECT: Kentucky Lock and Dam, Tennessee River, Kentucky (Continuing)

LOCATION: The project is located on the Tennessee River at Mile 22.4 near Grand Rivers, Kentucky.

DESCRIPTION: The modernization of the existing facility will include the addition of a 110-foot x 1200-foot lock landward and adjacent to the existing 110-foot x 600-foot lock, and the relocation of an existing railroad, highway, and powerhouse access road. The railroad and highway will be relocated downstream of the new lock's lower gates and will require the construction of new bridges across the river. The powerhouse access road will be relocated from the east bank to the west bank and will require the construction of a new ramp.

AUTHORIZATION: The Water Resources Development Act of 1996.

REMAINING BENEFIT-REMAINING COST RATIO: 3.3 at 7.0 percent.

TOTAL BENEFIT-COST RATIO: 2.5 at 7.0 percent.

INITIAL BENEFIT-COST RATIO: 1.8 at 8 percent (FY 1998).

BASIS OF BENEFIT COST RATIO: Benefits are based on the Limited Reevaluation Report approved in November 1995 and costs are based on a 2003 update of the Innovated Design/Cost Reduction Studies completed in June 1995.

SUMMARIZED FINANCIAL DATA

Estimated Federal Cost		\$643,200,000
Construction General	\$321,600,000	
Inland Waterways Trust Fund	\$321,600,000	
Total Estimated Project Cost		\$643,200,000

STATUS  
(1 Jan 2007)

PCT  
CMPL

PHYSICAL  
COMPLETION  
SCHEDULE

Entire Project

29

TBD

PHYSICAL DATA

Lock Chamber (New)  
Bridges

110 ft. x 1200 ft.

Railroad (New)  
Highway (New)

3100 ft.  
3100 ft.

Division: Great Lakes and Ohio River

District: Nashville

Kentucky Lock and Dam, Tennessee River, KY

February 2007

SUMMARIZED FINANCIAL DATA (Continued)

	CONSTRUCTION GENERAL	INLAND WATERWAYS TRUST FUND	ACCUM PCT OF EST FED COST
Allocations to 30 September 2004	67,164,000	67,164,000	
Allocation for FY 2005	14,186,000	14,186,000	
Allocation for FY 2006	11,385,000	11,385,000	
Conference Allowance for FY 2007	7,500,000	7,500,000	
Allocation for FY 2007	7,500,000 <sup>1/</sup>	7,500,000 <sup>1/</sup>	
Allocations through FY 2007	100,235,000	100,235,000	31
Allocation Requested for FY 2008	26,000,000	26,000,000	39
Programmed Balance to Complete after FY 2008	195,365,000	195,365,000	
Unprogrammed Balance to Complete after FY 2008	0	0	

<sup>1/</sup> Assumed allocation, Final, actual allocations yet to be determined.

JUSTIFICATION: The existing 110-foot x 600-foot Kentucky Lock is too small to handle a modern 15-barge tow without two lockages. This greatly increases the processing time resulting in Kentucky Lock having one of the highest average delay times on the inland waterway system. Delays at the lock averaged over 5.7 hours per tow in 2005. System traffic is expected to grow annually from the 40.5 million tons recorded in 2005 to an estimated 77 million tons in 2050 resulting in a 38.4 hour average delay per tow. The addition of a new 1200-foot lock will greatly reduce these delays and generate \$71 million (FY03 dollars) in average annual benefits to the nation as a result of reduced cost to transport commodities through the system.

FISCAL YEAR 2007: The allocated amount will be applied as follows:

Continue Highway/Railroad Superstructure Contract	13,000,000
Planning, Engineering and Design	1,100,000
Construction Management	900,000
Total	15,000,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue Highway/Railroad Superstructure Contract	47,200,000
Planning, Engineering and Design	1,700,000
Construction Management	3,100,000
Total	52,000,000

Division: Great Lakes and Ohio River

District: Nashville

Kentucky Lock and Dam, Tennessee River, KY

February 2007

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, 50 percent of the total cost for the project will be derived from the Inland Waterways Trust Fund.

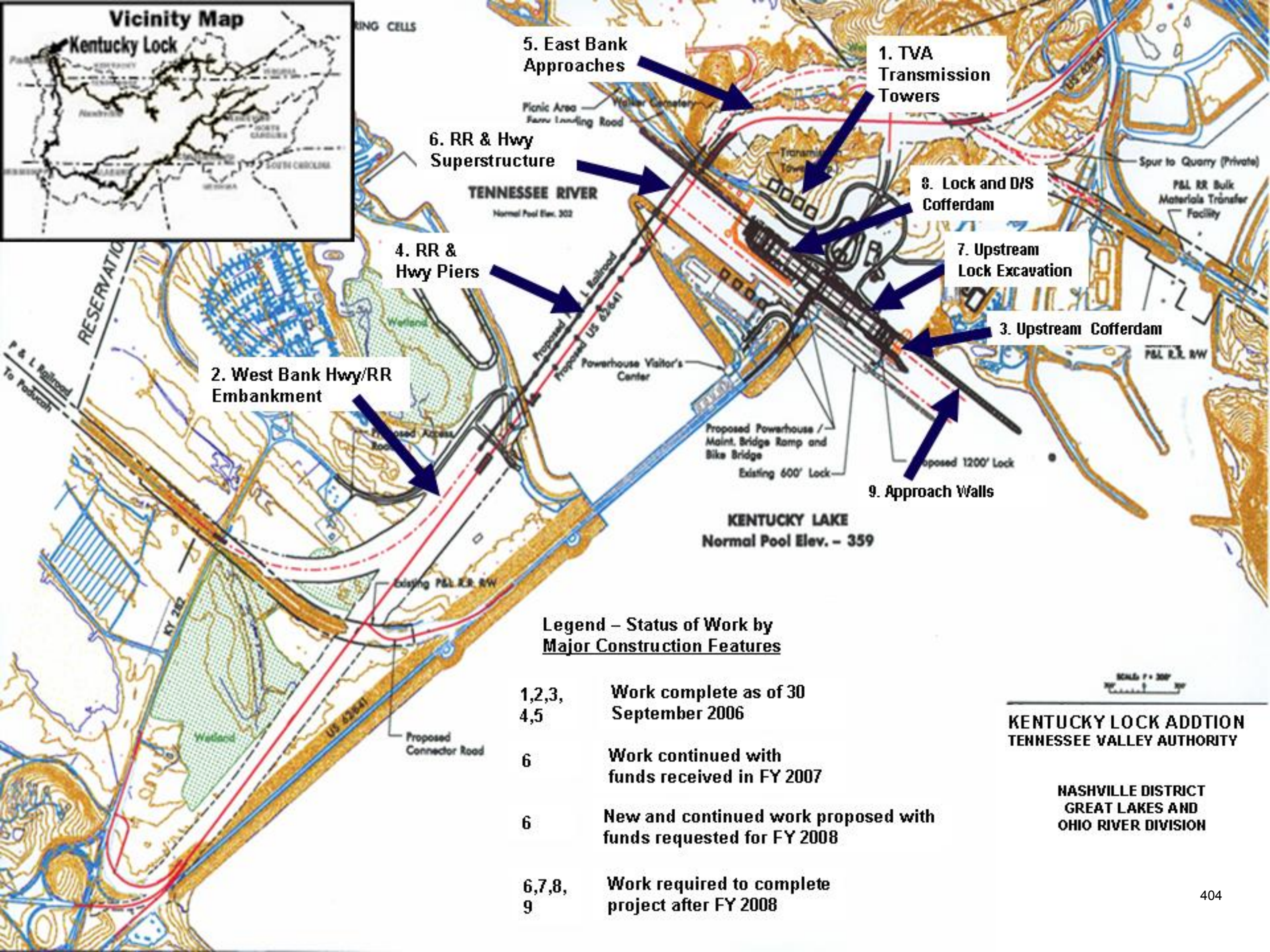
STATUS OF LOCAL COOPERATION: None required.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$643,200,000 is an increase of \$1,400,000 from the latest estimate (\$641,800,000) presented to Congress (FY 2007). The change includes the following items.

Item	Amount
Price Level Updating and Inflation	\$ 1,400,000
Total	\$ 1,400,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: An Environmental Impact Statement was included in the Final Feasibility Report and the Record of Decision was signed on March 26, 1998. A supplemental Environmental Impact Statement to address relocation feature changes and design refinements identified subsequent to the original report and Environmental Impact Statement was completed in 2001 and the Record of Decision was signed on July 20, 2001.

OTHER INFORMATION: Funds to initiate pre-construction engineering and design were appropriated in FY 1993. Funds to initiate construction were appropriated in FY 1998. The scheduled completion date is "To Be Determined."



**Legend - Status of Work by Major Construction Features**

1,2,3, 4,5	Work complete as of 30 September 2006
6	Work continued with funds received in FY 2007
6	New and continued work proposed with funds requested for FY 2008
6,7,8, 9	Work required to complete project after FY 2008

SCALE 1" = 200'

**KENTUCKY LOCK ADDITION**  
**TENNESSEE VALLEY AUTHORITY**

**NASHVILLE DISTRICT**  
**GREAT LAKES AND OHIO RIVER DIVISION**



APPROPRIATION TITLE: Construction, General - Locks and Dams (Navigation)

PROJECT: Marmet Locks and Dam, West Virginia (Continuing)

LOCATION: Marmet Locks and Dam is located in Kanawha County near Belle, West Virginia, on the Kanawha River approximately 68 miles above its confluence with the Ohio River. The pool is located entirely in West Virginia.

DESCRIPTION: The proposed modernization plan includes the construction of an additional 110 foot by 800 foot lock on the right descending bank landward of the existing locks. The plan includes the continued use of both existing 56 foot by 360 foot lock chambers as auxiliary locks and rehabilitation of the existing dam. The hydroelectric power plant will also remain in operation. A total of 216 real estate tracts are required to support the project. Of the 216 tracts, 179 are residential, 9 are commercial and 28 are vacant. All work is programmed.

AUTHORIZATION: Water Resources Development Act of 1996, sec. 101(a)(31); Energy and Water Development Appropriations Act, FY 2006, section 112.

REMAINING BENEFIT-REMAINING COST RATIO: 60.8 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 2.5 to 1 at 7 1/8 percent.

INITIAL BENEFIT-COST RATIO: 2.1 to 1 at 7 1/8 percent (FY 1998).

BASIS OF BENEFIT-COST RATIO: Economic Update dated June 1996 and at October 1995 price levels.

SUMMARIZED FINANCIAL DATA		STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost				
		Entire Project	95	To be determined
		Lock Operational	90	Spring 2008
Construction General	200,169,000			
Inland Waterways Trust Fund	200,169,000			
Total Estimated Project Cost				
		\$400,338,000		

Division: Great Lakes & Ohio River

District: Huntington

Marmet Locks and Dam, WV

5 February 2007

SUMMARIZED FINANCIAL DATA (Continued)

	GENERAL APPNS.	INLAND WATERWAYS TRUST FUNDS	ACCUM. PCT. OF EST. FED. COST
Allocations thru 30 September 2006	\$151,000,000	\$151,000,000	
Allocation requested for FY 2007	34,669,000*	34,669,000*	
Allocations through FY 2007	185,669,000*	185,669,000*	96
Allocation Requested for FY 2008	12,500,000	12,500,000	99
Programmed Balance to Complete after FY 2008	2,000,000	2,000,000	
Unprogrammed Balance to Complete after FY 2008	0	0	

PHYSICAL DATA

Lock:

Number – 3  
 Existing Chambers - 2 - 56 ft. x 360 ft.  
 Additional Chamber - 1 - 110 ft. x 800 ft.  
 Lift - 24 ft.

Lands and Damages:

Acres - 21, Existing Locks and Dam  
 - 103, New Lock

Structures: - 242 Residences  
 - 10 Businesses

JUSTIFICATION: Marmet Locks and Dam links the Kanawha Valley, an important chemical and coal producing area, to its product markets and supply areas. During 2005, 14.2 million tons of traffic locked through Marmet. Coal is the major commodity shipped on the Kanawha River, accounting for 93 percent of the total tonnage at Marmet. The Marmet project presents a significant impediment to the efficient flow of waterborne commerce due to its outdated features. Amendments to the Clean Air Act, passed in November 1990, have caused an increase in demand for the Kanawha River Basin's low-sulphur coal. The congestion is expected to increase as traffic on the river increases.

The average annual benefits, at 7 percent, are \$47,272,270, all commercial navigation.

\* Assumed allocation. Final, actual allocations yet to be determined.

Division: Great Lakes & Ohio River

District: Huntington

Marmet Locks and Dam, WV

5 February 2007

FISCAL YEAR 2007: The amount provided is being applied as follows:

Continue Lock Construction	\$ 56,100,000
Continue Real Estate Disposal	28,000
Continue Environmental Mitigation	460,000
Continue Cultural Resource Mitigation	460,000
Continue Buildings, Grounds, & Utilities	1,840,000
Continue Permanent Operating Equipment	2,044,000
Continue Planning, Engineering and Design	3,440,000
Continue Construction Management	2,920,000
Continue HTRW Remediation	2,046,000
 Total	 \$ 69,338,000*

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue Work Under Contract for Lock Construction	\$13,590,000
Continue Real Estate Disposal	26,000
Continue Cultural Resource Mitigation	460,000
Complete Environmental Mitigation	260,000
Continue Permanent Operating Equipment	1,044,000
Complete Buildings, Grounds, & Utilities	1,532,000
Continue Planning, Engineering and Design	4,482,000
Continue Construction Management	1,606,000
Complete HTRW Remediation	2,000,000
 Total	 \$25,000,000

NON-FEDERAL COST: In accordance with the cost sharing and financing contained in the Water Resources Development Act of 1986, 50 percent of the total costs of construction will be derived from the Inland Waterways Trust Fund.

STATUS OF LOCAL COOPERATION: None required.

\* Assumed allocation. Final, actual allocations yet to be determined.

Division: Great Lakes & Ohio River

District: Huntington

Marmet Locks and Dam, WV

5 February 2007

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$400,338,000 is an increase of \$41,038,000 from the latest estimate (\$359,300,000) presented to Congress (FY 2007).

This change includes the following items.

Item	Amount
Modification for Continuing Contract Clause	\$ 29,926,000
Price Escalation on Construction Features	1,460,000
Post Contract Award and other Estimating Adjustments	9,652,000
Total	\$ 41,038,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final EIS was filed with the Environmental Protection Agency (EPA) on January 26, 1994.

OTHER INFORMATION: Funds to initiate preconstruction engineering and design were appropriated in FY 1994. Funds to initiate construction were appropriated in FY 1998.

Environmental Site Assessments (Phase I and II) identified soil contamination at levels sufficient to warrant remedial activity. None of the contamination identified is considered hazardous; rather, it is a non-hazardous contaminant which requires that the soil be disposed of in a landfill in conformance with Subtitle D of the Resource Conservation and Recovery Act (RCRA). All environmental remedial actions are complete. No groundwater contamination was found.

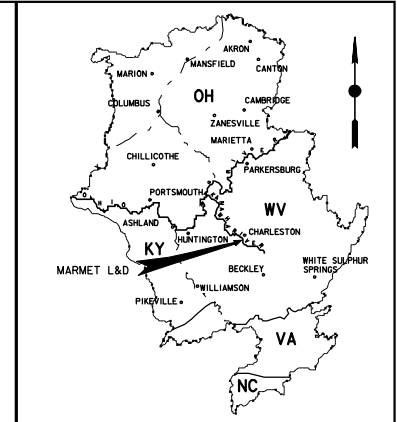
The Corps developed plans for the new lock construction to have minimum interference with river traffic during construction, but some interference is expected. The Corps established dialogue with the towing industry to determine the best methods to use to minimize interference. Installation of additional navigation mooring facilities was completed in December 2002. A helper boat was used to alleviate construction impacts associated with cofferdam construction which is now complete.

The project cost was reauthorized to \$358,000,000 by P.L. 109-103, section 112.



LANDS AND DAMAGES  
RELOCATIONS  
LOCKS

99%	1%		
100%			
90%	9%	1%	



VICINITY MAP  
50 25 0 50 100 FT  
SCALE: 1" = 50'

STATUS OF WORK

- WORK COMPLETED
- WORK UNDERWAY WITH FUNDS AVAILABLE FOR F.Y. 2007
- WORK PROPOSED WITH FUNDS REQUESTED FOR F.Y. 2008
- WORK REQUIRED TO COMPLETE THE PROJECT AFTER F.Y. 2008

PLAN  
100 75 50 25 0 100 200  
SCALE IN METERS

5 FEBRUARY 2007

KANAWHA RIVER  
MARMET LOCKS AND DAM  
HUNTINGTON DISTRICT  
GREAT LAKES AND OHIO RIVER DIVISION

APPROPRIATION TITLE: Construction – Locks and Dams (Navigation)

PROJECT: McAlpine Locks and Dam, Kentucky and Indiana (Continuing)

LOCATION: The project is located on the Ohio River at Louisville, Jefferson County, Kentucky, Ohio River mile 604.0 to 608.0.

DESCRIPTION: The modernization of the existing facility will replace a 600-foot auxiliary lock chamber and an inactive 360-foot 2-stage chamber with a 1,200-foot lock on the Kentucky bank side of the existing lock and dam. This effort will result in twin 1,200-foot locks for tow traffic. Construction of a new bridge is required to continue access to Shippingport Island and the Louisville Gas & Electric hydroelectric power facility.

AUTHORIZATION: The Water Resources Development Act of 1990.

REMAINING BENEFIT-REMAINING COST RATIO: 17 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 2.8 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 1.8 to 1 at 8 percent (FY 1996).

BASIS OF BENEFIT-COST RATIO: Benefits are based on the General Design Memorandum, Project Economic Update approved in March 1994, at 1994 price levels.

SUMMARIZED FINANCIAL DATA			STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost		\$ 430,000,000	Entire Project	72	To Be Determined
General Appropriations	215,000,000				
Inland Waterways Trust Fund	215,000,000				
PHYSICAL DATA					
Estimated Non-Federal Cost		0	Wharf Extension		35,400 sf
			Boat Mooring Facility		6,100 sf
Total Estimated Project Cost		\$ 430,000,000	Fixed Bridge		2,100 ft
			Lock Chamber (New)		110 by 1,200 ft
			Buildings:		
			Resident Engineer		6,100 sf
			Operations Service		2,300 sf
			Storage		5,100 sf

Great Lakes and Ohio River

District: Louisville  
7 February 2007

McAlpine Locks and Dam, KY and IN

SUMMARIZED FINANCIAL DATA (Continued)	GENERAL APPNS	INLAND WATERWAYS TRUST FUNDS	ACCUM. PCT. OF EST. FED. COST
Allocations to 30 September 2004	\$ 83,288,000	\$ 83,288,000	
Allocations for FY 2005	30,427,000	30,427,000	
Allocations for FY 2006	40,650,000	40,650,000	
Conference Allowance for FY 2007	35,000,000	35,000,000	
Allocation for FY 2007	35,000,000	35,000,000	
Allocations through FY 2007	189,365,000	189,365,000 1/	88
Allocation Requested for FY 2008	22,500,000	22,500,000	99
Programmed Balance to Complete after FY 2008	3,135,000	3,135,000	100
Unprogrammed Balance to Complete after FY 2008	\$ 0	\$ 0	

1/ Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: The new lock is in response to identified annual increases in tonnage levels and delays. The McAlpine Locks Project is one of the Inland Waterways Users Board Top Priority Capstone activities. Tonnages through the McAlpine Locks average 55 million per year and the latest commodities value for McAlpine is \$12.9 billion in 2004. Other project components include a fixed bridge spanning 2,100 feet, including 840 feet of embankment, and three one-story buildings for offices, service, and storage, an industrial wharf for miter gate erection and storage, and a boat mooring facility for small workboats. Construction of the 1,200 foot lock on an efficient schedule is imperative to minimize the risks associated with operating only one lock until the new lock is operational and the potential for closures due to needed major maintenance on the existing lock.

Average annual benefits at 7% percent are as follows:

Annual Benefits	Amount
Navigation from Reduced Delays	\$ 42,397,067
Total	\$ 42,397,067

FISCAL YEAR 2007: The Conference amount will be applied as follows:

Continue Lock Construction Contract	\$ 64,000,000
Complete Cultural Resources Contract	500,000
Planning, Engineering, and Design	1,500,000
Construction Management	4,000,000
Total	\$ 70,000,000

Great Lakes and Ohio River

District: Louisville  
7 February 2007

McAlpine Locks and Dam, KY and IN

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue Lock Construction Contract	\$ 41,500,000
Planning, Engineering, and Design	1,000,000
Construction Management	2,500,000
Total	\$ 45,000,000

NON-FEDERAL COSTS: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, 50 percent of the total cost of construction will be derived from the Inland Waterways Trust Fund.

STATUS OF LOCAL COOPERATION: None required.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$430,000,000 is an increase of \$35,000,000 from the latest cost estimate (\$395,000,000) presented to Congress (FY 2007). The change includes the following item:

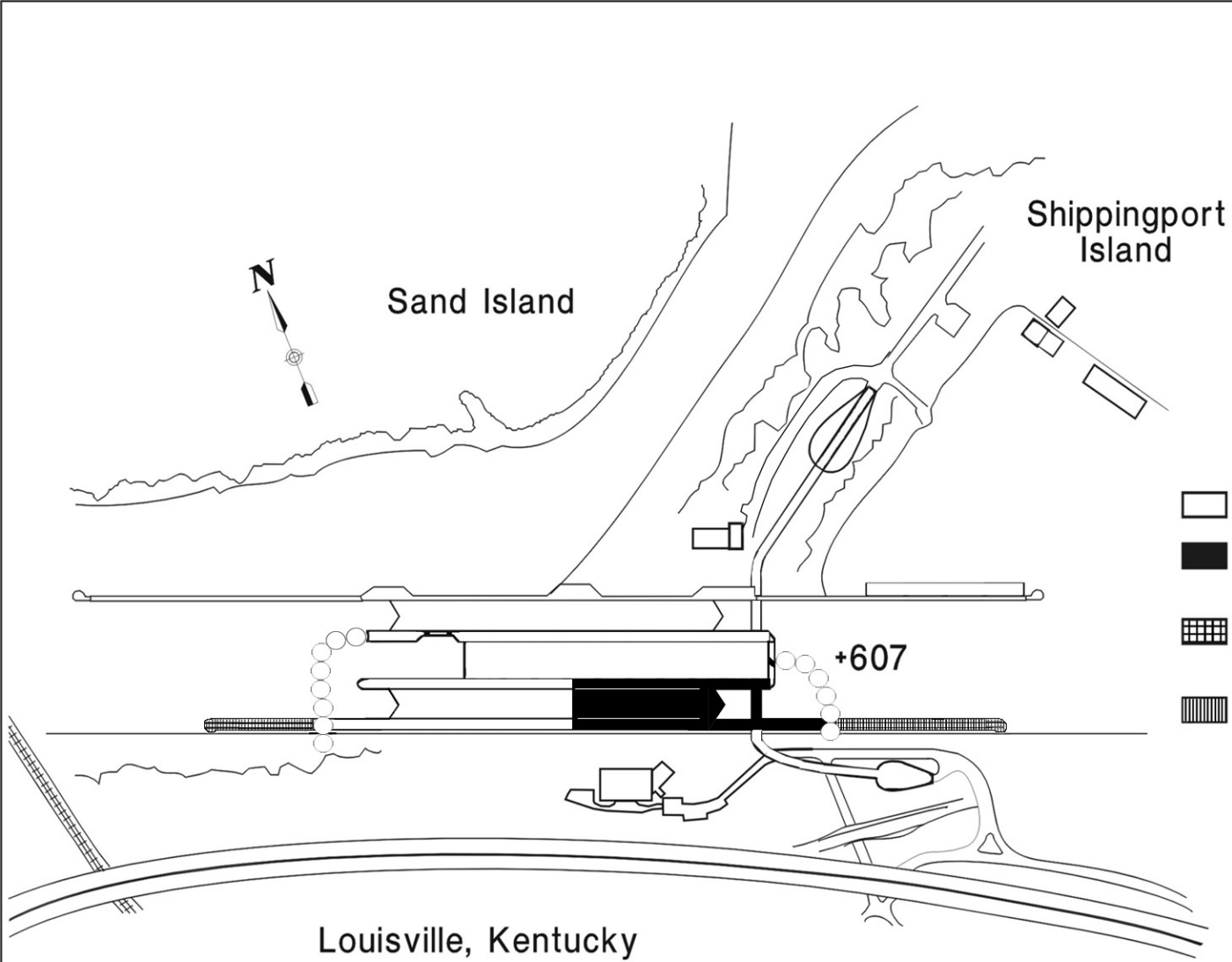
Total	Amount
Post Contract Award and Other Estimating Adjustments	\$ 35,000,000
Total	\$ 35,000,000

The authorized Federal 902b cost limit is \$390,318,943. A Post Authorization Change Report (PACR) increasing the authorized cost to \$430,000,000 is being prepared for the Chief of Engineers.





STATUS OF ENVIRONMENTAL IMPACT STATEMENT: An Environmental Assessment (EA) and a Finding of No Significant Impacts (FONSI) have been signed and included in the Final Feasibility Report. In addition, a Section 404 (b) (1) Evaluation has been completed and 401 Water Quality Certification has been obtained from the Kentucky Division of Water. The final Environmental Impact Statement (EIS) was filed with the Environmental Protection Agency in August 1990. A supplemental EIS updating project requirements was completed in FY 1998.

OTHER INFORMATION: Funds to initiate preconstruction engineering and design were appropriated in FY 1990. Funds to initiate construction were appropriated in FY 1996. Construction of the lock structure will be substantially complete at the end of 2007, as presently scheduled. FY 2008 funds will be used to finish construction of the approach walls, complete installation of the lock equipment, prove-out and testing of lock operation, and continuation of site work. The scheduled completion date has not changed from the latest present to Congress (FY 2007) "To Be Determined".



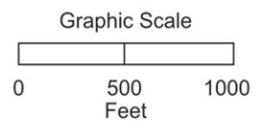


**Legend - Status of Work**

-  Work completed as of September 2006
-  Work underway with funds available for FY07
-  Work proposed with funds requested for FY08
-  Work required to complete the project after FY08

Louisville, Kentucky

+607



**MCALPINE LOCK REPLACEMENT  
LOUISVILLE, KENTUCKY**

LOUISVILLE DISTRICT  
GREAT LAKES AND  
OHIO RIVER DIVISION

5 February 2007

APPROPRIATION TITLE: Construction – Locks and Dams (Navigation)

PROJECT: Locks and Dams 2, 3 and 4, Monongahela River, Pennsylvania (Continuing)

LOCATION: Existing Locks and Dams 2, 3, and 4 are the last of the old and undersized locks on the Monongahela River system and have components which have been in service for nearly 100 years. The three projects are located on the lower portion of the Monongahela River near the city of Pittsburgh, Pennsylvania and are located in Allegheny, Washington and Westmoreland Counties. Measured from the Point in Pittsburgh, Locks and Dam 2 (Braddock) is located at river mile 11.2, Locks and Dam 3 (Elizabeth) at river mile 23.8, and Locks and Dam 4 (Charleroi) at river mile 41.5. Six other navigation projects situated upstream of Locks and Dam 4 provide a navigable waterway extending to Fairmont, West Virginia. At the Point in Pittsburgh, the Monongahela River joins with the Allegheny River to form the Ohio River.

DESCRIPTION: Existing Locks and Dam 2 consists of a main lock with chamber dimensions of 110 by 720 feet, an auxiliary lock with chamber dimensions of 56 by 360 feet, and a 748-foot fixed-crest dam. Existing Locks and Dam 3 consists of locks with chamber dimensions of 56 by 720 feet and 56 by 360 feet and a 670-foot fixed-crest dam. Existing Locks and Dam 4 consists of locks with chamber dimensions of 56 by 720 feet and 56 by 360 feet and a gated dam consisting of five 84-foot gated sections and a 43-foot fixed weir section. The authorized projects consist of a new gated dam and a rehabilitated auxiliary chamber floodway bulkhead structure at Locks and Dam 2; new twin 84 by 720 foot locks and below-dam scour protection of Locks and Dam 4; raising pool 2 by 5 feet and lowering pool 3 by 3.2 feet; removal of Locks and Dam 3; and associated channel dredging, relocations and bank stabilization. Construction began in FY 1995 with the upgrade of the Locks 2 auxiliary chamber floodway bulkhead and relocations. Replacement of the dam at Locks and Dam 2 began in 1999 and is now complete. Efforts are now focused on the new twin locks at Locks 4 and completion of pool 2 relocations. All work is programmed.

AUTHORIZATION: Water Resources Development Act of 1992.

REMAINING BENEFIT-REMAINING COST RATIO: 4.3 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 2.2 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 6.7 to 1 at 7 3/4 percent (FY 1995).

BASIS OF BENEFIT-COST RATIO: The initial Benefit-Cost ratio is based upon the benefits and costs listed in the Feasibility Report dated December 1991. The initial rate is the FY 1995 rate when CG funds were first expended. The total benefit-cost ratio would be 7.7 to 1 at 7% based on OMB passback guidance to use original authorized cost.

SUMMARIZED FINANCIAL DATA		STATUS (1 JAN 2007)	PCT Cmpl	PHYSICAL COMPLETION SCHEDULE
		Renovation and extension of Locks 2 Upper Guardwall	100	Jan 98
Estimated Federal Cost	750,000,000	Bulkhead Structure L/D 2	100	Mar 96
Programmed Construction	750,000,000	Braddock Dam	100	Jul 04
Unprogrammed Construction	0	Remove L/D 3	0	Sep 18
Estimated Non-Federal Cost	0	Raise and Lower Pool	0	Jan 14
		Public Relocations	50	Sep 16
Total Estimated Programmed Construction Cost	750,000,000	Charleroi River Chamber Lock	5	Sep 17
Total Estimated Unprogrammed Construction Cost	0	Charleroi Scour Protection	0	Sep 12
Total Estimated Project Cost	750,000,000	Charleroi Land Chamber Lock	0	Sep 19
		Entire project	42	To be determined

	GENERAL APPNS	INLAND WATERWAYS TRUST FUNDS	ACCUM. PCT. OF EST. FED. COST
Allocations to 30 September 2004	140,511,700	140,692,000	
Allocation for 2005	12,509,000	12,509,000	
Allocation for 2006	24,883,500	24,861,500	
Conference Allowance for 2007	31,465,150	31,306,850	/1 /2
Allocation for 2007*	31,465,150	31,306,850	/1 /2
Allocations through 2007	209,369,350	209,369,350	56%
Allocation Requested for 2008	35,150,000	35,150,000	65%
Programmed Balance to Complete after 2008	130,480,650	130,480,650	
Unprogrammed Balance to Complete after 2008	0	0	

/1 Assumed allocation. Final, actual allocations yet to be determined.

/2 Reflects a balancing of the General Appropriation and the Inland Waterways Trust funds.

Division: Great Lakes and Ohio River

District: Pittsburgh

Monongahela River, Locks and Dams 2, 3, and 4, Pennsylvania

5 February 2007

JUSTIFICATION: The projects are located on the Monongahela River near Pittsburgh. The major problems with the projects are deteriorated structural condition and limited lock capacity. These problems are expected to become increasingly severe as the projects age. The extreme structural deterioration of Locks and Dam 3 and Locks 4 is of paramount concern. Major repairs and rehabilitation will not prevent structural failure. There is a significant probability of structural failure and loss of navigation on the Monongahela River. Significant risk mitigation can be achieved by completing pool 2 (new Braddock pool) relocations and by raising the Braddock pool to its authorized level, thus reducing the stresses on Locks and Dam 3. The continued viability of the Lower Monongahela River navigation system is vital to southwestern Pennsylvania and northeastern West Virginia. Locks and Dam 2, 3, and 4 cumulatively provide over \$308M in transportation benefits to the region and over 14,000 direct jobs. Loss of these benefits due to the failure of navigation infrastructure would have an extremely detrimental effect to the regional and local economy. Average annual benefits at 7 percent are as follows:

Annual Benefits	Amount
Commercial Navigation	39,729,388
Advanced replacement of shoreside facilities	2,000,000
Eliminated cost of help boats	100,000
Flood damage reduction	500,000
Normal O&M reduction	1,000,000
Maintenance Savings	130,352,008
Total	173,681,396

FISCAL YEAR 2007: Work to be accomplished in FY 2007 includes continuation of construction of the river wall at Charleroi, relocations (McKeesport, Duquesne, North Versailles, Glassport, and Norfolk Southern), preparation of plans and specifications for the middle wall construction at Charleroi, and preparation of plans and specifications for the site development of the Victory Hollow Disposal Area.

FISCAL YEAR 2008: The requested amount will be applied as follows:

	Amount
Complete River Wall Construction	\$33,126,000
Continue Relocations	15,339,000
Initiate Middle Wall Construction	18,338,000
Planning, Engineering, Design	1,150,000
Construction Management	2,366,000
Total	\$70,319,000

NON-FEDERAL COST: In accordance with the cost-sharing and financing concepts reflected in the Water Resource Development Act of 1986, 50% of the total cost of construction will be derived from the Inland Waterways Trust Fund.

Construction of the projects will require modification to privately owned shore side facilities and submarine utility crossings, which were all constructed under Department of the Army permits pursuant to Section 10 of the Rivers and Harbors Act, approved March 3, 1899. The estimated cost to owners of adapting these facilities to new project conditions is \$111,000,000.

Division: Great Lakes and Ohio River

District: Pittsburgh

Monongahela River, Locks and Dams 2, 3, and 4, Pennsylvania

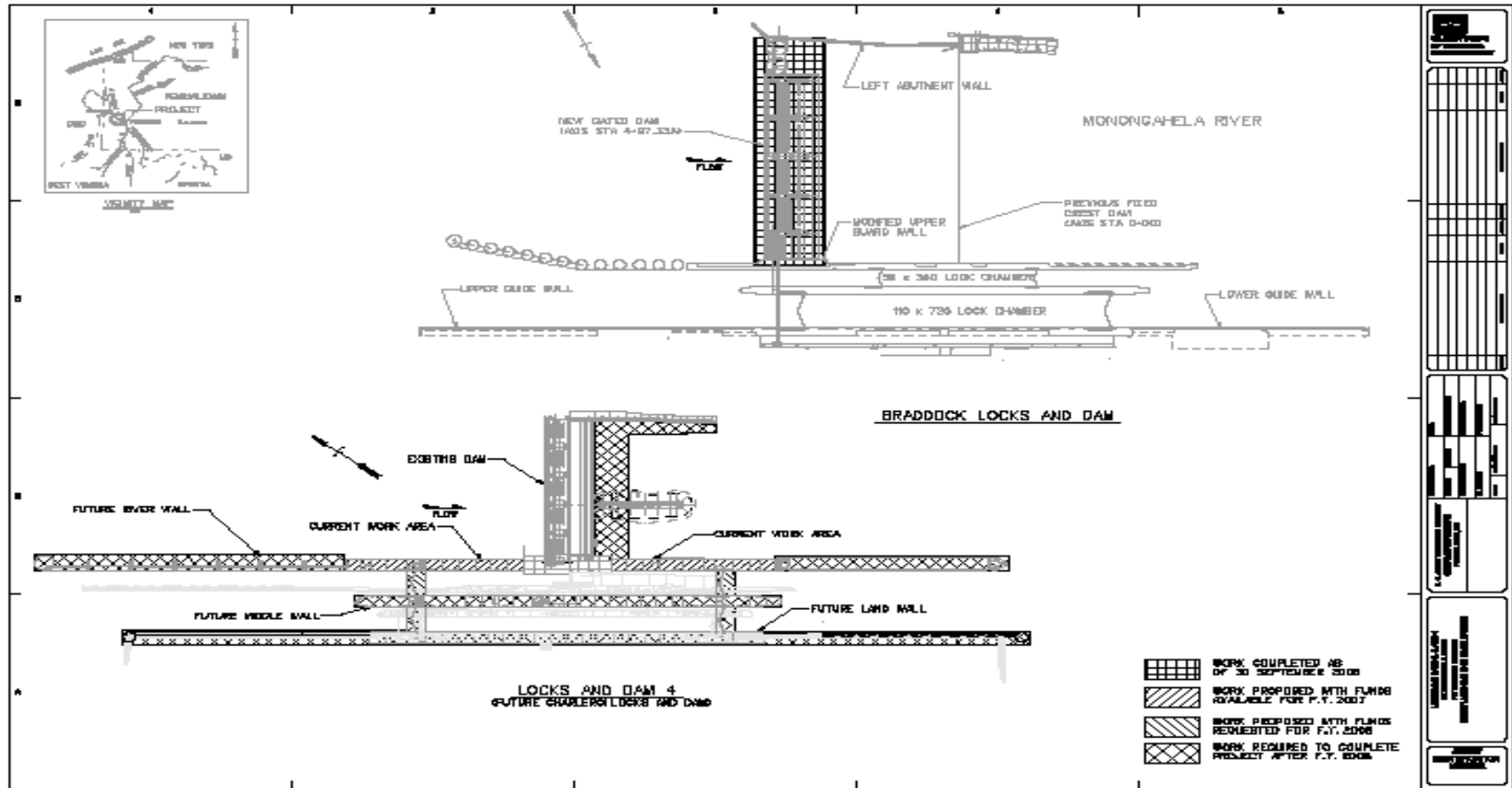
5 February 2007

STATUS OF LOCAL COOPERATION: None required.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$750,000,000 remains unchanged from the last estimate presented to Congress (FY 2007). An updated MCACES cost estimate is being prepared and will be included in the FY 2009 budget submission

STATUS OF ENVIRONMENTAL IMPACT STATEMENT COMPLIANCE: The final Environmental Impact Statement was filed with the Environmental Protection Agency on January 28, 1992. The Director of Civil Works signed the Record of Decision on December 17, 1992. A Supplemental Environmental Impact Statement on Project Disposal and various other Environmental Assessments, all-resulting in Finding of No Significant Impacts has been completed pursuant to NEPA. A second Supplemental Environmental Assessment is currently being prepared to reflect changes in the project through FY 2005.

OTHER INFORMATION: Funds to initiate preconstruction engineering and design were appropriated in FY 1992. Funds to initiate construction were appropriated in FY 1995. The current scheduled completion date for the project is 2019, based on an anticipated prior year constrained funding. With the extended schedule, there is great concern with the condition of Locks and Dam 3 which has to stay in service until 2015. The District continues to closely and more frequently monitor the condition of L/D 3 as a result of an accelerated trend in wall movements and dam deterioration, and recognizes the need for rehabilitation work as its required service life has been lengthened by total of 16 years. The District began emergency dam stabilization work on Dam 3 in FY06 with O&M funds to address issues that were discovered during the 2005 dive inspection. This work will continue into FY08.



APPROPRIATION TITLE: Construction - Locks and Dams (Navigation)

PROJECT: Olmsted Locks and Dam, Illinois and Kentucky (Continuing)

LOCATION: The project is located in Pulaski County, Illinois, and Ballard County, Kentucky, on the Ohio River near Olmsted, Illinois, approximately 964 miles downstream from Pittsburgh, Pennsylvania.

DESCRIPTION: The project will replace Ohio River Locks and Dams 52 and 53. The new structure will consist of two 110' by 1200' locks adjacent to the Illinois shore and a dam comprised of tainter gates, navigable pass, and a fixed weir. All work is programmed.

AUTHORIZATION: Water Resources Development Act of 1988.

REMAINING BENEFIT-REMAINING COST RATIO: 17.3 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 10.8 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 3.7 at 8 3/4 percent (FY 1991).

BASIS OF BENEFIT-COST RATIO: Benefits are based on the Olmsted Locks and Dam Benefit Update, dated October, 1990.

SUMMARIZED FINANCIAL DATA			STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost		\$1,535,000,000	Entire Project	53	To Be Determined
General Appropriations	767,500,000				
Inland Waterways Trust Fund	767,500,000				
					PHYSICAL DATA
Estimated Non-Federal Cost		0	Lock - 110 by 1,200 foot Chambers		2
			Dam - Navigable Pass		1,400 ft.
Total Estimated Project Cost		\$ 1,535,000,000	Fixed Weir		561 ft.
			Tainter Gates		744 ft.
			Acres - Dam		123 acres
			Road		21 acres
			Disposal Area		114 acres
			Flow Easements		35 acres
			GENERAL	INLAND	ACCUM.
				WATERWAYS	PCT. OF EST.
Division: Great Lakes & Ohio River			District: Louisville		Olmsted Locks & Dam, IL. & KY
			5 February 2007		

SUMMARIZED FINANCIAL DATA (Continued)	APPNS.	TRUST FUNDS	FED. COST
Allocations to 30 September 2004	\$ 316,383,000	\$ 316,383,000	
Allocations for FY 2005	29,372,500	29,372,500	
Allocations for FY 2006	44,550,000	44,550,000	
Conference Allowance for FY 2007	55,000,000	55,000,000	
Allocation for FY 2007	55,000,000	55,000,000 1/	
Allocations through FY 2007	445,305,500	445,305,500	58.0
Allocation Requested for FY 2008	52,000,000	52,000,000	64.8
Programmed Balance to Complete after FY 2008	270,194,500	270,194,500	100.0
Unprogrammed Balance to Complete after FY 2008	\$ 0	\$ 0	

1/ Assumed Allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: The project is in a strategic location on the inland waterway system. Virtually all waterway traffic moving between the Ohio River and tributaries and the Mississippi River and tributaries passes through the project area. Olmsted Locks and Dam will replace existing Ohio River Locks and Dams 52 and 53, which are over 70 years old. Both projects have temporary lock chambers that are inefficient and neither project conforms to current design criteria for structural stability. Commercial navigation in 2004 was 95 million tons through Lock 52 and 85 million tons through Lock 53. Over the last ten years, tonnage has been relatively constant, varying between 82 and 98 million tons. The long term (2010-2030) average annual growth rate is projected to be between 0.9 and 1.1 percent. The value of the commodities through the project area in 1999 was estimated at \$20 billion. Energy-related commodities comprised approximately 35 percent of the total tonnage, aggregates 16 percent and grains and chemicals each contributed approximately 11 percent, of total tonnage. The projected increases in waterway traffic demands in combination with the limited capacity of the existing locks will result in increased lockage delays, costing the industry \$590 million on an annual basis.

The following counties qualify as areas of "substantial and persistent" unemployment: Illinois - Alexander, Johnson, Massac, Pope, Pulaski, and Union; Kentucky - Ballard, Carlisle, Graves, Livingston, and Marshall.

Average annual benefits at 7 percent are as follows:

Annual Benefits	Amount
Navigation	\$ 530,845,211
Other Benefits	58,996,405
Total	\$ 589,841,616

Division: Great Lakes & Ohio River

District: Louisville  
5 February 2007

Olmsted Locks & Dam, IL. & KY



FISCAL YEAR 2007: The allocated amount will be applied as follows:

Continue Dam Construction Contract	\$ 101,470,000
Planning, Engineering, and Design	2,070,000
Construction Management	6,110,000
Lock Operation during Construction (Hired Labor)	350,000
Total	\$ 110,000,000

FISCAL YEAR 2008: The requested amount of \$104,000,000 for this project will be applied as follows:

Continue Dam Construction Contract	\$ 95,430,000
Planning, Engineering, and Design	1,750,000
Construction Management	6,470,000
Lock Operation during Construction (Hired Labor)	350,000
Total	\$ 104,000,000

NON-FEDERAL COSTS: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, 50% of the total cost of construction will be derived from the Inland Waterways Trust Fund.

STATUS OF LOCAL COOPERATION: None required.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$1,535,000,000 is an increase of \$85,000,000 from the latest estimate (\$1,450,000,000) presented to Congress (FY 2007). The change includes the following item.

Item	Amount
Post Contract Award and Other Estimating Adjustments.	\$ 85,000,000
Total	\$ 85,000,000

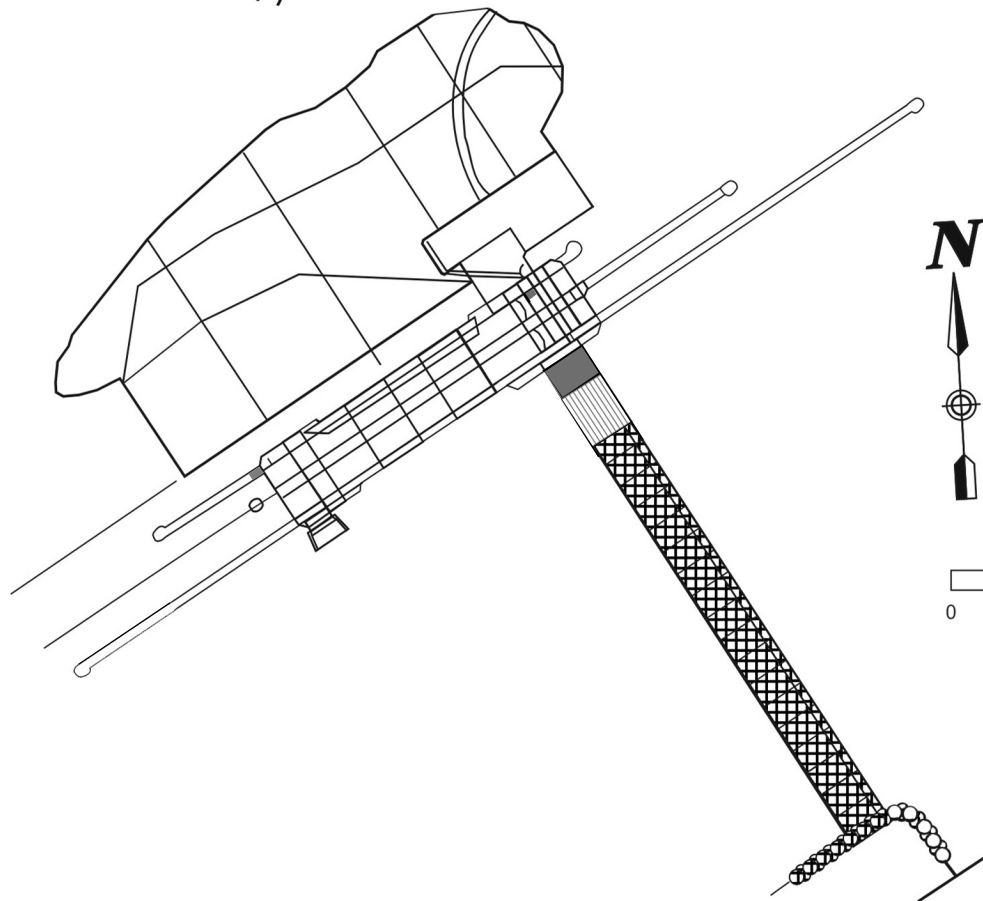
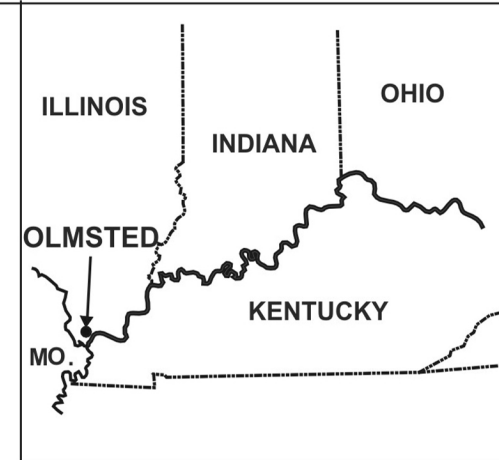
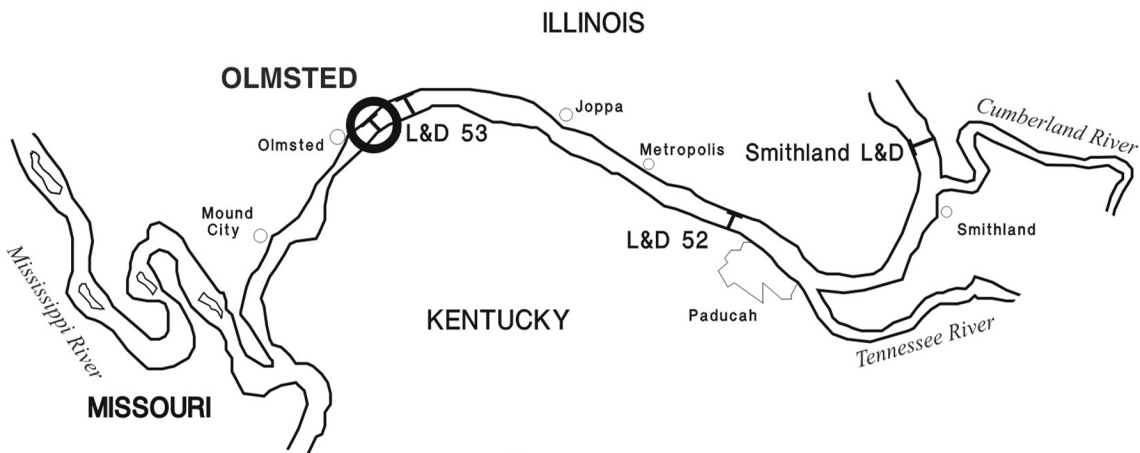
Division: Great Lakes & Ohio River

District: Louisville  
5 February 2007





Olmsted Locks & Dam, IL. & KY

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: A final Environmental Impact Statement (EIS) was filed with the Environmental Protection Agency on April 4, 1986. Due to project changes, a Draft Supplemental EIS was filed in November 1991. The Final Supplement to the EIS was filed on March 26, 1993, and the Record Of Decision was signed on May 5, 1993.

OTHER INFORMATION: Funds to initiate preconstruction engineering and design were appropriated in FY 1986. Funds to initiate construction were appropriated in FY 1991. The twin 110 x 1200-foot locks were substantially completed in 2005. Construction on the dam was initiated in Jan 2004. FY 2008 funds will be used to continue dam construction. Demolition of Locks and Dams 52 and 53 will follow completion of dam construction. The scheduled completion date has not changed from the latest presented to Congress (FY 2007) "To Be Determined".



**Legend - Status of Work**

-  Work completed as of September 2006
-  Work underway with funds available for FY07
-  Work proposed with funds requested for FY08
-  Work required to complete the project after FY08

**OLMSTED LOCKS & DAM**

LOUISVILLE DISTRICT  
 GREAT LAKES AND  
 OHIO RIVER DIVISION

423

5 February 2007

APPROPRIATION TITLE: Construction, General - Locks and Dams (Navigation)

PROJECT: Robert C. Byrd Locks and Dam (formerly Gallipolis Locks and Dam), West Virginia and Ohio (Continuing)

LOCATION: The project is situated in the Middle Ohio Valley at Ohio River mile 279.2, approximately 14 miles downstream from the mouth of the Kanawha River in West Virginia and approximately 30 miles upstream from the City of Huntington, West Virginia. The new locks are in Mason County, West Virginia and the abutment of the dam is in Gallia County, Ohio.

DESCRIPTION: The project includes the rehabilitation of the non-navigable, high-lift, gated, existing dam and construction of a new 1200 by 110 foot main lock and a new 600 by 110 foot auxiliary lock in a canal extending across a slight bend in the river, bypassing the existing locks and dam on the left descending (West Virginia) bank. The canal, in effect, straightens the river bend and provides a relatively straight down-bound approach for several miles. All work is programmed.

AUTHORIZATION: River and Harbor Act of 1935, Supplemental Appropriations Act, 1985, and the Water Resources Development Act of 1986. The Water Resources Development Act of 1992, Section 118, changed the project name to the Robert C. Byrd Locks and Dam. The Water Resources Development Act of 2000, Section 548, added authorization to preserve the General Jenkins House at Lesage/Greenbottom Swamp.

REMAINING BENEFIT-REMAINING COST RATIO: 219.8 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 9.4 to 1 at 8 3/8 percent

INITIAL BENEFIT-COST RATIO: 11.3 to 1 at 8 3/8 percent (FY 1985).

BASIS OF BENEFIT-COST RATIO: General Design Memorandum, dated November, 1982, at October, 1982 price levels.

		STATUS	PERCENT	PHYSICAL COMPLETION
SUMMARIZED FINANCIAL DATA		(1 Jan 2007)	COMPLETE	SCHEDULE
New Construction Work		Entire Project	99	To be determined
Estimated Federal Cost		Lock Construction	100	Jan 1993
General Appropriations	155,660,000	Mitigation Sites	99	Sep 2008
Inland Waterways Trust Fund	155,660,000	Dam Rehabilitation	99	Sep 2008
		Jenkins House	25	To be determined

Division: Great Lakes & Ohio River

District: Huntington

Robert C. Byrd Locks and Dam, WV and OH

5 February 2007

SUMMARIZED FINANCIAL DATA (Continued)

Dam Rehabilitation		
Estimated Federal Cost		\$ 72,180,000
General Appropriations	36,090,000	
Inland Waterways Trust Fund	36,090,000	
Total Estimated Federal Cost		\$ 383,500,000
General Appropriations	191,750,000	
Inland Waterways Trust Fund	191,750,000	
Estimated Non-Federal Cost		0
Total Estimated Project Cost		\$ 383,500,000

	GENERAL APPNS.	INLAND WATERWAYS TRUST FUNDS	ACCUM. PCT. OF EST. FED. COST
Allocations thru 30 September 2006	\$189,900,000 1/	\$189,900,000	
Allocation requested for FY 2007	900,000*	900,000*	
Allocations through FY 2007	190,800,000*	190,800,000*	99
Allocation Requested for FY 2008	500,000	500,000	99
Programmed Balance to Complete after FY 2008	450,000	450,000	
Unprogrammed Balance to Complete after FY 2008	0	0	

1/ Allocations thru FY06 include \$9,526,000 paid by the Department of Treasury Judgment Fund for settled claim.

\* Assumed allocation. Final, actual allocations yet to be determined.

Division: Great Lakes & Ohio River

District: Huntington

Robert C. Byrd Locks and Dam, WV and OH

5 February 2007

PHYSICAL DATA

Bypass Canal:  
 Length - 1.7 miles  
 Bottom Width - 500 feet (min)

Locks:  
 Number - 2  
 Main Lock - 110 x 1,200 feet  
 Auxiliary Lock - 110 x 600 feet

Lands and Damages:

Total existing easement area	1798 acres
Existing locks and dam	82 acres
New locks and canal	546 acres
Mitigation	837 acres
Dam rehabilitation	28 acres

Dam:  
 Major rehabilitation of the existing navigation dam to include replacing the dam roller gates and strengthening the foundation.

JUSTIFICATION: Completion of the new locks has enabled tows to transit the project area efficiently and has completed a series of 110 by 1200 foot locks from near Pittsburgh to Cairo, Illinois. Reduced delays and transportation costs are benefiting the economy of the Nation directly and indirectly. The project is strategically located between the highly industrialized upper Ohio River Basin area and its product markets and supply regions. Robert C. Byrd Locks and Dam captures a significant portion of the commodities transiting the Ohio River. The traffic levels (number of lockages) have decreased and volume of commodities have increased at Robert C. Byrd Locks and Dam, as forecast in the authorization document. Between the years of 1995 and 2004, traffic has ranged from 53.1M to 59.6M tons annually.

The new locks and the dam rehabilitation also remedy problems associated with the age, condition, and hazardous location of the existing facilities. The existing locks and dam are over 50 years old and have been increasingly difficult to operate and maintain. Lock outages have been a major problem and would have become very critical in the future. Accident reports and information from the navigation industry documented that the existing facilities were unsafe due to the location of the locks and velocities generated during above normal river conditions.

The average annual benefits, at 7 percent, are estimated as follows:

Annual Benefits	Amount
Commercial Navigation	\$ 18,320,000
Recreation	52,000
<b>Total</b>	<b>\$ 18,372,000</b>

Division: Great Lakes & Ohio River

District: Huntington

Robert C. Byrd Locks and Dam, WV and OH

5 February 2007

FISCAL YEAR 2007: The amount provided is being applied as follows:

Continue Dam Rehabilitation	\$ 210,000
Continue Fish & Wildlife	110,000
Continue Jenkins Preservation	920,000
Planning, Engineering and Design	298,000
Construction Management	262,000
Total	\$1,800,000*

FISCAL YEAR 2008: The requested amount will be applied as follows:

Complete Work Under Contract for Dam Rehab	\$ 60,000
Continue Work Under Contract for Jenkins Preservation	510,000
Planning, Engineering and Design	200,000
Construction Management	230,000

Total \$1,000,000

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, 50 percent of the total costs of construction will be derived from Inland Waterways Trust Fund. The West Virginia Division of Natural Resources will be responsible for operation and management of mitigation lands at an estimated average annual cost of \$55,000 for the Greenbottom area and \$345,000 for the on-site mitigation (fish hatchery). The West Virginia Division of Culture and History annual O&M cost for the General Jenkins House is estimated to be \$30,000.

STATUS OF LOCAL COOPERATION: The West Virginia Division of Natural Resources by lease agreement has assumed responsibility for operation and management of the off-site mitigation area. The General Jenkins House has been subleased to the West Virginia Division of Culture and History. The Corps is in the process of turning the completed onsite mitigation fish hatchery in fee over to the State of West Virginia Division of Natural Resources.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$383,500,000 is unchanged from the latest estimate presented to Congress (FY 2007).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Final Environmental Impact Statement (EIS) was filed with Environmental Protection Agency on January 8, 1981. Supplement I to the EIS was filed on October 30, 1991.

\* Assumed allocation. Final, actual allocations yet to be determined.

Division: Great Lakes & Ohio River

District: Huntington

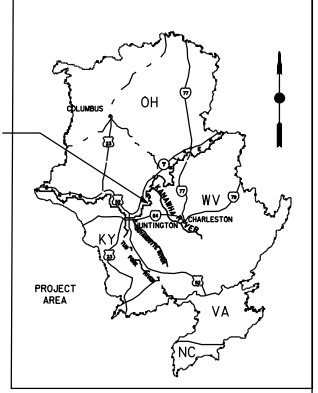
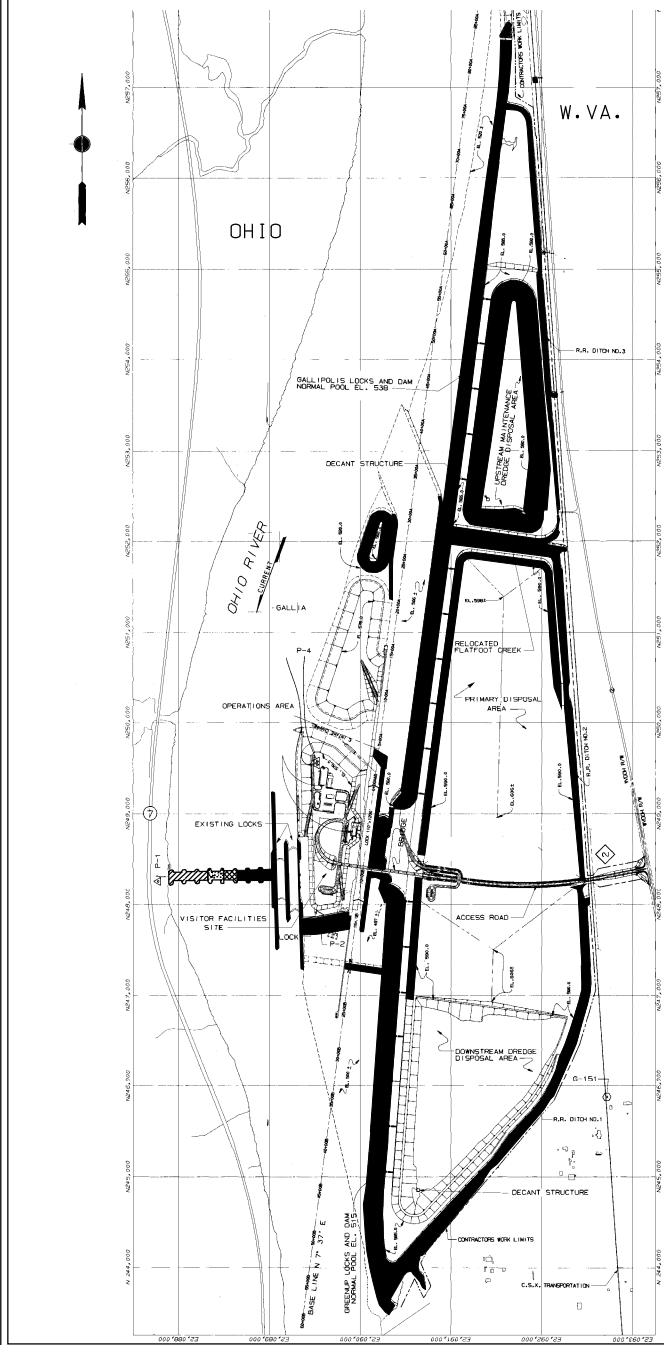
Robert C. Byrd Locks and Dam, WV and OH

5 February 2007

OTHER INFORMATION: Funds to initiate preconstruction engineering and design were appropriated in FY 1984. Funds to initiate construction were appropriated in FY 1985. The Water Resources Development Act (WRDA) of 1992, Section 118, changed the project name to the Robert C. Byrd Locks and Dam.

The Water Resources Development Act of 2000, Section 548, includes authority to preserve the General Jenkins House, which is located at the Greenbottom Wildlife Management Area. The Corps is working with the West Virginia Division of Culture and History and interested local historical groups to develop a strategy to implement the provisions of WRDA 2000 while performing the necessary planning and preparation steps for preservation.





VICINITY MAP  
SCALE IN MILES



LANDS	100%		
RELOCATIONS	100%		
DAM REHABILITATION	98%	1%	1%
LOCKS	98%	1%	1%

STATUS OF WORK

- WORK COMPLETED
- WORK UNDERWAY WITH FUNDS AVAILABLE FOR F.Y. 2007
- WORK PROPOSED WITH FUNDS REQUESTED FOR F.Y. 2008
- WORK REQUIRED TO COMPLETE THE PROJECT AFTER F.Y.2008

OHIO RIVER  
ROBERT C. BYRD LOCKS AND DAM  
HUNTINGTON DISTRICT  
GREAT LAKES AND OHIO RIVER DIVISION

5 FEBRUARY 2007

COMMERCIAL NAVIGATION  
CONSTRUCTION  
MISSISSIPPI VALLEY DIVISION

APPROPRIATION TITLE: Construction, General – Channels and Harbors (Navigation)

PROJECT: Chain of Rocks Canal, Mississippi River, Illinois, (Deficiency Correction) (Continuing)

LOCATION: The Chain of Rocks Canal is located on the Mississippi River adjacent to river miles 184 to 194.4 in Madison County, Illinois.

DESCRIPTION: The recommended plan for design deficiency correction involves the installation of relief wells and construction of berms and a pump station. All work is programmed.

AUTHORIZATION: The original project was authorized by the River and Harbor Act of 2 March 1945.

REMAINING BENEFIT-REMAINING COST RATIO: 2.0 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 1.5 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 1.6 to 1 at 7 3/8 percent (FY 1999).

BASIS OF BENEFIT-COST RATIO: Based on the Chain of Rocks Design Deficiency Report dated July 1997 at October 1996 price levels.

SUMMARIZED FINANCIAL DATA			STATUS (1 Jan 2007)	PCT CMPL	PHYSICAL COMPLETION SCHEDULE
	Original Project		Entire Project	42	To Be Determined
Actual Federal Cost		\$59,260,000	PHYSICAL DATA		
Actual Non-Federal Cost		0	The proposed plan provides for correcting underseepage deficiencies on the nine-mile long levee, installing new relief wells, replacing nonfunctional relief wells, utility relocations landside of the levee, adding fill to berms and filling in low areas, constructing a 155 cfs pump station, and constructing wetland mitigation features.		
Cash Contributions	\$ 0				
Other Costs	0				
Total Original Project Cost		\$59,260,000			

Remedial Work		ACCUM PCT OF EST FED COST (Remedial Work Only)
Estimated Federal Cost	\$46,400,000	
Estimated Non-Federal Cost	0	
Cash Contributions	\$ 0	
Other Costs	0	
Total Estimated Remedial Cost	\$46,400,000	
Total Estimated Project Cost	\$105,660,000	
Allocations to 30 September 2004	\$ 8,587,000	
Allocation for FY 2005	3,166,000	
Allocation for FY 2006	5,440,000	
Conference Allowance for FY 2007	TBD	
Allocation for FY 2007	6,800,000	*
Allocations to 30 September 2007	23,993,000	52
Allocation Requested for FY 2008	4,500,000	61
Programmed Balance to Complete after FY 2008	17,907,000	
Unprogrammed Balance to Complete after FY 2008	0	

\* Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: This project is receiving a higher funding priority in the budget than its remaining benefit-remaining cost ratio would normally allow because it addresses significant risk to human safety in accordance with the Army Corps of Engineers performance-based guidelines for the construction account. The Chain of Rocks Canal Levee System consists of a dual line of levees running parallel to the canal constructed as part of the Chain of Rocks Canal, Illinois, navigation project. The operation and maintenance of these levees is a 100 percent Federal responsibility. The eastern line of this levee system serves as an integral part of the main line levee protection to the East St. Louis and vicinity area, but is currently the weak link of the system. The east levee has demonstrated inadequate underseepage performance during past floods. Quick conditions and sand boils developed on the landside of the levee during high river stages. The original design assumptions related to the coefficients of permeability for the aquifer and top stratum materials were incorrect. The relief well system was found to be deficient. The levee, as originally designed, relies on the impoundment of water against the landside toe of the levee in order to maintain levee stability; however, development over the last 40 years has prevented effective use of this method. Correction of the deficiencies will assure the integrity of the levee system and provide urban level protection for the East St. Louis metropolitan area. Failure of the levee would affect a population of 250,000 mainly low income and poor residential neighborhoods and a heavily industrialized area with total property values of \$1.4 billion.

The Budget includes funding for this project primarily to address a significant risk to human safety. The Corps made this determination based on many factors such as the likelihood and magnitude of the potential flooding, the number of people living in the flood plain, the likely warning time, the availability of evacuation routes, and site-specific engineering factors.

Average annual benefits for the design deficiency correction are as follows:

Annual Benefits	Amount
Flood Damage Reduction	\$ 3,730,000
Navigation	42,000
Total	\$ 3,772,000

FISCAL YEAR 2007: Current year funds are being used as follows:

Complete Wetland Mitigation	\$ 635,000
Continue Berms	5,460,000
Maintenance During Construction	40,000
Planning, Engineering and Design	435,000
Construction Management	230,000
Total	\$6,800,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue contract work for North Berms	\$3,850,000
Maintenance During Construction	50,000
Planning, Engineering and Design	350,000
Construction Management	250,000
Total	\$4,500,000

NON-FEDERAL COST: The project is 100 percent Federal.

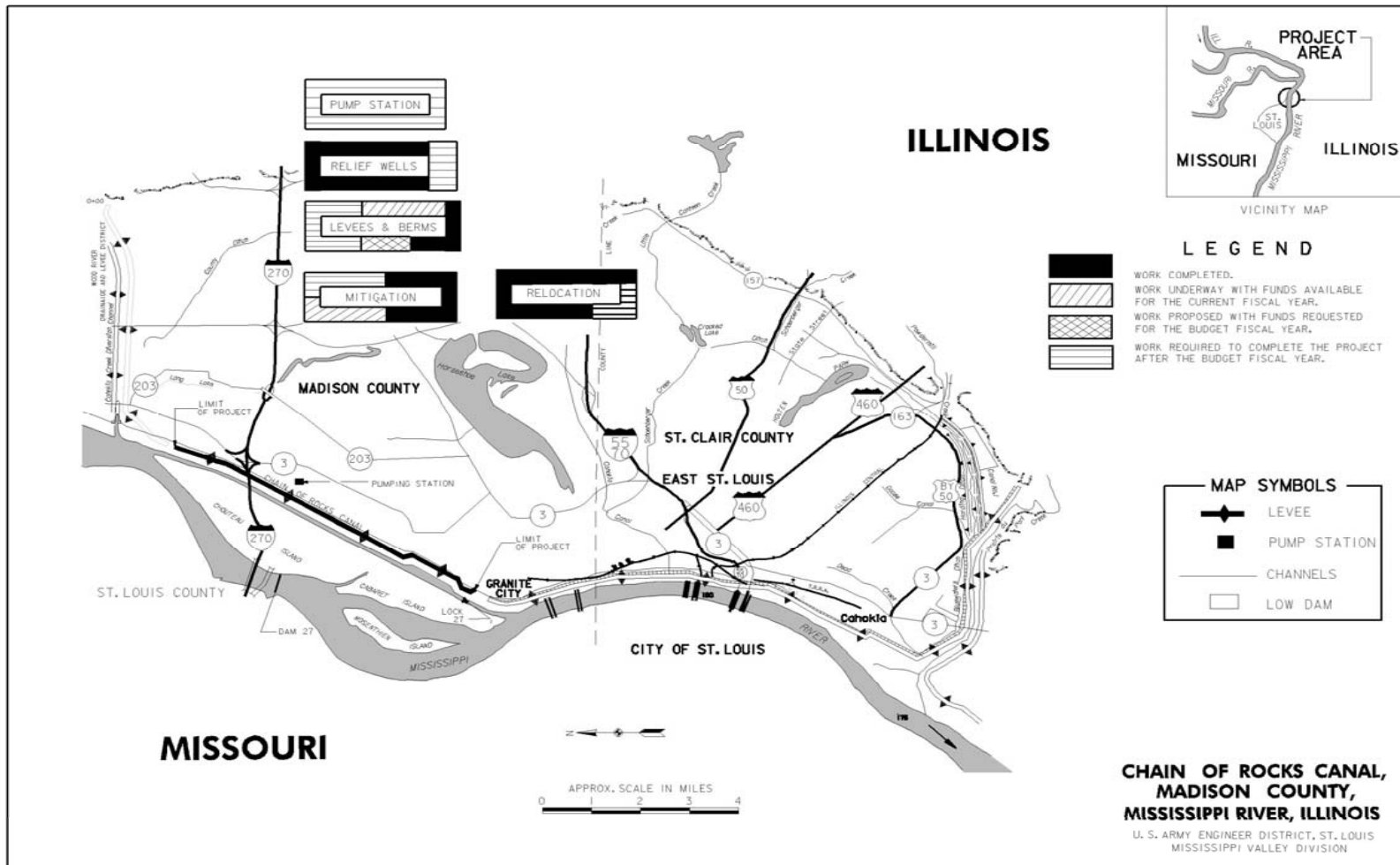
STATUS OF LOCAL COOPERATION: Not applicable.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$46,400,000 is an increase of \$8,200,000 from the latest estimate (\$38,200,000) presented to Congress (FY 2007). This change includes the following items:

Item	Amount
Price Escalation on Construction Features	\$ 1,067,000
Post Contract Award and Other Estimating (including Contingency Adjustments)	7,164,000
Price Escalation on Real Estate	-31,000
Total	\$8,200,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Environmental Assessment resulted in a Finding of No Significant Impact (FONSI), which was signed 21 May 1996. A second FONSI for revised plans was signed 14 August 2002.

OTHER INFORMATION: Previous funding included the actual cost of \$59,260,000 for the construction of the original project, which was completed in Fiscal Year 1953. Funds to initiate construction for the remedial work were appropriated in Fiscal Year 1999. The deficiency report documented a need for a pumping station to handle 155 cubic feet per second in interior flows. Without this pump station, there is no means of handling the additional flows from newly installed relief wells. Award of the pump station contract is pending completion of the levee rehabilitation. The Corps is seeking a permanent easement of 72 acres within the Charles Melvin Price Support Center, a closed army base, for construction and operational purposes associated with the original project and the deficiency corrections. Fish and Wildlife costs are \$1,206,000.



APPROPRIATION TITLE: Construction, General – Dam Safety Assurance/Safety and Seepage/Stability Correction– Locks and Dams (Navigation)

PROJECT: Illinois Waterway, Lockport Lock and Dam, Illinois 1930 ACT – REHAB (Major Rehabilitation) (Continuing)

LOCATION: The project is located within a three mile reach of the Lockport Lock Upper Pool of the Illinois Waterway River (Mile 291.0 - 294.1) at Lockport, Illinois. As part of the Chicago Sanitary Ship Canal, which extends from the Chicago River to the Illinois Waterway, the structures extend from the Lockport Lock.

DESCRIPTION: This section of the Chicago Sanitary Ship Channel (CSSC) is a perched pool sitting 38 feet above the Des Plaines River on the right descending bank and Deep Run Creek on the left descending bank. The Lockport Pool contains five major features that are located on this lower reach of the Chicago Sanitary and Ship Canal, a component of the Illinois Waterway System. The approach dike acts as a high hazard dam and is constructed of limestone cement core wall and non-homogeneous materials dating back as far as the early 1900's, and has deteriorated to a state where its function as a seepage cutoff is limited. The concrete guide walls of the CSSC are in an advanced state of concrete deterioration that could affect wall stability. The controlling works primarily functions as a flood control feature for the CSSC navigation pool. The controlling works rehabilitation involves gate bay sub-structure repairs and embankment reconstruction. The Lockport powerhouse structure and dam serves to retain the navigation pool. The key powerhouse structure components are deteriorated and require rehabilitation. All work is programmed.

AUTHORIZATION: River and Harbor Act of 1930.

REMAINING BENEFIT-REMAINING COST RATIO: 1.3 to 1 at 7 percent

TOTAL BENEFIT-COST RATIO: 1.3 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 1.6 to 1 at 5-1/8 percent.

BASIS OF BENEFIT-COST RATIO: The Lockport Pool Rehabilitation Evaluation Report, dated March 2004. Price levels have been projected to 1 Oct 2006 by escalation to applicable price level indices. Benefit Cost Ratio computations are for the major rehabilitation feasible components (\$116,000,000).

SUMMARIZED FINANCIAL DATA		STATUS: (1 January 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$123,400,000 <sup>1</sup>	Entire Project	0	To be determined
General Appropriations	61,700,000			
Inland Waterways Trust Fund	61,700,000			
Estimated Non-Federal Cost	0			
Total Estimated Project Cost	123,400,000			

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Mississippi Valley Division

Rock Island District  
5 February 2007

Illinois Waterway, Lockport L&D, Illinois  
1930 ACT-REHAB Rehabilitation  
(Major Rehabilitation)



SUMMARIZED FINANCIAL DATA (Continued)

PHYSICAL DATA

Lock – 1000 feet long x 110 feet wide.  
 Dam – 257 long with 53 foot Concrete control structure.

	GENERAL APPROPRIATIONS	INLAND WATERWAYS TRUST FUND	ACCUM PCT OF EST FED COST
Allocations to 30 September 2004	\$ 0	\$ 0	
Allocation for FY 2005	0	0	
Allocation for FY 2006	500,000	0	
Conference Allowance for FY 2007	TBD	0	
Allocation for FY 2007	1,500,000 *	0	
Allocations through FY 2007	2,000,000	0	2
Allocation Requested for FY 2008	9,222,500	11,222,500	18
Programmed Balance to Complete after FY 2008	50,477,500	50,477,500	
Unprogrammed Balance to Complete after FY 2008	0	0	

\* Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: The Chicago Sanitary and Ship Canal (CSSC) began in 1892 and opened in 1900 allowing the canal to run away from Lake Michigan, through the Chicago River and dump into the Des Plains River at Lockport. An extension was added in 1907 including the Lockport lock, Lockport powerhouse, the lock approach dike, the controlling works, and the concrete guide walls. The CSSC has been in service for 100 years, and the original dike was built with a lime cement core wall and non-homogeneous materials, to cut off seepage through the dike, to a height matching river levels in the early 1900's. The river level has long since been raised and is causing seepage over and through cracking and deterioration of the core wall. The Metropolitan Water Reclamation District of Greater Chicago (MWRD), through Congressional action, transferred the operations and maintenance responsibilities of the substructures and support structures to the US Army Corps of Engineers in the early 1980's for this roughly 45-foot high embankment, the controlling works and powerhouse substructures, and all pool retention structures. The embankment has had a long history of sinkhole development seepage and surface slumping. Failure of this high hazard dike would mean loss of pool from Lockport to Chicago River.

The CSSC is perched above surrounding ground levels and can exceed 38 feet in depth. Concrete guidewalls separate the CSSC from Deep Run Creek on the left descending bank. These concrete walls were built in stages, and the lower wall area is deteriorating at its key connection to the upper wall. These walls are continually subject to barge strikes and normal freeze-thaw deterioration. Like the dike, loss of one wall section could mean complete loss of pool and a halt to navigation. The powerhouse, controlling works, and dam were all built about the same time and are subject to the same types of deterioration. While the District is only responsible for the base and support structures under the 1980 Congressional action, loss of the base structures could mean total loss of pool and a halt to navigation. These factors affect the District's ability to maintain the safety, reliability, and design service level of these facilities.

Lock tonnage figures for the last eleven years are as follows:

Year	Tonnage	Year	Tonnage	Year	Tonnage	Year	Tonnage
2005	17,774,000	2002	16,893,524	1999	16,039,564	1996	14,846,590
2004	17,341,066	2001	15,990,547	1998	17,102,920	1995	14,986,564
2003	15,300,280	2000	16,788,986	1997	15,415,018	1994	19,698,080

FISCAL YEAR 2007: The requested amount of \$1,500,000 will be applied as follows:

Continue Planning, Engineering, and Design	\$ 410,000
Initiate Construction of test section for the Approach Dike	\$1,000,000
Initiate Construction Management (Approach Dike)	\$ 90,000
<b>Total</b>	<b>\$1,500,000</b>

FISCAL YEAR 2008: The requested amount of \$20,445,000 will be applied as follows:

Continue Planning, Engineering, and Design (Approach Dike)	\$ 2,250,000
Initiate Approach Dike and Control Works Rehabilitation	16,210,000
Initiate Construction Management	1,985,000
<b>Total</b>	<b>\$20,445,000</b>

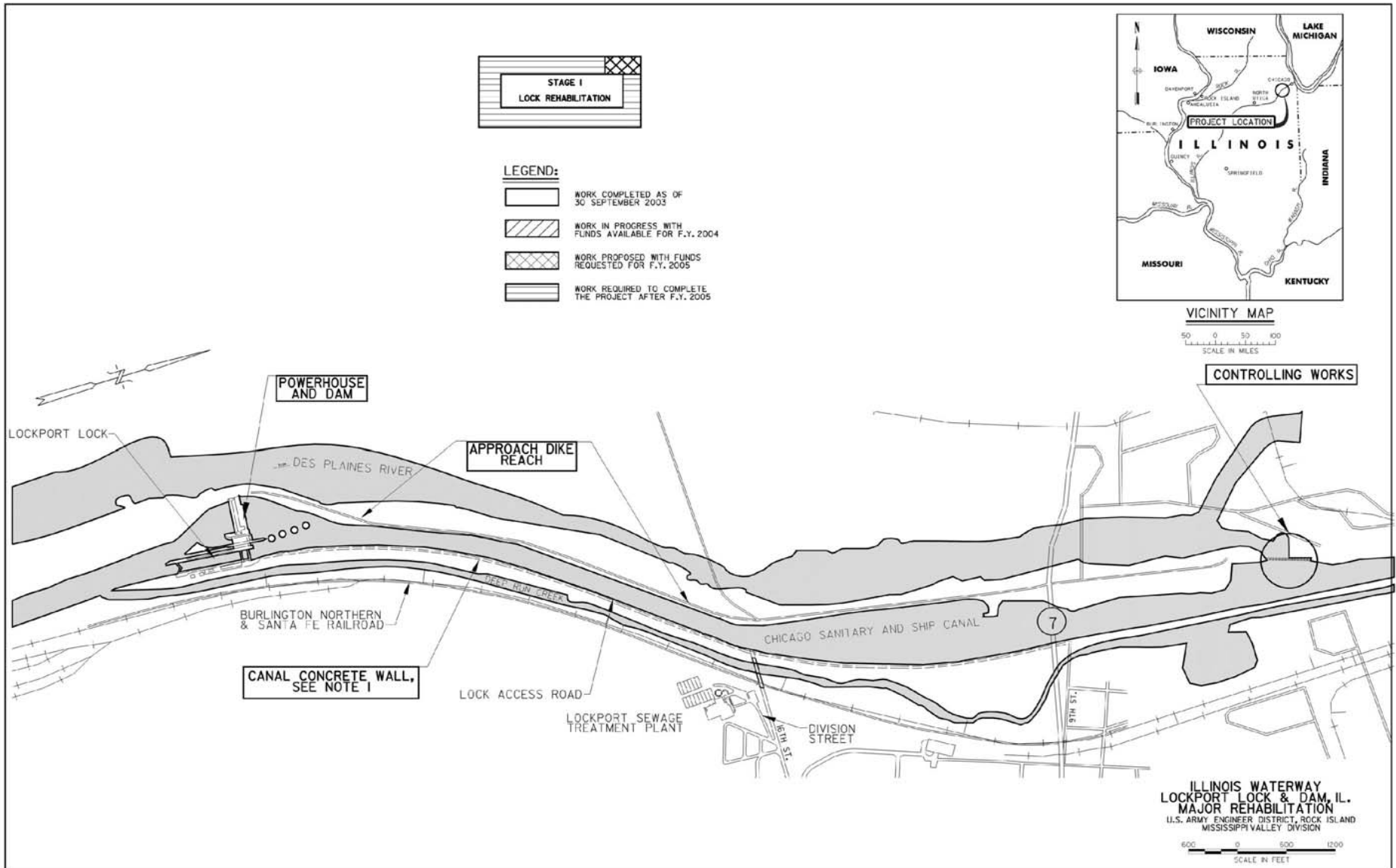
NON-FEDERAL COST: In accordance with the cost-sharing and financing concepts reflected in the Water Resources Development Act of 1986, 50 percent of the total cost of construction will be derived from the Inland Waterways Trust Fund.

STATUS OF LOCAL COOPERATION: None required.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$123,400,000 is the initial cost estimate. No previous estimate has been presented to Congress.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: An environmental assessment and a Finding of No Significant Impact are in progress.

OTHER INFORMATION: Operations and Maintenance, General, funds were allocated to initiate and complete the Rehabilitation Evaluation Report. The benefit – cost analysis does not include the Dam and Powerhouse Rehabilitation. The project was approved to be included in the Dam Safety and Seepage/Stability Correction Program and allocated \$500,000 of FY 2006 funds from the Construction, General, Appropriation.



APPROPRIATION TITLE: Construction, General - Locks and Dams (Navigation)

PROJECT: J. Bennett Johnston Waterway - Mississippi River to Shreveport, Louisiana (Continuing)

LOCATION: The project is located in central and northwest Louisiana and provides a navigation route from the Mississippi River at its juncture with Old River via Old and Red Rivers to Shreveport, Louisiana. The effected parishes and counties for this project include (Louisiana) Caddo, Bossier, Webster, De Soto, Red River, Bienville, Lincoln, Winn, Natchitoches, La Salle, Grant, Rapides, Avoyelles, Concordia; and (Arkansas) Hempstead, Miller, Nevada, Lafayette, and Columbia.

DESCRIPTION: The project provides for a 9- by 200-foot navigation channel extending about 236 miles from the Mississippi River through Old River and Red River to the vicinity of Shreveport, Louisiana. Five locks with dimensions of 84 by 705 by 14 feet and adjacent dams provide a lift of 141 feet. The project also provides for realigning the channel by means of dredging, cutoffs, and training works and for stabilizing its banks by means of revetments, dikes, and other methods. Recreation facilities and fish and wildlife development are also an integral part of the project. The major unprogrammed work includes recreation sites, and continued acquisition of mitigation lands. This project is part of the J. Bennett Johnston Waterway, Louisiana, Texas, Arkansas, and Oklahoma, which also includes the Shreveport, to Daingerfield, Texas (navigation), Shreveport, Louisiana, to Index, Arkansas (bank stabilization), and Index, Arkansas, to Denison Dam (bank stabilization) reaches.

AUTHORIZATION: River and Harbor Act of 1968, Water Resources Development Act of 1976, Supplemental Appropriations Act of 1984, Water Resources Development Acts of 1986, 1988, 1990, 1992, 1996, and 2000 and Energy and Water Development Appropriations Act of 1994.

REMAINING BENEFIT - REMAINING COST RATIO: 2.3 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 0.6 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 1.3 to 1 at 3-1/4 percent (FY 1973).

BASIS OF BENEFIT-COST RATIO: Benefits are from the General Reevaluation Report and Final Supplement No. 2 to the Environmental Impact Statement, at 1982 price levels, approved 4 January 1984. Costs for current analysis are based on October 2005 costs deflated to October 1982 price levels.

SUMMARIZED FINANCIAL DATA			STATUS	PCT	PHYSICAL
Estimated Federal Cost (COE)			(1 Jan 2007)	CMPL	COMPLETION
			Entire Project	93	SCHEDULE
		\$1,958,000,000			To Be Determined
Programmed Construction	\$ 1,933,588,000				
Unprogrammed Construction	24,412,000				
Estimated Apprn Requirements (U.S. Coast Guard)			678,000		
Programmed Construction	678,000				Open to 9-Foot Navigation
Unprogrammed Construction	0				Dec 87
Estimated Non-Federal Cost			103,632,000		Lindy Boggs Lock & Dam
Programmed Construction	78,074,000				Dec 87
Cash Contributions	\$31,260,000				John H. Overton Lock and Dam
Other Costs	46,814,000				Lock and Dam No. 3
Unprogrammed Construction	25,558,000				Dec 91 <sup>1</sup>
Cash Contributions	146,000				Russell B. Long Lock and Dam
Other Costs	25,412,000				Dec 94
					Joe D. Waggonner, Jr., Lock and Dam
					Dec 94
PHYSICAL DATA					
Lands and Damages: 26,000 acres, authorized mitigation					
Channels and Canals: Channel 9 feet deep,					
200 feet wide, and 236 miles long from					
Old River to Shreveport, Louisiana. Total length of					
bank protection - 273 miles					
Locks: Number - 5; Size - 84 by 705 feet					
Dams: Number - 5; Type - Tainter Gated					
Relocations: Roads (Modify one bridge)					
Railroads (Replace one and modify one bridge)					

<sup>1</sup> Initial interim pool impounded.

SUMMARIZED FINANCIAL DATA (Continued)		ACCUM PCT OF EST FED COST
Total Estimated Programmed Construction Cost	\$ 2,012,340,000	
Total Estimated Unprogrammed Construction Cost	49,970,000	
Total Estimated Project Cost	2,062,310,000	1
Allocations to 30 September 2004	\$ 1,780,960,000	
Allocations for FY 2005	8,542,000	
Allocations for FY 2006	12,870,000	2
Conference Allowance for FY 2007	TBD	
Allocation for FY 2007	1,500,000	*
Allocations through FY 2007	1,803,872,000	1 92
Allocation Requested for FY 2008	1,500,000	
Programmed Balance to Complete After FY 2008	\$ 128,216,000	
Unprogrammed Balance to Complete After FY 2008	24,412,000	

\* Assumed allocation. Final, actual allocations yet to be determined.

<sup>1</sup> Includes \$26,654,000 for John H. Overton Lock and Dam and \$21,653,000 for Red River Emergency Bank Protection for construction work.

<sup>2</sup> Reflects \$130,000 rescission in accordance with the Department of Defense, Emergency Supplemental Appropriations to Address Hurricanes in the Gulf of Mexico, and Pandemic Influenza Act, 2006.

JUSTIFICATION: The Red River was a very erratic river, subject to wide fluctuations in stage and meandering because of the erodible soils. A system of dependable pools was constructed to enable navigation and work continues on channel alignment. The pools are provided by five locks and dams and the proper alignment is provided by bank and channel stabilization works. These works improve water quality, fish and wildlife habitat, and preserve lands. On 31 December 1994, a 9-foot-deep by 200-foot-wide navigation channel was opened from the Mississippi River to Shreveport. The channel provides dependable 9-foot navigation depths year-round.

Navigation from the Mississippi River to Shreveport provides an artery for low-cost transportation which stimulates economic growth of the region. Estimated savings are based on an average annual movement, as forecast, of 7,845,000 tons. Waterborne commerce tonnage on the waterway in 1998 was 3,749,000 tons including all commodities that transited any portion of the system and approximately 4,014,000 tons were moved on the waterway in 2004. Commodities carried over the waterway include iron and steel products and pipe, industrial chemicals, paper and allied paper products, petroleum and petroleum products, other metals and ores, sulphur, agricultural chemicals, and grain. The public will realize an average annual savings of \$68,831,000 which will result from reduced transportation costs. Several local entities are actively involved in port development on the waterway. The City of Alexandria has constructed port facilities in Pool 2 for use by industry. The Natchitoches Parish Port in Pool 3 was opened in 1996, and a chip loading facility, general cargo dock and transit shed has been constructed at the port. The Caddo-Bossier Port in Pool 5 was opened in April 1997 and shipped 580,000 tons in 2004. Commodity movement through the port is steadily increasing. The Red River Parish Port was opened in 2002 in Pool 4. These ports will be able to accommodate tows or barges of various sizes. The usable lock dimensions were designed for a configuration of six barges with individual dimensions of 35 by 195 feet and a towboat. Larger grain and petroleum barges can also be expected to call at the ports. The project is credited with benefits derived from transportation savings from use of the waterway, flood control, damages prevented by bank stabilization, security against levee crevasses, fish and wildlife, recreation, area redevelopment, reduced maintenance on existing revetments, reduced sedimentation, irrigation, reduced costs of municipal and industrial water supply, and reduced pumping costs.

The average annual benefits are as follows:

Annual Benefits	Amount
Navigation	\$ 68,831,000
Flood Control	2,037,000
Bank Stabilization	16,602,000
Fish and Wildlife	460,000
Recreation	4,435,000
Area Redevelopment	14,808,000
Other:	
Irrigation and reduced costs of municipal and industrial water supply	53,000
Total	\$ 107,226,000



FISCAL YEAR 2007: Current year funds are being used as follows:

Pools 1-5	
Continue Mitigation	\$1,500,000
TOTAL	\$1,500,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Pools 1-5	
Continue Mitigation	\$1,500,000
TOTAL	\$1,500,000

NON-FEDERAL COST: With the exception of the Louisiana-Arkansas Railroad Bridge Relocation and the mitigation element, local interests are required to provide all lands, easements, and rights-of-way, including a proportionate share of the cost of the bridge relocations over existing channels in accordance with the principles of Section 6 of the Bridge Alteration Act (Truman-Hobbs) of 21 June 1940, as amended by the Act of 16 July 1952, 25 percent of the cost of necessary retaining dikes for dredged materials and 50 percent of the total cost of recreation facilities. The non-Federal sponsor must comply with the requirements listed below:

	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Requirements of Local Cooperation		
Provide lands, easements, rights-of-way, and dredged material disposal areas	\$ 33,753,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project	11,731,000	\$ 211,700
Pay one-half of the separable costs allocated to recreation (except recreational navigation) and bear all costs of operation, maintenance, repair, rehabilitation, and replacement of recreation facilities	55,616,000	1,448,000
Pay 6 percent of the first costs allocated to fish and wildlife and pay 6 percent of the costs of operation, maintenance, repair, rehabilitation, and replacement of fish and wildlife facilities	527,000 <sup>1</sup>	332,800 <sup>2</sup>
Pay 25 percent of the first cost allocated to retention dikes required for construction and maintenance dredging	2,005,000	31,200
Replacement costs		302,900
Total Non-Federal Costs	\$ 103,632,000	\$ 2,326,600

<sup>1</sup> Since the local sponsor will assume all operation and maintenance costs and this cost will exceed the 6 percent local share, there will be no local requirement toward implementation costs for Loggy Bayou increment. Implementation costs shown are for the Bayou Bodcau increment.

<sup>2</sup> 100 percent of annual management costs for Loggy Bayou and Bayou Bodcau increments.

The non-Federal sponsor has also agreed to make all required payments concurrently with project construction. Non-Federal cost associated with the scheduled portion of the project are broken down as follows:

Lands and Damages	\$ 18,950,000
Utility Relocations	6,864,000
Recreation (Other)	21,000,000
Cash Contribution	31,260,000
Recreation Facilities	(27,672,000)
Bridge Relocations	(1,006,000)
Retaining Dikes	(1,973,000)
Mitigation	(609,000)
Total	\$78,074,000

STATUS OF LOCAL COOPERATION: Formal assurances of local cooperation were furnished by the Red River Waterway Commission on 26 February 1969 and accepted on behalf of the United States on 15 April 1969. That agency was formed expressly to provide the local cooperation required for the project and has levied a 2-mill assessment to fulfill its obligations. Amended assurances covering the provisions of the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, and the specific written agreement requirements of Section 221 of the Flood Control Act of 1970, Public Law 91-611, were executed by the Red River Waterway Commission on 23 May 1973 and were accepted on behalf of the United States on 14 November 1973. A cost sharing agreement covering nine recreation sites in Pools 1 and 2 was approved by the Deputy Chief of Engineers on 23 July 1985. A Memorandum of Understanding between the Corps and the local sponsor for development of these nine sites was executed in January 1986. A supplement to this cost-sharing agreement was executed in the last quarter of FY 1994 to cover the construction of three boat ramps and ancillary facilities in Pools 4 and 5 in FY 1995. In the Conference Report that accompanied the Energy and Water Development Appropriations Act of 1993, Congress directed the Corps of Engineers to prepare a supplement to the recreation master plan to serve as the project document to support the contract for recreation development in Pools 3 to 5. The Project Cooperation Agreement for recreation developments in Pools 3 to 5 was executed in April 2000.

The Red River Waterway Commission agreed by letter dated 6 September 1983 to fulfill all responsibilities of the local sponsor relative to the purchase of wildlife mitigation lands. The Louisiana Department of Wildlife and Fisheries, by letter dated 22 July 1983, agreed to assume operation and maintenance responsibilities for acquired wildlife mitigation lands. Updated letters of agreement covering the mitigation plan as presently conceived (i.e., acquisition of up to 5,000 acres in the vicinity of Loggy Bayou) were furnished by the Red River Waterway Commission and the Louisiana Department of Wildlife and Fisheries on 13 August 1990 and 17 August 1990, respectively. The Local Cooperation Agreement between the Federal Government and the State of Louisiana for the acquisition of up to 5,000 acres of mitigation lands in the vicinity of Stumpy Lake/Swan Lake/Loggy Bayou Wildlife Management Area was executed by the Red River Waterway Commission in May 1993 and by the Assistant Secretary of the Army in June 1993.

The Project Cooperation Agreement covering the acquisition of mitigation lands in the vicinity of the Bayou Bodcau Wildlife Management Area was executed in June 1996.

The Red River Waterway Commission furnished a letter of agreement dated 10 October 1997 supporting additional mitigation lands in Red River and Caddo Parishes that are to be considered adjacent to the Loggy Bayou Wildlife Management Area. These new areas were directed in the Water Resources Development Act of 1996. A report detailing a plan of action to acquire these lands was processed as directed by the legislation. Amendment No. 1 to the June 1993 Loggy Bayou Area Local Cooperation Agreement covering the initial acquisition effort in Caddo Parish was executed by the Red River Waterway Commission and the Assistant Secretary of the Army in October 1999. The Water Resource Development Act of 2000 authorized the acquisition of mitigation lands in any of the parishes that comprise the Red River Waterway District, consisting of Avoyelles, Bossier, Caddo, Grant, Natchitoches, Rapides, and Red River Parishes.

The Red River Waterway Commission is providing its share of the project first costs by furnishing the necessary lands, easements, and rights-of-way, performing utility relocations as needed, and providing cash contributions for recreation facilities, bridge relocations, and retaining dikes. They will contribute their share of retention dike construction for maintenance dredging by cash contribution and they will provide the lands, easements, and rights-of-way for these dikes.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate (Corps of Engineers) of \$1,958,000,000 is an increase of \$34,025,000 from the latest estimate (\$1,923,975,000) presented to Congress (FY 2007). This change includes the following item.

Item	Amount
Price Escalation on Construction Features	\$ 34,025,000
Total	\$ 34,025,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final statement was filed with the Council on Environmental Quality on 11 May 1973. The Environmental Impact Statement is included in the project "Red River Waterway." Supplement No. 1 to the Environmental Impact Statement was prepared for the Mississippi River to Shreveport reach of the J. Bennett Johnston Waterway due to a change in project alignment from the authorizing document, and to include updated environmental information due to a reanalysis and to include results of the ground-water studies. The final Supplement No. 1 was filed with the Council on Environmental Quality on 18 February 1977, and published in the Federal Register on 25 February 1977. A third Environmental Impact Statement (Supplement No. 2) was submitted to the Environmental Protection Agency in final form on 10 November 1983, and the record of decision was signed by the Division Engineer on 4 January 1984.

An Environmental Assessment was prepared for Pool No. 2 to present the results of investigations of the impacts of the 58- and 64-foot elevations. The Environmental Assessment resulted in a Finding of No Significant Impact which allowed a design change from 58- to 64-foot pool elevations. Following review by the public, the Finding of No Significant Impact was signed on 21 April 1982.

An Environmental Assessment of the Loggy Bayou Area mitigation increment has been performed. This area was not included in the original mitigation report. The Environmental Assessment was required to satisfy the National Environmental Policy Act. The Environmental Assessment resulted in a Finding of No Significant Impact, which was signed 11 January 1993. Environmental Assessments are required to present the impacts associated with the construction of riverside levee protection berms in Pools 3 and 5. The berms are necessary to ensure the integrity of the existing flood control levee system. The Environmental Assessment for the berms in Pool 3 resulted in a Finding of No Significant Impact which was signed on 16 July 1992. The Environmental Assessment for the berms in Pool 5 also resulted in a Finding of No Significant Impact which was signed on 24 May 1993.

Mississippi Valley Division

Vicksburg District  
5 February 2007

J. Bennett Johnston Waterway-  
Mississippi River to Shreveport, Louisiana

Environmental Assessments were required for the Bayou Bodcau mitigation increment and the Nantachie Lake drawdown structure to satisfy National Environmental Policy Act requirements. The Bayou Bodcau mitigation Environmental Assessment resulted in a Finding of No Significant Impact that was signed on 28 April 1995, and the Nantachie Lake drawdown structure Environmental Assessment was completed in FY 1996, also resulting in a Finding of No Significant Impact. An Environmental Assessment for the mitigation lands to be acquired in Caddo and Red River Parishes will be performed. An assessment of the initial tract in Caddo Parish has been completed, and resulted in a Finding of No Significant Impact that was signed on 23 September 1999.

A Final Environmental Assessment has been prepared covering instream disposal of maintenance dredge material in Pools 3, 4, and 5 in lieu of disposal in contained upland areas. A Finding of No Significant Impact was signed on 19 March 1996.

A Final Environmental Assessment has been prepared covering maintenance dredging of the oxbow lakes designated for preservation in project documentation. The dredging consists of maintaining a 5-foot-deep by 20-foot-wide connection from the river into the oxbow lakes in order to achieve all project benefits. The dredged material will be disposed of instream. A Finding of No Significant Impact was signed 18 November 1997.

An Environmental Assessment and Finding of No Significant Impact are included in Supplement No. 2 to the Recreation Master Plan which presents the revised plan for recreation development in Pools 3, 4, and 5. Supplement No. 2 was approved by the Mississippi River Commission on 1 May 1998. The Finding of No Significant Impact was signed on 6 October 1997. An Environmental Assessment was performed in Fiscal Year 2000 for the Hampton's Lake Recreation Area that was added to the Pools 3 to 5 Master Plan by August 1999, Supplement No. 3. A Finding of No Significant Impact was signed on 24 May 2000.

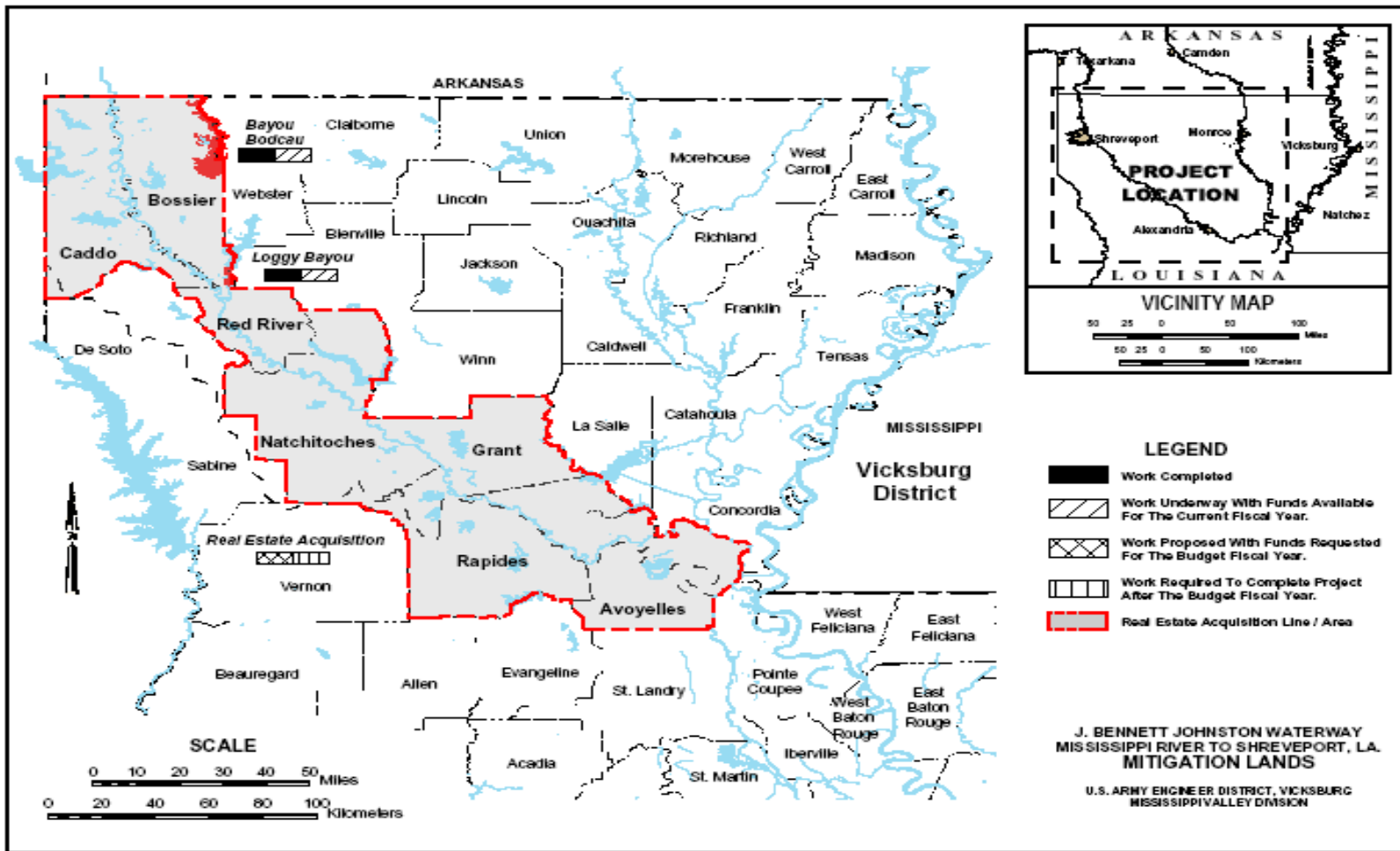
OTHER INFORMATION: Funds to initiate preconstruction engineering and design were appropriated in Fiscal Year 1971 and allotted in Fiscal Year 1972. Funds to initiate construction were appropriated in Fiscal Year 1973.

The Energy and Water Development Appropriations Act of 1996 authorized a Regional Visitors Center in the vicinity of Shreveport. The Energy and Water Development Appropriations Act of 1997 provided \$3,000,000 and directions to initiate design and construction of the Regional Visitors Center in Fiscal Year 1997. The 1997 Appropriations Act also provided funds to initiate design of the previously authorized Project Visitors Center at Grand Ecore. The Fiscal Year 2001 Appropriations Act (P.L. 106-377) directed the use of available Construction, General funds, in addition to the funds provided by the Fiscal Year 1997 Appropriations Act, to complete design and construction of the Regional Visitor Center at an estimated cost of \$6,000,000. Construction of the Project Visitors Center at Grand Ecore was completed in Fiscal Year 2003 and the Regional Visitors Center at Shreveport was completed in the 1st quarter of Fiscal Year 2006.

The Draft Master Plan Supplement No. 3 covering adjustments to cost-shared recreation facilities in Pools 3, 4, and 5 was approved by the District Commander in September 1999. The Project Cooperation Agreement covering the same recreation facilities presented in Supplement Nos. 2 and 3 was executed in April 2000. Recreation Master Plan Supplement No. 4 covering minor transfers of facilities between approved sites, with no net change in quantity of facilities, was approved by the District Commander in April 2003.

The Water Resources Development Act of 1996 increased the total cost of the Loggy Bayou mitigation increment to \$10,500,000. It further provided that lands that are purchased adjacent to the Loggy Bayou Wildlife Management Area may be located in Caddo Parish or Red River Parish. The Water Resources Development Act of 1996 also modified the waterway project to require the Secretary to dredge or perform other related work as required to reestablish and maintain access to, and the environmental value of, the bendway channels designated for preservation in previous project documentation. Further, this work shall be carried out in accordance with the local cooperation requirements for other navigation features of the project. These project modifications are subject to completion of reports showing the work is technically sound and environmentally and economically acceptable, as applicable. The favorable bendway channel (oxbow lakes) dredging report has been returned by OMB for the development of supplemental environmental data and resubmission, and was resubmitted in late Fiscal Year 2001.

The Water Resources Development Act of 1986, as modified by the Water Resources Development Acts of 1988, 1990 and 2000, and the Fiscal Year 1990 and Fiscal Year 1994 Energy and Water Development Appropriations Acts, authorized the wildlife mitigation project for the waterway above mile 104 to Shreveport, Louisiana, at a total cost of \$9,420,000. The Water Resources Development Act of 1990 modifies the mitigation project by authorizing the Secretary of the Army to acquire an additional 12,000 acres adjacent to or close to the Bayou Bodcau Wildlife Management Area. The real estate design memorandums, which present the real estate requirements for the Loggy Bayou area and Bayou Bodcau area mitigation lands, have been approved. A supplemental report, which was submitted prior to passage of the Fiscal Year 1990 Energy and Water Development Appropriations Act and the Water Resources Development Act of 1990, recommends the acquisition of only 300 acres in the Stumpy Lake area and no lands in the vicinity of the Bayou Bodcau Wildlife Management Area. In the Energy and Water Development Appropriations Act of 1994, the Corps was directed to reimburse the project local sponsor annually for the Federal share of management costs for the Bayou Bodcau mitigation area. The Water Resources Development Act of 2000 modifies the mitigation project by authorizing the purchase of mitigation land from willing sellers in any of the parishes that comprise the Red River Waterway District, consisting of Avoyelles, Bossier, Caddo, Grant, Natchitoches, Rapides, and Red River Parishes.



APPROPRIATION TITLE: Construction, General – Channels and Harbors (Navigation)

PROJECT: Mississippi River Between the Ohio and Missouri Rivers (Regulating Works), Missouri and Illinois (Continuing)

LOCATION: The project involves improvement of the Mississippi River from the mouth of the Ohio River to the mouth of the Missouri River at river mile 195 above the mouth of the Ohio River. The project covers the following counties: (Missouri) St. Louis, Jefferson, Ste. Genevieve, Perry, Cape Girardeau, Scott, Mississippi; (Illinois) Madison, St. Clair, Monroe, Randolph, Jackson, Union, Alexander, and Pulaski.

DESCRIPTION: The project consists of a navigation channel 9 feet deep and not less than 300 feet wide with additional width in bends, from the mouth of the Ohio River to the mouth of the Missouri River, a distance of approximately 195 miles. Project improvements are achieved by means of dikes, revetment, construction dredging, and rock removal. All work is programmed.

AUTHORIZATION: River and Harbor Acts of 1910, 1927, and 1930.

REMAINING BENEFIT-REMAINING COST RATIO: 7.0 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 3.5 to 1 at 7 percent.

INITIAL BENEFIT-COST RATIO: 7.2 to 1 at 2.5 percent (FY 1968).

BASIS OF BENEFIT-COST RATIO: Benefits are based on the Upper Mississippi River Master Plan Report of 1982 at 1986 price levels.



SUMMARIZED FINANCIAL DATA		ACCUM PCT OF EST FED COST	STATUS (1 Jan 2007)	PCT CMPL	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$268,000,000		Entire Project	80	To Be Determined
Estimated Non-Federal Cost	0				
Cash Contributions	0				
Other Cost	0				
PHYSICAL DATA					
Total Estimated Project Cost	\$268,000,000		195 miles of navigation channel Ohio River to mouth of Missouri River 9 feet deep x 300 feet wide		
Allocations to 30 September 2004	\$206,274,000				
Allocation for FY 2005	1,497,000				
Allocation for FY 2006	3,960,000				
Conference Allowance for FY 2007	TBD				
Allocation for FY 2007	7,560,000 *				
Allocations to 30 September 2007	219,291,000	82			
Allocation Requested for FY 2008	2,100,000	83			
Programmed Balance to Complete After FY 2008	\$ 46,609,000				
Unprogrammed Balance to Complete After FY 2008	0				

\*Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: The Mississippi River between the Ohio and Missouri Rivers is a major artery of the inland waterway system. Commerce in this reach has increased from 4,500,000 tons in 1945 to 108,529,000 tons in 2004 worth approximately \$15 billion. Commerce is expected to increase to 167,000,000 tons by the year 2020; therefore, it is essential that construction of project works be continued at a rate which will insure 9-foot channel depths for a year-round navigation season. The average annual benefits, all navigation, are \$261,809,000.

FISCAL YEAR 2007: Current year funds will be used as follows:

Complete:

Mosenthein Reach/Ivory Landing (Phase 2) dike and revetment contract	\$5,300,000
Kaskaskia Bend (Phase 5) dike and revetment contract	610,000
Purchase easements	240,000
Continue Bank line stabilization through tree planting at Thompson Bend Riparian Corridor	75,000
Planning, Engineering, and Design	1,034,000
Construction Management	301,000
Total	\$7,560,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Complete Grand Tower, Phase 4	\$1,340,000
Planning, Engineering, and Design	680,000
Construction Management	80,000
Total	\$2,100,000

NON-FEDERAL COST: None.

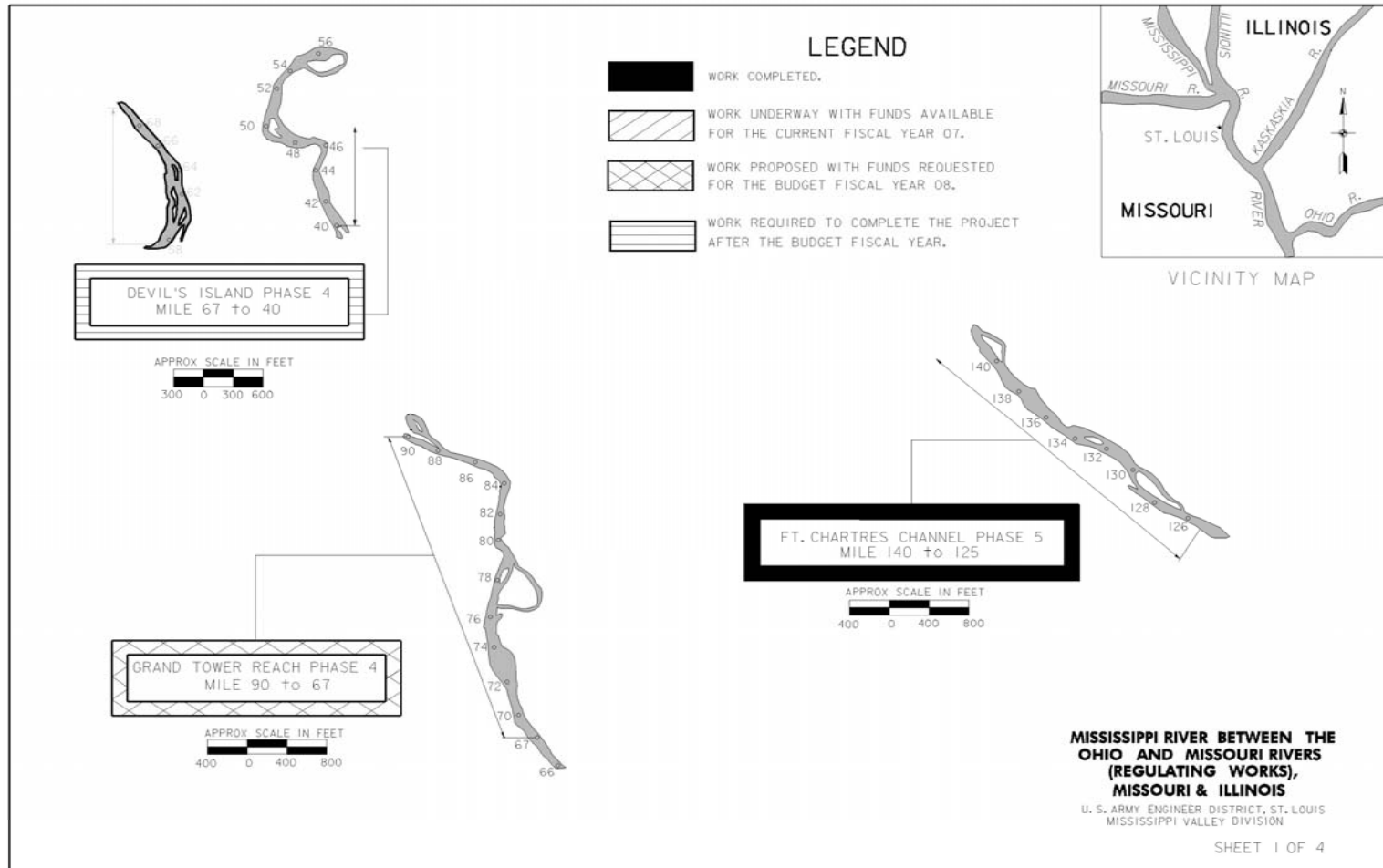
STATUS OF LOCAL COOPERATION: Not applicable.

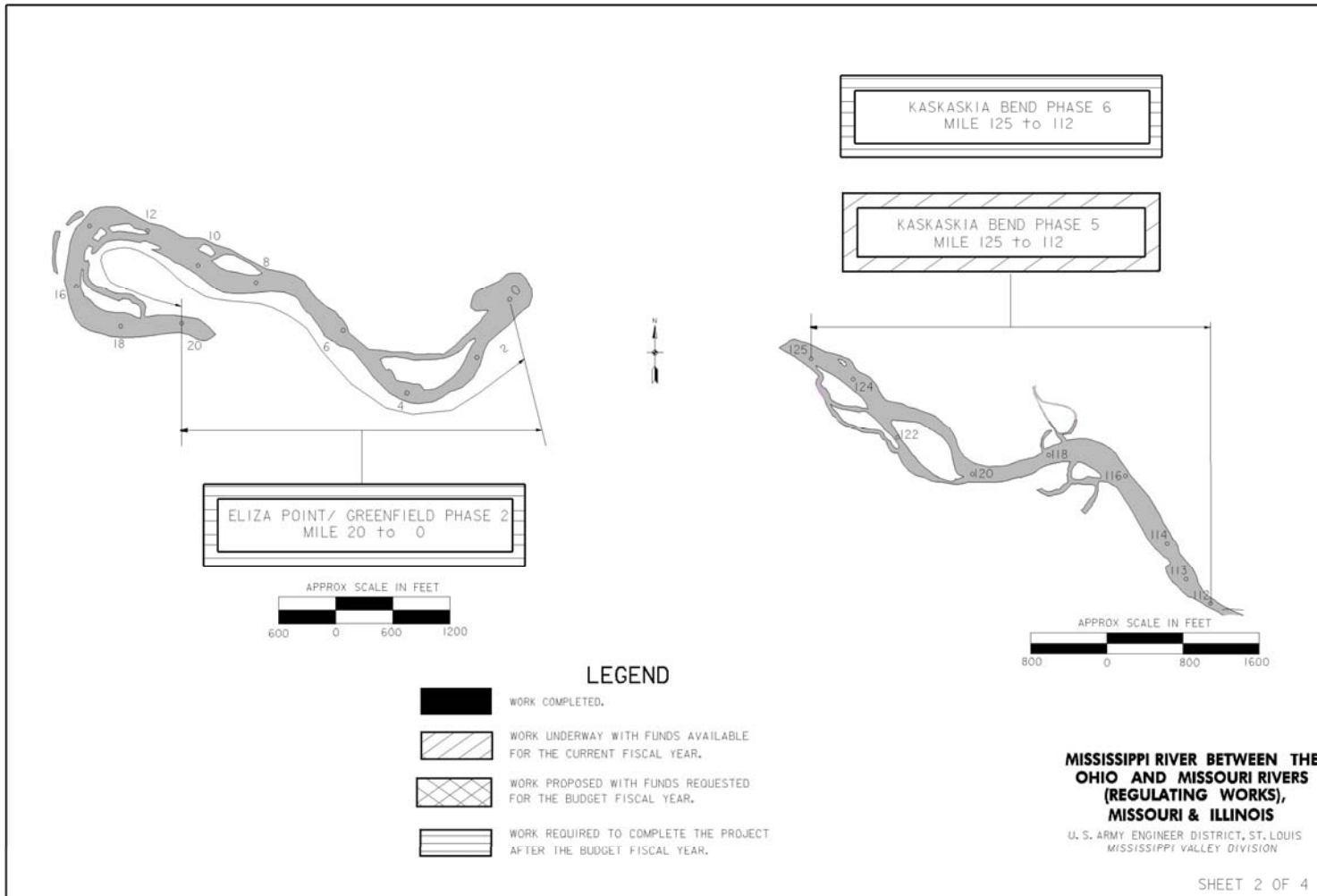
COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$268,000,000 is an increase of \$400,000 from the latest estimate of \$267,600,000 presented to Congress (FY 2007). This change includes the following item:

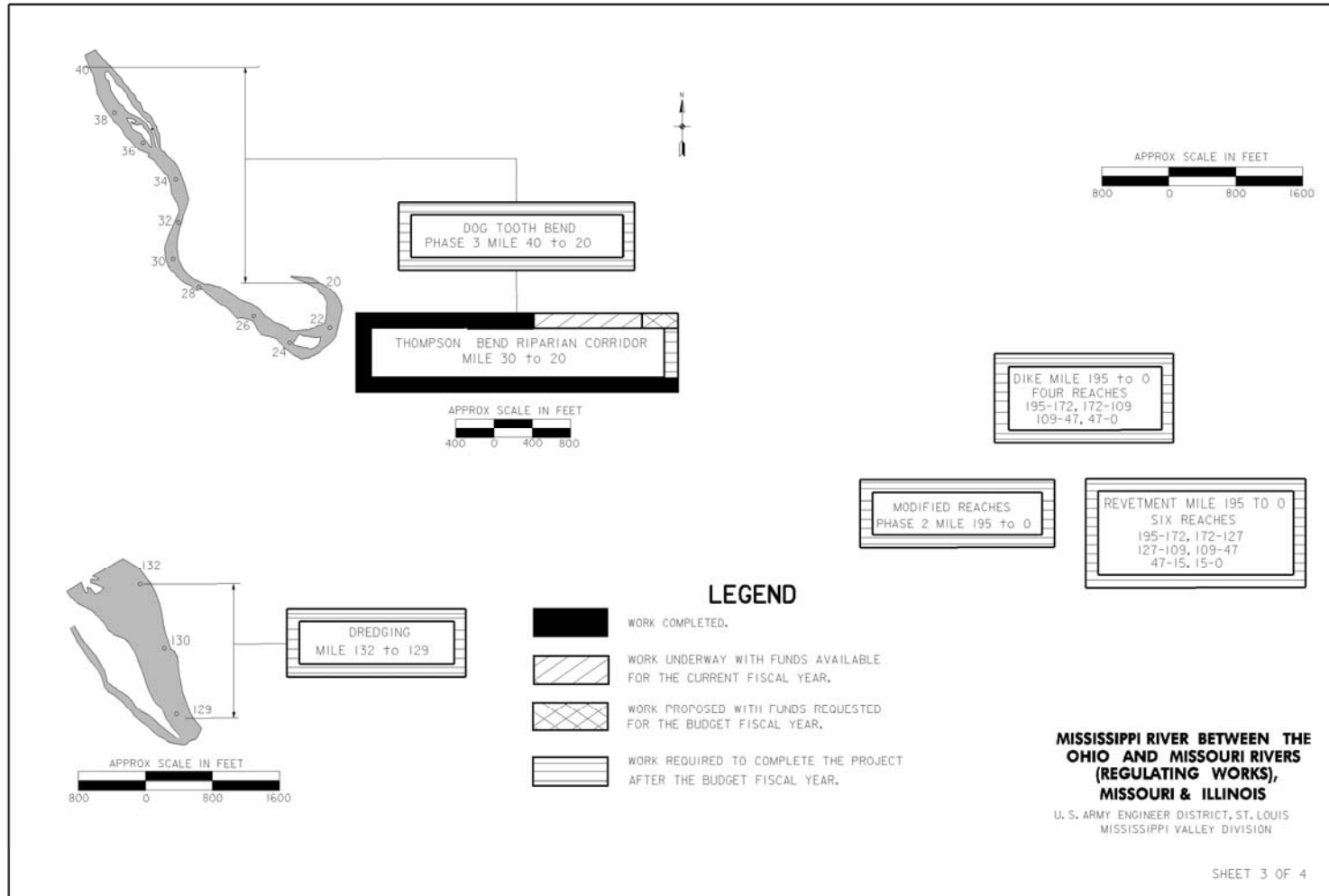
Item	Amount
Price Escalation on Construction Features	\$400,000
Total	\$400,000

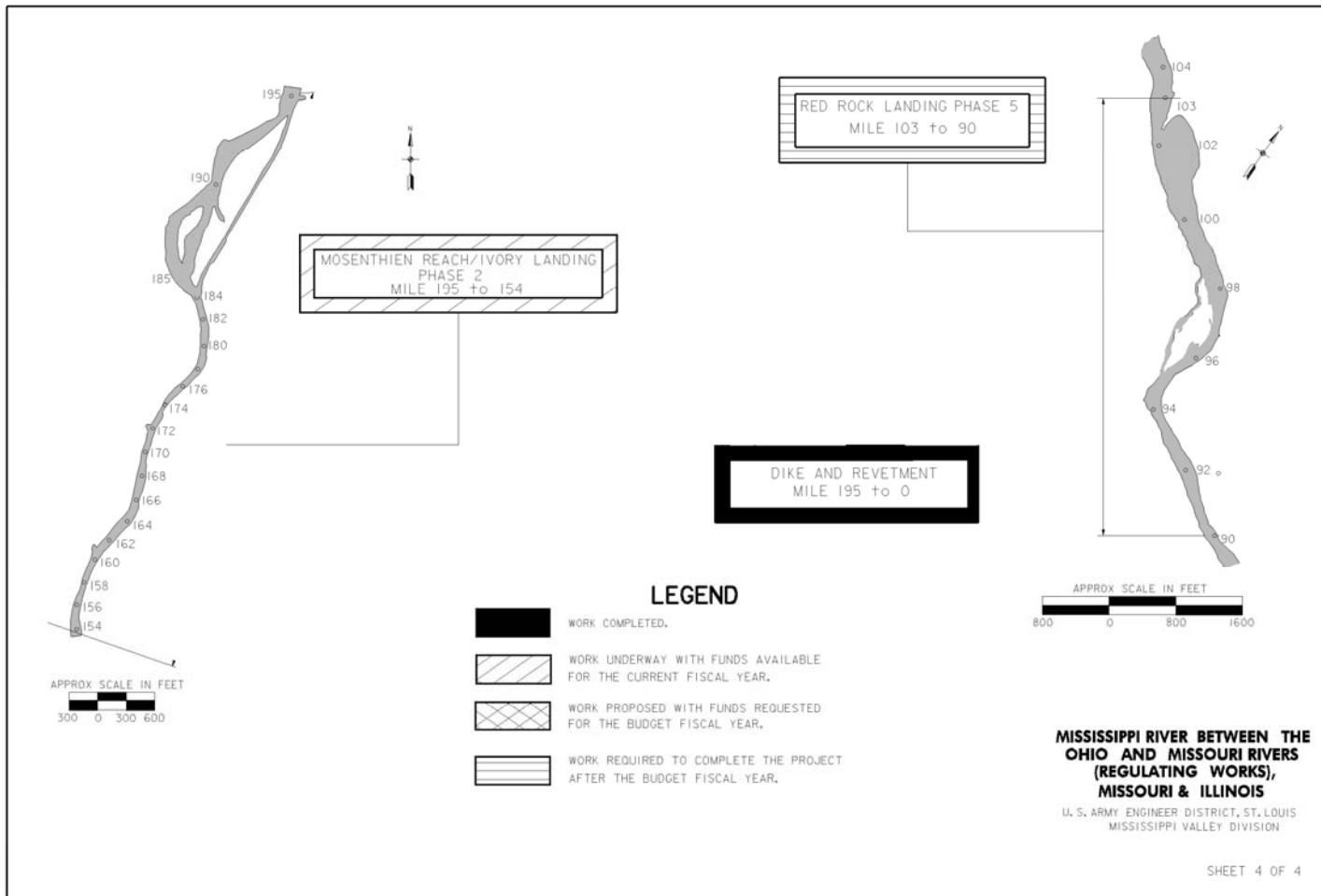
STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 8 April 1976 and published in the Federal Register on 23 April 1976. An Environmental Analysis was completed for the Rock Removal and Finding of No Significant Impact signed on 28 October 1988.

OTHER INFORMATION: Planning was initiated prior to 1910, and construction was initiated in 1910. This project requires no mitigation.









COMMERCIAL NAVIGATION  
CONSTRUCTION  
NORTH ATLANTIC DIVISION



APPROPRIATION TITLE: Construction, General - Navigation

PROJECT: New York & New Jersey Harbor, New York and New Jersey (Continuing)

LOCATION: The Port of New York and New Jersey is located within the bi-state NY/NJ Harbor Estuary. The Federal navigation channels within the NY & NJ Harbor project include: Ambrose Channel; Anchorage Channel; Kill Van Kull and Newark Bay Channel; Arthur Kill Channel; Port Jersey Channel; and, Bay Ridge and Red Hook Channel.

DESCRIPTION: This project consolidates four authorized projects.

- 1.) The Kill Van Kull and Newark Bay Channels, NY and NJ project consists of deepening existing 40-foot project to 45 feet MLW. Unprogrammed work includes dredging of Pierhead Channel and Port Newark in the vicinity of Port Newark and Port Elizabeth.
- 2.) The New York Harbor and Adjacent Channels, Port Jersey Channel, NJ project consists of deepening the non-Federal access channel to 41 feet MLW from the Federal Anchorage Channel to its head of navigation.
- 3.) The Arthur Kill, Howland Hook Marine Terminal, NY and NJ project consists of deepening the existing Federal 35-foot Arthur Kill Channel to 41 feet MLW from its confluence with the Kill Van Kull Channel to Howland Hook Marine Terminal in Staten Island, New York, and to 40 feet MLW from the Howland Hook Marine Terminal to the Tosco Oil Terminal oil facilities, New Jersey and New York, respectively. Also included within the Arthur Kill Channel are selected widenings and realignments. The Arthur Kill Project also provides for mitigation consisting of restoration and enhancement of approximately 23 acres of intertidal salt marsh.
- 4.) The New York and New Jersey Harbor, NY and NJ, project consists of deepening the Ambrose Channel to 53 feet MLW; the Anchorage Channel, Kill Van Kull, Newark Bay, Port Jersey Channel, Bay Ridge Channel, and the Arthur Kill Channel to Howland Hook to 50 feet MLW or 52 feet MLW, if in rock or otherwise hard material. The project also includes mitigation for project impacts, and selective bulkheading. All work is programmed.

AUTHORIZATION: Supplemental Appropriations Act of 1985, Water Resources Development Acts of 1986, 1996, 1999, and 2000.

REMAINING BENEFIT - REMAINING COST RATIO: 5.0 to 1 at 7 percent.

TOTAL BENEFIT - COST RATIO: 2.7 to 1 at 7 percent.

INITIAL BENEFIT - COST RATIO: 2.8 to 1 at 6 5/8 percent (FY 2002).

BASIS OF BENEFIT - COST RATIO: The benefit-to-cost ratio shown above applies to the consolidation of the four authorized projects. The analysis reflects annualized costs and benefits, adjusted to October 2001 price levels.

Division: North Atlantic

District: New York

New York & New Jersey Harbor, NY and NJ

5 February 2007

SUMMARIZED FINANCIAL DATA		ACCUM. PCT OF EST FED. COST	STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Appropriation Requirement (CoE)	\$1,399,800,000		Programmed work:		
Programmed Construction	\$1,325,300,000		KVK (a)		
Unprogrammed Construction	74,500,000		Phase I 40 ft.	100	Sep 1995
			Phase II 45 ft.	100	Dec 2004
			Port Jersey Channel (b)	85	Jan 2008
Estimated Appropriation Requirement (USCG)	4,050,000		Arthur Kill Channel (c)	80	To be determined
Estimated Total Appropriation Requirement	1,403,850,000		NY & NJ Harbor (50 ft) (d)	10	Indefinite
			S-AM-1	95	Jun 2007
			S-KVK-2	87	Apr 2007
Unprogrammed work:					
Future Non-Federal Reimbursement	234,362,800		KVK	0	Indefinite
Programmed Construction	225,990,800		Entire Project:	57	Indefinite
Unprogrammed Construction	8,372,000				
			PHYSICAL DATA		
Estimated Federal Cost (Ultimate) (CoE)	1,165,437,200		a. Deepen the Kill Van Kill and Newark Bay from 35 ft to 40 ft then to 45 ft		
Programmed Construction	1,099,309,200		b. Deepen the Port Jersey Channel from 35 ft. to 41 ft.		
Unprogrammed Construction	66,128,000		c. Deepen the Arthur Kill Channel from its confluence with the Newark Bay to the Howland Hook Marine Terminal from 35 ft. to 40 ft and then from 35 ft to 40 ft to the TOSCO Terminal.		
Estimated Non-Federal Cost	1,314,698,800		d. NY & NJ Harbor: Deepen the above channels from their depths to 50 ft., deepen the Ambrose Channel from 45 ft. to 53 ft. the Anchorage Channel from 45 ft. to 50 ft. and the Bay Ridge Channel from 40 ft. to 50 ft. Turning areas are provided for the Bay Ridge, Arthur Kill and Port Jersey Channels, along with mitigation for loss of benthic habitat and air quality.		
Programmed Construction	1,289,906,800				
Cash Contribution	739,541,000				
Other Costs	324,375,000				
Reimbursements:	225,990,800				
Unprogrammed Construction	24,792,000				
Cash Contribution	16,420,000				
Other Costs	0				
Reimbursements	8,372,000				
Total Estimated Programmed Construction Costs	\$2,393,266,000				
Total Estimated Unprogrammed Construction Costs	90,920,000				
Total Estimated Project Cost	\$2,484,186,000				

Division: North Atlantic

District: New York

New York & New Jersey Harbor, NY and NJ

5 February 2007

SUMMARIZED FINANCIAL DATA: (continued)

		ACCUM PCT OF EST FED. COST
Allocations to 30 September 2004	\$508,979,099	
Allocation for FY2005	84,622,000	
Allocation for FY 2006	99,990,000	
Allocation for FY 2007	90,000,000 *	
Allocation through FY 2007	783,591,099	51
Allocation Requested for FY 2008	91,000,000	56
Programmed Balance to Complete after FY 2008	450,708,901	
Unprogrammed Balance to Complete after FY 2008	74,500,000	

\*Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: The Port of New York-New Jersey is the largest port on the East Coast, providing more than 228,000 port related jobs, \$12 billion in economic activity, and serves more than 17 million consumers in the States of New York and New Jersey. Through its intermodal links, the Port provides second day access to another 80 million consumers in the northeast and mid-western states (35% of the nation). The Port annually receives and ships over \$82 Billion (110 million long tons) of waterborne general cargo to all parts of the United States and throughout the world and receives petroleum and related products from ports in the Atlantic, and Gulf Coasts, the Caribbean, Africa, and the Persian Gulf.

FISCAL YEAR 2007: The allocated amount of \$90,000,000 is being used as follows:

Initiate "base plus options" construction contracts		\$62,000,000
NY Harbor & Adjacent Channels, Port Jersey, Contract 3 (41feet)	8,000,000	
NY & NJ Harbor Deepening (50 Feet) Area S-AN-1a	28,000,000	
NY & NJ Harbor Deepening (50 Feet) Area S-AN-1b	1,000,000	
NY & NJ Harbor Deepening (50 Feet) Area and S-NB-1	25,000,000	
Complete construction		20,000,000
Arthur Kill, Howland Hook Marine Terminal Areas 2/3 (41 feet)	2,000,000	
NY & NJ Harbor Deepening (50 Feet) Area S -KVK-2	15,000,000	
NY & NJ Harbor Deepening (50 Feet) Area S-AM-1	3,000,000	
Development of a regional dredged material treatment facility.		2,000,000
Planning, engineering, and design		4,500,000
Construction management		1,500,000

Division: North Atlantic

District: New York

New York & New Jersey Harbor, NY and NJ

5 February 2007

FISCAL YEAR 2008: The requested amount will be applied as follows:

Initiate "base plus options" construction contracts		\$26,000,000
NY & NJ Harbor Deepening (50 Feet) Area S-KVK-1	10,000,000	
NY & NJ Harbor Deepening (50 Feet) Area S-AM-2	6,000,000	
NY & NJ Harbor Deepening (50 Feet) Area S-AK-1	10,000,000	
Continue construction		48,000,000
NY & NJ Harbor Deepening (50 Feet) Area S-AN-1b	18,000,000	
NY & NJ Harbor Deepening (50 Feet) Area S-NB-1	30,000,000	
Complete construction		11,000,000
NY & NJ Harbor Deepening (50 Feet) Area S-AN-1a	6,000,000	
NY Harbor and Adjacent Channels, Port Jersey, Area 3	5,000,000	
Planning, engineering, and design		4,500,000
Construction management		1,500,000
TOTAL		\$91,000,000

NON-FEDERAL COSTS: In accordance with the cost sharing and financial concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsors must comply with the Requirements listed below:

REQUIREMENTS OF LOCAL COOPERATION:	Payments During Construction And Reimbursement	Annual Operation, Maintenance and Replacement Costs
Pay 100 percent of costs to modify local service facilities, where necessary, for the construction of the project.	\$ 278,195,000	\$205,000
Pay 25-50 percent of the costs allocated to deep draft navigation during construction. <u>1/</u>	755,961,000	
Pay for all lands, easements, rights of way and relocations	46,180,000	

Division: North Atlantic

District: New York

New York & New Jersey Harbor, NY and NJ

5 February 2007

NON-FEDERAL COSTS (continued):

Pay an additional 10 percent of the costs allocated to deep draft navigation within a period of 30 years following completion of construction which is partially offset by a credit allowed for the value of lands, easements, rights of way, and relocation.	234,362,800	
Contribute 50 percent of the annual charges for interest and amortization of the Federal first cost of the Port Jersey 41-foot project and 50 percent of the operations and maintenance until the improvement is serving/benefiting multiple owners/properties. (Approximately \$3 million annually.) If multiple owners are not established, the contribution could range to a maximum of \$145,629,000.	0	
Total Non-Federal Costs	\$1,314,698,800	\$205,000

1/ The cost sharing percentage of this project includes the cost sharing of the general navigation features deepening to 45 feet at 25 percent and deepening of those features from 45 feet to 50 feet at 50%.

STATUS OF LOCAL COOPERATION:

(1) On the Kill Van Kull and Newark Bay Channels element, a Project Cooperation Agreement for the 45-foot deepening project was executed for the Phase II deepening on 13 January 1999.

(2) On the NY Harbor and Adjacent Channels, Port Jersey Channel element, the State of New Jersey and the Port Authority of New York and New Jersey (for the limited purpose of indemnification only) are the Non-Federal sponsors of the project. The project cooperation agreement was executed on 23 July 2002.

(3) On the Arthur Kill, Howland Hook Marine Terminal element, The Port Authority of New York and New Jersey is the non-Federal sponsor for the project. The PCA was executed on 25 July 2002.

(4) On New York and New Jersey Harbor element, the Port Authority of NY & NJ is the Non-Federal sponsor for the project. The project cooperation agreement was executed on 28 May 2004.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of \$1,529,500,000 is the same as the latest estimate presented to Congress (FY 2007).

Division: North Atlantic

District: New York

New York & New Jersey Harbor, NY and NJ

5 February 2007

STATUS OF ENVIRONMENTAL IMPACT STATEMENT:

(1) On the Kill Van Kull and Newark Bay Channels element, the Final Environmental Impact Statement (EIS) was filed with the Environmental Protection Agency (EPA) on 31 July 1981. A Supplemental EIS was filed with EPA on 14 February 1986. The Final Supplement to the EIS was filed with EPA on 13 February 1987. The Record of Decision was executed on 1 April 1987. An Environmental Assessment and Finding of No Significant Impact was issued on 30 April 1997 as part of the LRR for the Phase II deepening.

(2) On NY Harbor and Adjacent Channels, Port Jersey Channel element, the final EIS was filed with the Environmental Protection Agency (EPA) on 29 April 1988, and a final Environmental Assessment and Finding of No Significant Impact was issued June 2000. A Record-of-Decision was executed on 23 October 2000.

(3) On the Arthur Kill, Howland Hook Marine Terminal element, the Final Supplemental Environmental Impact Statement was filed with the Environmental Protection Agency on 16 September 1998. A Final Environmental Assessment for mitigation was issued in May 2001. The Record of Decision was executed on 29 August 2001.

(4) On the 50-foot project, New York and New Jersey Harbor Deepening element, the final Environmental Impact Statement (EIS) was filed with the Environmental Protection Agency (EPA) on 29 December 1999. The Record-of-Decision was signed on 6 June 2002. An Environmental Assessment and Finding of No Significant Impact was issued in January 2004.

OTHER INFORMATION:

(1) All project elements were being funded separately prior to FY 2002. Congressional direction provided to the Secretary of the Army in the Energy and Water Development Appropriations, FY 2002, Conference Report consolidated the four project elements with the 50-foot deepening project authorized by the Water Resources Development Act of 2000. An updated Project Management Plan for the consolidated project was prepared in January 2003. This plan lays out the construction activities to consolidate ongoing interim depth construction with the overall deepening project. Critical to this analysis is the ongoing extensive close coordination with the States of New York and New Jersey, Port Authority of New York and New Jersey, the Environmental Protection Agency, US Coast Guard, and other interested agencies and public. Additional engineering and environmental analyses will be completed before extensive dredging of the 50-foot channels are undertaken. Individual opportunities to advance work, such as consolidated drilling and blasting in the Kill Van Kull channel which began in FY 2002 will be implemented.

(2) On the Kill Van Kull and Newark Bay Channels element, funds to initiate construction were appropriated in FY 1985.

(3) On the NY Harbor and Adjacent Channels, Port Jersey Channel element, funds to initiate preconstruction engineering and design were appropriated in FY 1988 and funds to initiate construction were appropriated in FY 1994.

(4) On the Arthur Kill, Howland Hook Marine Terminal element, funds for preconstruction engineering and design were appropriated in FY 1986 and funds to initiate construction were appropriated in FY 2001.

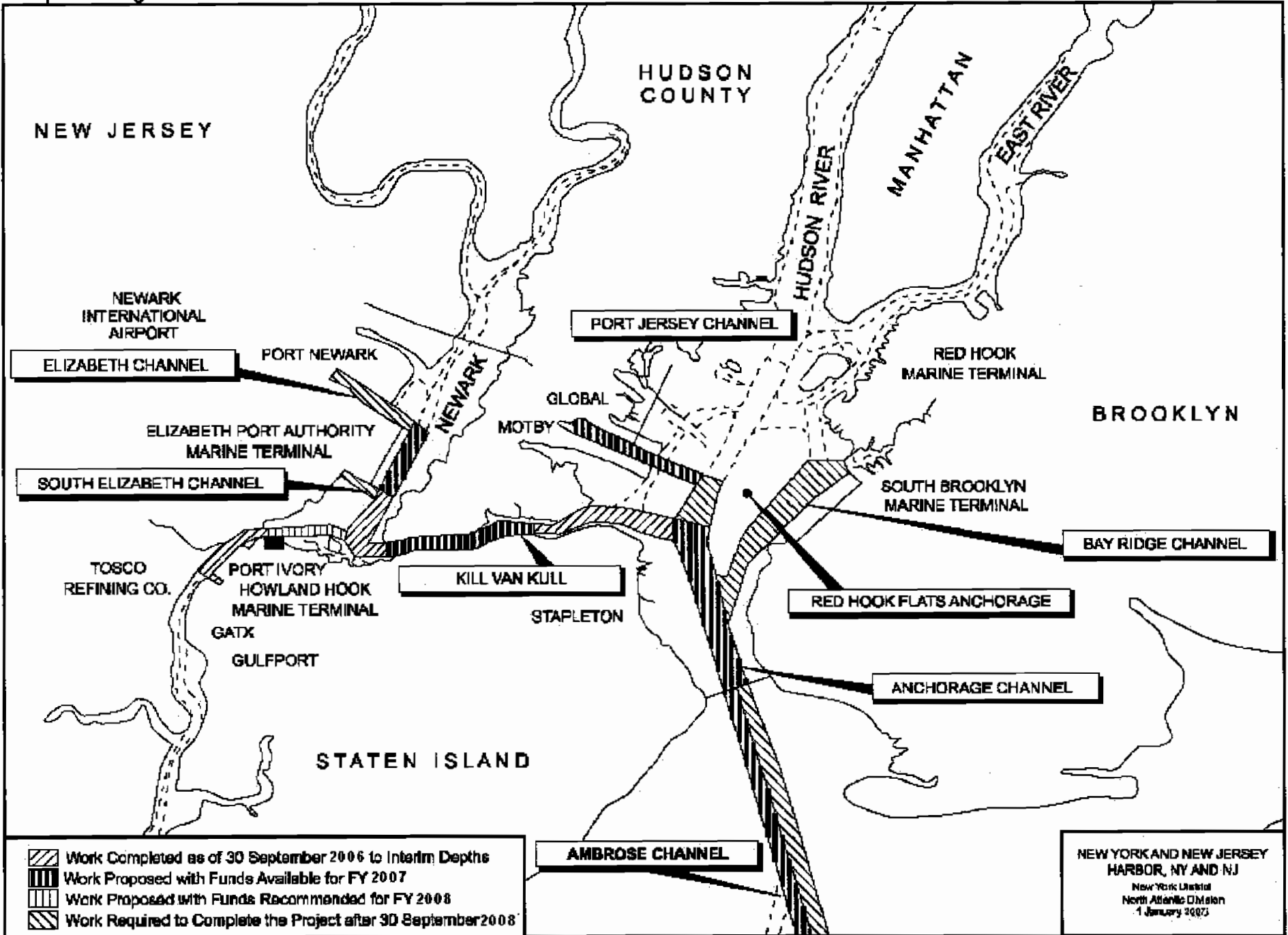
(5) On the 50-foot New York and New Jersey Harbor Deepening element, funds to initiate preconstruction engineering and design were appropriated in FY 2000 and funds to initiate construction were appropriated in FY 2002.

Division: North Atlantic

District: New York

New York & New Jersey Harbor, NY and NJ

5 February 2007



COMMERCIAL NAVIGATION  
CONSTRUCTION  
NORTHWESTERN DIVISION



APPROPRIATION TITLE: Construction, Navigation, Fiscal Year 2008

PROJECT: Columbia River Channel Improvements (Columbia River Element), Oregon and Washington (Continuing)

LOCATION: The project area begins at the mouth of the Columbia River (river mile 3) and extends upstream to the vicinity of the Port of Vancouver, Washington (river mile 106.5), and also includes the Lower Willamette River from its confluence with the Columbia River (river mile 101.5) upstream to the vicinity of downtown Portland (river mile 11.6).

DESCRIPTION: Lower Columbia River ports have been the primary shipping point for West Coast grain and feed grain exports for many years. More than 42 million tons of commerce valued at more than \$15 billion was shipped to or from Lower Columbia River ports in 2003. Increasing trade between the Pacific Northwest states and the Pacific Rim nations has accentuated the need for a deepened navigation channel in the Lower Columbia River, to accommodate larger, deeper-draft vessels. The channel is currently at a 40-foot depth and generally a 600-foot width. The project area begins at the mouth of the Columbia River and extends upstream to the vicinity of the Port of Vancouver, Washington (approximately river mile 105), and also includes the Lower Willamette River from its confluence with the Columbia River (river mile 101.5) upstream to the vicinity of downtown Portland (approximately river mile 11). The Willamette River portion of construction has been deferred. The purposes of the project are to improve the deep-draft transport of goods on the authorized navigation channel and to provide ecosystem restoration for fish and wildlife habitats.

AUTHORIZATION: Section 101(b)(13) of WRDA 1999, and P.L. 108-199 FY 2004 Consolidated Appropriations Bill, Section 123.

REMAINING BENEFIT - REMAINING COST RATIO: 2.5 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 1.5 to 1 at 7 percent.

BASIS OF BENEFIT-COST RATIO: Benefits are from approved Final Supplemental Integrated Feasibility Report and Environmental Impact Statement for Channel Improvements, Columbia River Federal Navigation Channel, dated January 2003.

THE INITIAL BENEFIT - COST RATIO: 1.9 to 1 at 6-7/8% (FY 2001)

SUMMARIZED FINANCIAL DATA 1/

ACCUM PCT OF EST FED COST	STATUS (1 Jan 2007)	PCT CMPL	PHYSICAL COMPLETION SCHEDULE
	Columbia River	42%	To Be Determined
	Willamette River	0%	To Be Determined

SUMMARIZED FINANCIAL DATA (Continued)

Estimated Federal Cost		\$101,373,000	
Estimated Non-Federal Cost		58,779,000	2/
Cash Contributions	\$38,463,000		2/
Other Costs	20,316,000		
Total Estimated Project Cost		160,152,000	2/
Allocations to 30 September 2004		\$5,139,000	
Allocation for FY 2005		7,435,000	
Allocation for FY 2006		14,850,000	
Conference Allowance for FY 2007		0	
Allocation for FY 2007		15,000,000	*
Allocations through FY 2007		42,424,000	3/ 42%
Allocation Requested for FY 2008		15,000,000	57%
Programmed Balance to Complete after FY 2008		43,949,000	
Unprogrammed Balance to Complete after FY 2008		0	

PHYSICAL DATA

Deepen 103.5 miles of the Columbia river channel from 40' to 43'.  
 Deepen 11.6 miles of the Willamette river channel from 40' to 43'.  
 Deepen three turning basins on the Columbia and three on the Willamette to 43'.  
 Construct environmental mitigation and restoration features at selected locations

1/ Cost of the Willamette River Channel Improvements element is not included in the summarized financial data.

2/ Includes \$3.315 million increment of the Locally Preferred Plan (LPP) over NED Plan and credit for an estimated \$10 million of non-Federally performed work.

3/ Includes \$1,339,400 of Investigation (Preconstruction Engineering and Design) funds and \$41,084,600 of Construction, General funds.

\* Assumed allocation. Final, actual allocation yet to be determined.

JUSTIFICATION: The need for navigation improvements has been driven by the steady growth in waterborne commerce and the use of larger, more efficient vessels to transport bulk commodities. With the increased use of deep-draft vessels, limitations posed by the existing channel dimensions now occur with greater frequency. By improving navigation, the opportunity to realize greater benefits would result from reducing transportation costs by allowing deep-draft vessels to carry more tonnage, and by reducing vessel delays. For these reasons, a coalition of the Lower Columbia River Ports (Port of Portland in Oregon and Vancouver, and Kalama, Longview, and Woodland in Washington) committed to sponsor the project construction. Columbia River ports are second in the world in grain exports. Each year, about 2,000 ocean-going ships transit the Columbia River, carrying approximately \$15 billion in imports and exports. Deepening the Columbia River from 40-43 feet is necessary to accommodate the larger, deeper-draft cargo ships that comprise a growing share of worldwide shipping fleets. Today, 20 percent of the wheat, 45 percent of the corn, 70 percent of the soybeans, and 90 percent of the containerized exports leaving lower Columbia River ports are carried on ships requiring some or all of the additional three feet in depth.

FISCAL YEAR 2007: The allocated amount would be used to deepen at least 15 additional miles of the river, and initiate a rock removal contract. In addition, funds would be used for construction at two mitigation sites, completion of two ecosystem restoration features, and continuation of one ecosystem restoration feature.

FISCAL YEAR 2008: The requested amount of \$15,000,000 will be used to continue the rock removal (blasting) contract awarded in FY 2007, and continue deepening the river.

NON-FEDERAL COSTS:

	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
<b>Requirements for Local Cooperation</b>		
Provide lands, easements, rights of way, and borrow and excavated or dredged material disposal area.	19,374,000	
Modify or relocate or remove utilities, roads bridges (except railroad bridges), dredging of berthing areas, and other facilities, where necessary for construction of the project.	942,000	
Pay 25 percent of the separable and joint costs allocated to the NED plan for navigation channel improvements offset by credit for authorized construction (an estimated \$10 million) by the sponsor from river mile 95 to the upstream end of the project, and have the amount credited against their total cost share,	30,233,000	
Pay an estimated \$2,483,000 for the incremental first costs of the locally preferred plan over the NED plan and pay an estimated \$450,000 in incremental annual operating and maintenance costs over the operating and maintenance costs of the NED navigation plan.	2,483,000	450,000
Pay 35 percent of the first costs allocated to ecosystem restoration and provide all costs for ecosystem restoration operation and maintenance	5,747,000	38,000
<b>Total Non-Federal Costs</b>	<b>58,779,000</b>	<b>488,000</b>

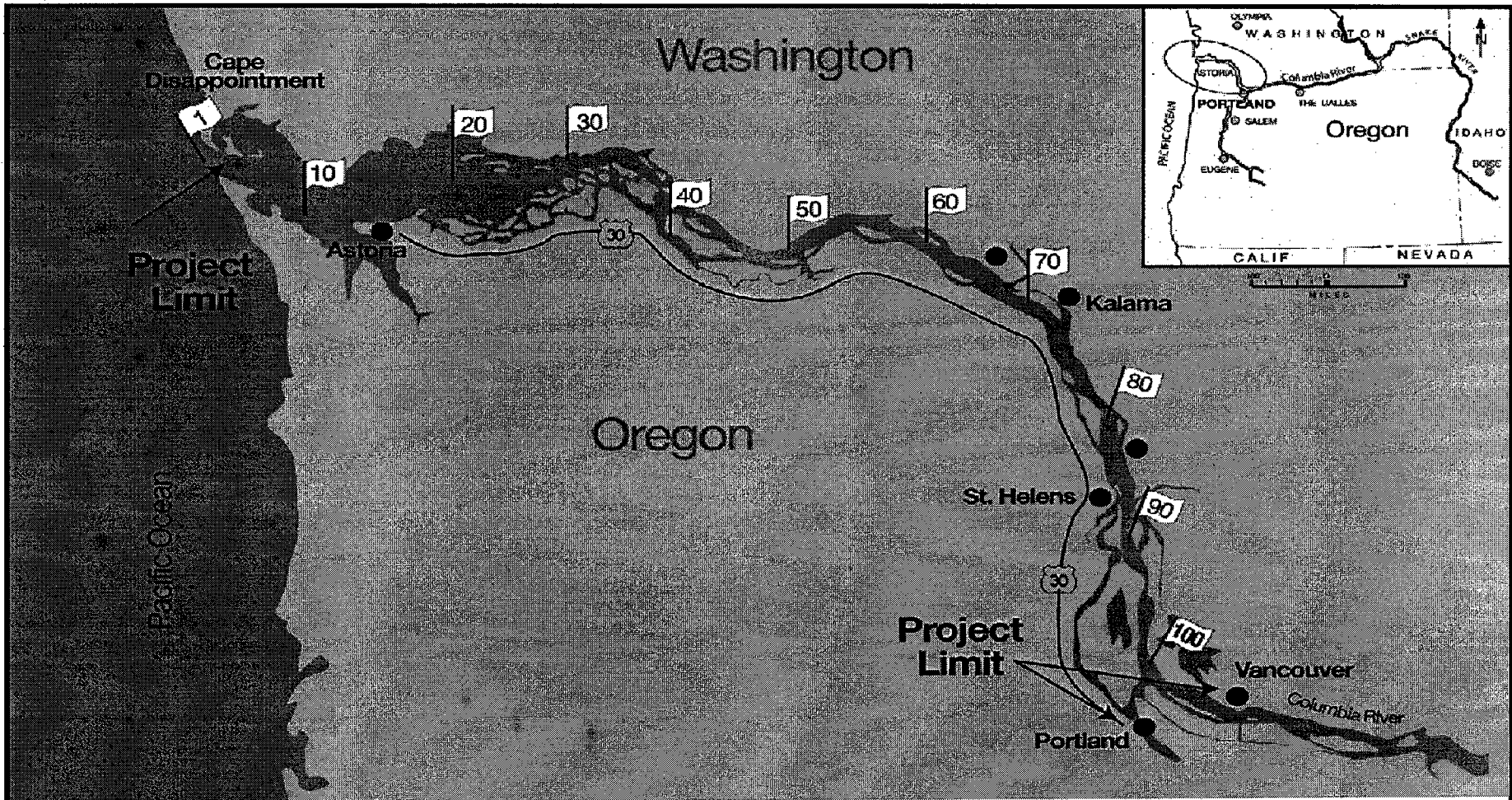
STATUS OF LOCAL COOPERATION: The non-federal sponsors for this project are the Ports of Portland, Oregon and Vancouver, Kalama, Longview, and Woodland, Washington. The PCA was executed on 23 June 2004. The non-Federal sponsors are committed to this project and have all funds necessary to construct the project. It should be noted that, at the request of the local sponsors, dredging of the Willamette River will be delayed in order to allow coordination with an ongoing EPA and State of Oregon evaluation and remediation planning for the Portland Harbor. This will delay construction of the Willamette River portion to insure that final implementation decisions incorporate both the evaluation results and the remediation plan.

**COMPARISON OF FEDERAL COST ESTIMATE:** The current Federal cost estimate of \$101,373,000 is the same as last presented to Congress (FY 2007).

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT:** The Corps of Engineers completed a new Biological Assessment for the project in December 2001. NMFS and USFWS issued new no-jeopardy Biological Opinions in May 2002. The Corps completed a Supplemental Integrated Feasibility Report and Environmental Impact Statement in November 2002. The Record of Decision was signed on 9 January 2004.

**OTHER INFORMATION:** The project was authorized for construction in WRDA 1999. Construction General funding was first appropriated in FY 2001.

The disposal sites will consist of 29 upland sites, with a total of 1,681 acres; three beach nourishment and two ocean disposal sites for the disposal of construction and subsequent channel maintenance dredged material. Fourteen of the upland disposal sites, totaling 1,025 acres, are currently in use. All federal and state approvals have been received.



**Schedule**

Initiate Phase I Deepening and Ecosystem Restoration	FY 2005
Initiate Phase II Deepening and Ecosystem Restoration	FY 2006
Initiate Phase III Deepening and Mitigation	FY 2007
Initiate Phase IV Deepening	FY 2008

**Columbia River Channel Improvement  
Oregon and Washington**

US Army Engineer District, Portland  
Northwestern Division

5 February, 2007

COMMERCIAL NAVIGATION  
CONSTRUCTION  
SOUTH ATLANTIC DIVISION

APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Brunswick Harbor, Georgia (Continuing)

LOCATION: Brunswick Harbor is located in an estuary along the Atlantic Coast approximately 80 miles south of Savannah, Georgia and 70 miles north of Jacksonville, Florida. An entrance channel 10.2 miles in length is maintained from the mouth of the harbor, Station 0+000 to Station -52+500B. The port's primary docks and terminals are located on the east bank of East River in the City of Brunswick. The remaining docks and terminals are situated along the south bank of South Brunswick River on Colonel's Island, located in Glynn County. Colonel's Island is the location of a major auto processing center.

DESCRIPTION: The recommended project consists of deepening the Bar Channel from -30 and -32 feet mlw to -38 feet mlw; deepening the Inner and Upper Harbor Channels from -30 feet mlw to -36 feet mlw; constructing a new turning basin in the Upper East River Channel approximately 1,100 feet by 1,100 feet and deauthorizing the existing East River turning basin; raising the dikes at Andrews Island disposal site from approximately +35 feet mlw to approximately +41 feet mlw; widening the channel at the new Sidney Lanier Bridge from 200 to 400 feet; widening approximately 10,000 feet of the Turtle River Lower Range from 300 to 400 feet; widening approximately 5,750 feet in the Upper East River Channel from 350 to 400 feet; and expanding the Lower Turtle River turning basin to approximately 2,500 feet by 1,150 feet.

AUTHORIZATION: Water Resources Development Act of 1999.

REMAINING BENEFIT - REMAINING COST RATIO: 3.4 to 1 at 7 percent

TOTAL BENEFIT - COST RATIO: 1.16 to 1 at 7 percent

INITIAL BENEFIT - COST RATIO: 1.9 to 1 at 6 7/8 percent (FY 2001).

BASIS OF BENEFIT - COST RATIO: Benefits are derived from the Brunswick Harbor Deepening Feasibility Report dated March 1998 at October 1998 price levels and reflective of cost increases contained in the Post Authorization Change Report dated September 2003, approved Jan 2004.

SUMMARIZED FINANCIAL DATA		ACCUM PCT OF EST FED COST	STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Total Appropriation Requirement	\$76,297,600		Entire Project	87	To be determined
Future Non-Federal Reimbursement	0				
Estimated Federal Cost (Ultimate)	\$76,297,600				
Estimated Non-Federal Cost	\$41,083,323				
Cash Contributions	\$41,083,323				
Other Costs	0				
Reimbursements					
Total Estimated Project Cost	\$117,380,923				
Allocations thru 30 September 2004	\$18,031,600				
Allocation for FY 2005	\$9,657,000				
Allocation for FY 2006	\$18,850,500				
Conference Allowance for FY 2007	0				
Allocations for FY 2007	\$17,350,000	*			
Allocations through FY 2007	\$63,889,100	84%			
Allocation Requested for FY 2008	\$6,400,000	92%			
Programmed Balance to Complete after FY 2008	\$6,008,500				
Unprogrammed Balance to Complete after FY 2008	0				

\*Assumed allocation. Final, actual allocations yet to be determined.



PHYSICAL DATA

Channels:

Deepen Inner and Upper Harbor Channels from -27' & -30' mlw to -36' mlw. Deepen Bar Channel from -32' mlw to -38' mlw. Widen the Channel at new Sidney Lanier Bridge from 200' to 400'. Widen 10,000' of Turtle River Lower Range from 300' to 400'. Widen 5,750' in Upper East River Channel from 350' to 400'.

Turning Basin: Construct new turning basin in Upper East River Channel 1,100' by 1,100'. Expand Lower Turtle River turning basin 2,500' by 1,150'.

Disposal Site:

Raise dikes at Andrews Island from approximately +35' mlw to approximately +41' mlw.

JUSTIFICATION: The harbor consists of 28 miles of channel, including 10.2 miles of entrance channel and two turning basins. Pre-existing authorized project depths consisted of -27 and -30 feet mlw in the Inner Harbor and -32 feet mlw on the Bar Channel. New authorized depths are -36 feet and -38 feet mlw respectively. Overall tonnage increased for five consecutive years between 1992 and 1997 prior to the authorization. In fact, a total of 2.3 million tons in fiscal year 1997 reflected a 24 percent increase over the previous fiscal year. However, current imports and exports through the port continue to be limited by insufficient channel depth in the form of tidal delays and light loading. This has resulted in a leveling off of tonnage figures at 2.6 million tons per year which is an 11% increase in spite of delays in deepening the project. Mayor's Point alone experienced an increase in volume of 109%. The depth limitation problem is most acute with bulk and breakbulk carriers, but the larger automobile and machinery carriers also experience tidal delays. Even so, auto and machinery units have increased from 136,159 in 1997 to a total of 368,475 in FY06. The latter figure represents a 13% increase over FY05 shipments. As traffic continues to increase and as vessels in the world fleet continue to grow in size due to the retirement of smaller ships, the problem will be exacerbated in the future. The Ports Authority has invested in new rail infrastructure which will increase throughput capacity by over 100%. Average annual benefits for commercial navigation are \$7,482,000.

FISCAL YEAR 2007: Channel Dredging (\$17,100k), complete plans and specs for Mitigation (\$250k).

FISCAL YEAR 2008: The requested amount will be applied as follows:

Construction (Mitigation)	\$6,100,000
Construction Management	300,000
Total	\$6,400,000

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below:

Requirements of local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Provide lands, easements, rights of way, and dredged material disposal areas.	0	0
Pay 35 percent of the costs allocated to general navigation facilities during construction	41,083,323	0
Reimburse an additional 10 percent of the costs of general navigation features 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 material disposal areas provided for commercial navigation.	0	0
<b>Total</b>	<b>41,083,323</b>	<b>0</b>

The non-Federal sponsor has also agreed to make all required payments concurrently with project construction and reimburse its share of construction costs within a period of 30 years following completion of construction.

STATUS OF LOCAL COOPERATION: The Georgia Ports Authority (GPA) has been the local sponsor for the Feasibility and PED phases and will provide funds through the local sponsor, GA DOT for the construction phase. The GPA expects to fund its share of project construction with monies provided by a letter of credit. The Project Cooperation Agreement was executed in April 2002.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps) cost estimate of \$76,297,600 is an increase of \$10,269,950 from the latest estimate (\$66,027,650) presented to Congress (2006). The change includes the following items.

<u>Item</u>	<u>Amount</u>
Jekyll Island Mitigation	6,400,000
Bird Island Completion	350,000
Andrews Island Dike Raising	3,000,000
Program & Project Management	400,000
Obstructions/Sweep	119,950
<b>Total</b>	<b>\$10,269,950</b>

Division: South Atlantic

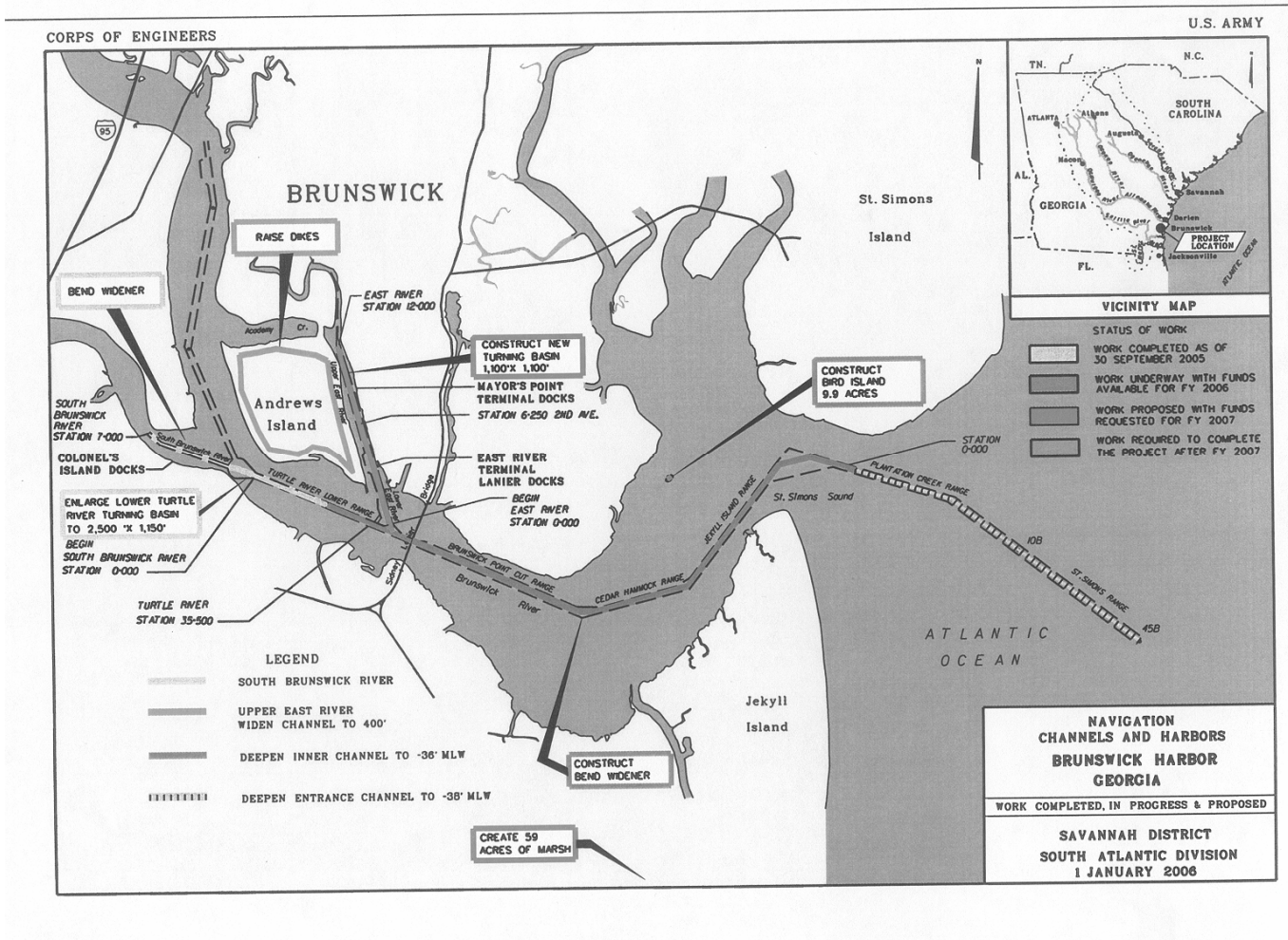
District: Savannah

Brunswick Harbor, GA

5 February 2007

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final EIS was filed with EPA on 12 June 1998.

OTHER INFORMATION: Construction General funds were used to initiate construction were appropriated in FY 2001. A mitigation plan was developed to compensate for the unavoidable losses of 18.1 acres of spartina salt marsh due to the project. The plan calls for restoration of 59 acres of non-functioning wetlands at an estimated cost of \$6,242,000. A monitoring program will be implemented to ensure that the restoration action will function as intended.



Division: South Atlantic

District: Savannah

Brunswick Harbor, GA

5 February 2007

COMMERCIAL NAVIGATION  
CONSTRUCTION  
SOUTH PACIFIC DIVISION

APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Oakland Harbor, California (50-ft) (Continuing)

LOCATION: Oakland Harbor is located in the city of Oakland, California, on the eastern shore of central San Francisco Bay immediately south of the San Francisco-Oakland Bay Bridge.

DESCRIPTION: The project consists of deepening the 4 mile Inner Harbor and 3.4 mile Outer Harbor channels, including the respective turning basins, to 50 feet; widening of channels at various locations; and widening of the Inner and Outer turning basins. Approximately 12.8 million cubic yards of excavated dredged material will require disposal. The middle harbor enhancement area (MHEA) will use about 7 million cubic yards to create 190 acres of shallow water and sub-tidal habitat in an area no longer needed for navigation purposes; approximately 2.6 million cubic yards would be placed at the former Hamilton Army Airfield in Novato, California, as part of a separately authorized tidal wetlands restoration project; approximately 2.9 million cubic yards would be disposed at the existing Montezuma Wetlands Restoration Project (MWRP) in the northeast portion of Suisun Bay, and approximately 0.3 million cubic yards would be transported to the Vision 2000 upland site in the inner harbor. Previously authorized deepening of the 4 mile Inner Harbor and 3.4 mile Outer Harbor to 42 feet deep was completed in July 1998.

AUTHORIZATION: Water Resources Development Act of 1999.

REMAINING BENEFIT - REMAINING COST RATIO: 4.7 to 1.0 @ 7 percent.

TOTAL BENEFIT - COST RATIO: 7.9 to 1.0 @ 7 percent.

INITIAL BENEFIT - COST RATIO: 8.1 to 1.0 @ 7 percent.

BASIS OF BENEFIT - COST RATIO: Benefits are from the latest available evaluation included in the Chief of Engineer's report approved in April 1999 at 1998 prices.

SUMMARIZED FINANCIAL DATA		ACCUM PCT OF EST FED COST	STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Appropriation Requirement (COE)	\$237,215,000		Entire Project	55	To be determined
Estimated Appropriation Requirement (USCG)	300,000				
Estimated Total Appropriation Requirement	237,515,000				
Future Non-Federal Reimbursement	16,800,000				
Estimated Federal Cost (Ultimate)	220,715,000				
Estimated Non-Federal Cost	\$160,985,000				
Cash Contribution	\$73,960,000				
Other Costs	70,225,000				
Reimbursements	16,800,000				
Total Estimated Project Cost	\$ 381,700,000				
Allocation to 30 September 2004	39,838,000				
Allocation for FY 2005	24,340,000				
Allocation for FY 2006	49,370,000				
Conference Allowance for FY 2007	43,500,000				
Allocation for FY 2007	43,500,000 *				
Allocation through FY 2007	157,048,000	66			
Allocation Requested for FY 2008	42,000,000	92			
Programmed Balance to Complete after FY 2008	38,167,000				
Unprogrammed Balance to Complete after FY 2008	0				

PHYSICAL DATA

Channels: Deepen the 4 mile Inner Harbor and 3.4 mile Outer Harbor channels to 50 feet; Widen various locations.

Turning Basins: Widen Inner and Outer Basins and deepen to 50 feet.

Habitat: Create 190 acres of shallow water and sub-tidal habitat.

\* Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: The Port of Oakland services about 85 percent of all general cargo moving through the Golden Gate, 95 percent of which is containerized. The existing Federal navigation channel serving Oakland Harbor is inadequate for efficient shipping operations and vessel safety as a result of increased vessel traffic and large containerships. Cargo movement by larger vessels is hampered by the need to load to less than full capacity and to wait for high tides to avoid grounding hazards. Annual tonnage handled by the Port amounted to approximately 30 million tons in 2005. The Port terminals are considered to be state-of-the-art. The plan of improvement will provide for further development of the harbors to accommodate the new generation of containerships, improve safety of vessel traffic and provide maximum efficiency of Port operations. The majority of ships presently using the Port have design drafts greater than 35 feet. Sixth generation vessels are now coming on line with drafts of 46 feet or greater (up to 48 feet at the present time). The deep draft fifth and sixth generation container ships experience tidal delays, with the result being that many of the shipping lines either bring those ships into Oakland only partially loaded or choose to bypass Oakland altogether. Limited deepening of the Inner Harbor portion of the project to -38 feet was completed in December 1992 and deepening of the Inner and Outer Harbors to -42 feet was completed in July 1998. Vessels may now depart the Port with some additional cargo, but must still arrive light-loaded. The remainder of the project is needed to allow safe and efficient utilization of the Port. Average annual benefits, all commercial navigation, are estimated at \$175,122,000 based on 2005 prices. Depths of 50 feet are required for users to efficiently call at the Port of Oakland presently and in the future.

FISCAL YEAR 2007: Current year funds will be used to:

Complete Construction on Inner Harbor Phase 1B	\$500,000
Complete Dredging Phase 3D Entrance Channel	500,000
Initiate Dredging Phase 3E	38,000,000
Planning, Engineering and Design	1,500,000
Construction Management	3,000,000
Total	\$43,500,000

FISCAL YEAR 2008: The requested amount of \$42,000,000 will be applied as follows:

Continue Dredging Phase 3E	\$38,850,000
Planning, Engineering and Design	1,050,000
Construction Management	2,100,000
Total	\$42,000,000



NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below:

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Provide lands, easements, rights of way, and dredged material disposal areas.	\$14,300,000	N/A
Modify or relocate utilities, roads, bridges (except railroad bridges) and other facilities, where necessary for the construction of the project.	10,000,000	N/A
Pay 25 percent of the costs allocated to general navigation features for deepening to 45 feet, and 50 percent of the costs allocated to general navigation features for deepening greater than 45 feet during construction, and pay 50 percent of the costs of incremental maintenance below 45 feet below mean low water.	56,353,000	\$694,000
Pay 25 percent of the costs for beneficial use of dredged material in accordance with Section 204 of the Water Resources Development Act of 1992.	15,132,000	N/A
Pay 100% of the costs for local service facilities and berthing facilities.	48,400,000	N/A
Reimburse an additional 10 percent of the costs of general navigation features 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 material disposal areas provided for commercial navigation.	16,800,000	N/A
Total Non-Federal Costs	\$160,985,000	\$694,000

Division: South Pacific

District: San Francisco  
5 February 2007

Oakland Harbor, California (50-ft)

Requirements of Local Cooperation (Continued)

The non-Federal sponsor has also agreed to make all required payments concurrently with project construction.

STATUS OF LOCAL COOPERATION: The non-Federal sponsor, the Port of Oakland, contributed full funding for the feasibility study of the 50 feet deepening of the Inner and Outer Harbor, under the authority of Section 203 of the Water Resources Development Act of 1986. The design agreement was executed on 24 March 1999. The Project Cooperation Agreement was executed on 24 May 2001. The current non-Federal cost estimate of \$160,985,000, which includes a cash contribution of \$73,960,000 (including reimbursement to the U.S. Treasury over 30 years), is approximately \$20,660,000 more than the amount reflected in the Project Cooperation Agreement. The non-Federal sponsor has indicated it is financially capable and willing to contribute to the non-Federal share. Our analysis of the non-Federal sponsor's financial capability to participate in the project affirms that the sponsor has a reasonable and implementable plan for meeting its financial commitment.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate (ultimate) of \$220,715,000 is an increase of \$52,615,000 from the latest estimate (\$168,100,000) presented to Congress (FY 2007). This change includes the following items.

Item	Amount
Price Escalation on Construction Features	\$2,000,000
Post Contract Award and Other Estimating Adjustments (including contingency adjustments)	50,615,000
Total	\$52,615,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Final Environmental Impact Statement was filed with EPA in May 1998.

OTHER INFORMATION: Funds to initiate preconstruction engineering and design were appropriated in Fiscal Year 1999. Funds to initiate construction were appropriated in Fiscal Year 2001. The initial construction contract was awarded on 27 September 2001. The Oakland Harbor PCA amendment package for acceptance of additional local funds was executed February 2005. The local sponsor has contributed additional funds to the project in FY 2006 to maintain the schedule.



APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Sacramento River Deep Water Ship Channel, California (Continuing)

LOCATION: The project is located on the Sacramento River between Collinsville and the Port of Sacramento, a distance of about 43 miles, in the counties of Sacramento Contra Costa, Solano, and Yolo, California.

DESCRIPTION: The project was authorized in 1989 to deepen the existing 30 feet Sacramento River from N.Y. Slough to the Port of Sacramento, a distance of about 43 miles, to 35 feet. Project provides for establishment of wetland habitat and upland habitat to mitigate losses. Construction was initiated in 1989, but stopped at the sponsor's request in 1991. Renewed interest by the Port of Sacramento initiated the Limited Reevaluation Report (LRR) in 2002, and their recent partnership with the Port of Oakland supports the early completion of the LRR and the construction of the deeper channel.

AUTHORIZATION: Supplemental Appropriations Act of 1985, WRDA 1986, WRDA 2000 (Sec. 305)

REMAINING BENEFIT - REMAINING COST RATIO: 11.26 @ 7 percent

TOTAL BENEFIT - COST RATIO: 8.35 @ 7 percent

INITIAL BENEFIT-COST RATIO: 2.5 to 1 @ 8 1/8 percent

BASIS OF BENEFIT - COST RATIO: Benefits are from the latest available evaluation in the General Design Memorandum, March 1986, approved in May 1987 at 1 Oct 1985 price levels. A Limited Reevaluation Report (LRR) is currently underway to verify the economic and environmental feasibility of continuing the authorized and partially constructed deepening project.

COMPLETION SUMMARIZED FINANCIAL DATA		ACCUM PCT OF EST FED COST	STATUS (1 Jan 2007)	PCT CMPL	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost (COE)	\$ 27,980,000		Entire Project	16	To be determined
Estimated Federal Cost (USCG)	300,000				
Estimated Total Appropriation Requirement	28,280,000				
Estimated Federal Cost (Ultimate)	27,980,000				
Estimated Non-Federal Cost	\$ 29,060,000				
Cash Contribution	\$ 9,330,000				
Other Costs	19,730,000				
Total Estimated Project Cost	\$57,340,000				
Allocations to 30 September 2004	9,081,000				
Allocation for FY 2005	223,000				
Allocation for FY 2006	0				
Conference Allowance for FY 2007	250,000				
Allocation for FY 2007	250,000	*			
Allocation through FY 2007	9,554,000		33		
Allocation Requested for FY 2008	900,000		36		
Programmed Balance to Complete after FY 2008	17,526,000				
Unprogrammed Balance to Complete after FY 2008	0				

PHYSICAL DATA

Channels:

Deepen existing 30 feet Sacramento River from N.Y. Slough to the Port of Sacramento, a distance of about 43 miles, to 35 feet.

Fish and Wildlife Areas:

Deposit dredged material at Prospect Island to aid in development of wetland and upland habitat for fish and wildlife mitigation and enhancement purposes

\* Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: Inadequate channel depths and widths produce serious detriments to deep-draft commercial vessel traffic. Since the existing channel was completed in 1963, tonnages have increased as a result of increased productivity of the agricultural industry in the northern and central portions of California, increased exports of forest products from this region, and increased foreign demand for agricultural products. Imports, including nitrogenous fertilizers, bulk commodities, and general cargo have also increased during this period. In addition, the channel has provided deepwater access for industries in the service area. New shipping techniques and modern terminal development have been necessary to accommodate this increased commerce. New or prospective trade policies point to the expansion of United States trade opportunities. This trade is significant to the Port of Sacramento since the Port's service area produces large quantities of rice, other grains, wood chips, and other dry bulk products required in the economy along the Pacific Rim, In 1992, 1,360,000 tons of commodities moved through the Port of Sacramento. With the increase in the shipping industry, vessel sizes have also increased accordingly. Currently these larger vessels must carry only a partial load going to or from the Port of Sacramento because of the channel depth restriction (only 20% of the world's fleet can currently load to full design draft.) To remain competitive with other western ports, the channel deepening is vital to the Port of Sacramento. Once deepened, the Port will be able to accommodate 70% of the world's fleet at full design draft. Average annual benefits at 1 October 1985 price level are \$10,620,000, all navigation.

FISCAL YEAR 2007: The request will be applied as follows:

Planning, Engineering and Design	250,000
Total	\$ 250,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Planning, Engineering and Design	900,000
Total	\$ 900,000

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below:

Requirements of Local Cooperation	Payments During Construction And Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Provide lands, easements, rights of way, and dredged material disposal areas.	\$ 10,365,000	N/A
Modify or relocate utilities, roads, bridges (except railroad bridges) and other facilities, where necessary for the construction of the project.	9,365,000	N/A
Pay 25 percent of the costs allocated to general navigation facilities during construction and pay 50 percent of the costs of incremental maintenance below 45 feet below mean low water.	9,330,000	
Total Non-Federal Costs	\$ 29,060,000	N/A

The non-Federal sponsor has also agreed to make all required payments concurrently with project construction.

STATUS OF LOCAL COOPERATION: The authorized project, to deepen the existing channel from a depth of 30- to 35-feet, was initiated in 1989 but work was suspended in 1990 at the request of the sponsor, the Port of Sacramento, due to their inability to continue financing their share of project costs. In 1998 Congress directed the Corps to perform a re-evaluation of the project that would serve as the basis for possible recommendation to resume construction. This re-evaluation was initiated in 2002, however, in 2005 the Port requested that the study be suspended until they could solidify their financial situation. Recently, the Port of Oakland has agreed to expand their operational model and help operate the Port of Sacramento. Both Ports fully support the deepening study, considered critical to the continued existence of the Port and vital to ensuring the safe navigation within the channel.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal estimate of \$27,980,000 is the same as last presented to Congress (FY 2006).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Environmental Impact Statement was filed on 8 May 1981; the Supplemental Environmental Impact Statement was filed on 2 January 1987. An Environmental Assessment addressing the environmental impacts of changes in design due to deleting portions of planned widening was completed 1 May 1988, and a Finding of No Significant Impact was signed 1 August 1988.

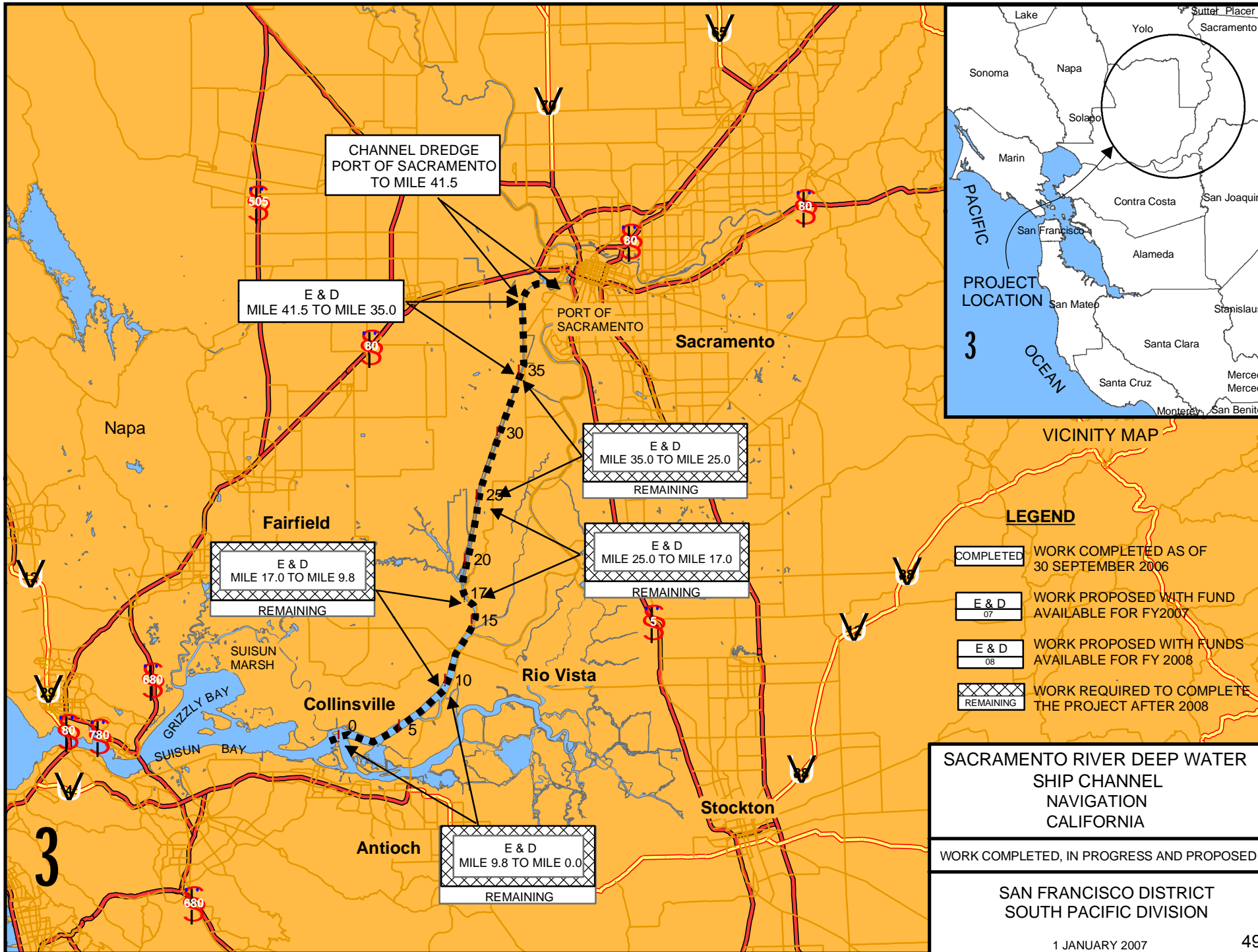
OTHER INFORMATION:

Funds to initiate preconstruction planning were appropriated in FY 1982 and to initiate construction in the FY 1985 Supplemental Appropriations Act. The first construction contract for deepening was awarded in February 1989.

The local sponsor requested a delay in construction during fiscal years 1993 and 1994 in order to resolve utility relocations issues and pursue the establishment of an assessment district and/or the sale of lands as a means of meeting their remaining financial responsibility for project completion.

The Water Resources Development Act of 1990 includes language directing the Corps to enforce Section 10 authority for relocation of utility lines on a reimbursable basis. However, the Port requested the Corps not pursue enforcement and expects to solve differences with the utility company through litigation procedures.





CHANNEL DREDGE  
PORT OF SACRAMENTO  
TO MILE 41.5

E & D  
MILE 41.5 TO MILE 35.0

E & D  
MILE 35.0 TO MILE 25.0  
REMAINING

E & D  
MILE 25.0 TO MILE 17.0  
REMAINING

E & D  
MILE 17.0 TO MILE 9.8  
REMAINING

E & D  
MILE 9.8 TO MILE 0.0  
REMAINING



VICINITY MAP

**LEGEND**

- COMPLETED WORK COMPLETED AS OF 30 SEPTEMBER 2006
- E & D  
07 WORK PROPOSED WITH FUND AVAILABLE FOR FY2007
- E & D  
08 WORK PROPOSED WITH FUNDS AVAILABLE FOR FY 2008
- REMAINING WORK REQUIRED TO COMPLETE THE PROJECT AFTER 2008

**SACRAMENTO RIVER DEEP WATER SHIP CHANNEL NAVIGATION CALIFORNIA**

WORK COMPLETED, IN PROGRESS AND PROPOSED

SAN FRANCISCO DISTRICT  
SOUTH PACIFIC DIVISION

COMMERCIAL NAVIGATION  
CONSTRUCTION  
SOUTHWESTERN DIVISION

**APPROPRIATION TITLE:** Construction, General - Channels and Harbors (Navigation)

**PROJECT:** Houston-Galveston Navigation Channels, TX (Continuing)

**LOCATION:** The project is located in the Galveston Bay system in Harris and Galveston Counties, Texas.

**DESCRIPTION:** The total project provides for a 45-foot project by enlarging the Houston Ship Channel to a depth of 45 feet and a width of 530 feet, and the Galveston Channel to a depth of 45 feet over a width which varies between 650 and 1112 feet, and deepening the entrance channel to the Galveston Harbor and Channel to 47 feet over its original 800-foot width and 10.5 mile length, and extending the channel an additional 3.9 miles to the 47-foot bottom contour in the Gulf of Mexico along the existing alignment. Dredged material from the bay will be used for construction of environmental restoration sites to include 4,250 acres of marsh, and 6 acres of Bird Island. One hundred seventy two (172) acres of oyster cultch (118 acres for the Main Channel and 54 acres for the Barge Lanes) have been placed as a mitigation feature to provide substrate for oysters to grow.

The deepening and widening of the Houston Ship Channel has been completed and the initial marsh cell creation and bird island construction have been completed. The first maintenance dredging cycles for the reaches within the Houston Ship Channel, the Galveston Channel improvements and the Environmental Restoration features which are construction of future beneficial use cells for maintenance material, remain to be constructed.

**AUTHORIZATION:** Water Resources Development Act (WRDA) of 1996. Energy and Water Development Appropriations Act, 2001, as enacted by Section 1(a)(2) of P.L. 106-377 (Barge lanes).

**REMAINING BENEFIT- REMAINING COST RATIO:** Houston Ship Channel: 5.7 to 1 at 7 percent; Galveston Harbor and Channel: 3.8 to 1 at 7 percent.

**TOTAL BENEFIT-COST RATIO:** 1.9 to 1 at 7 percent (Authorized Project with Barge Lanes).

**INITIAL BENEFIT-COST RATIO:** 1.8 to 1 at 7 5/8 percent. (FY 1996)

**BASIS OF BENEFIT-COST RATIO:** Benefits and costs are from the Limited Reevaluation Report and Supplemental Environmental Statement approved by HQUSACE in May 1996.

<b>SUMMARIZED FINANCIAL DATA</b>			<b>ACCUM. PCT. OF EST FED. COST</b>	<b>PHYSICAL STATUS (1 Jan 2007)</b>	<b>PERCENT COMPLETE</b>	<b>COMPLETION SCHEDULE</b>
Estimated Appropriation Requirement (CoE)		488,338,000		Channel Const.	95 %	To be determined
Programmed Construction	488,338,000			Entire Project	85 %	To be determined
Unprogrammed Construction	0					
Estimated Appropriation Requirement (OFA)		7,191,000		PHYSICAL DATA – Total Project		
Programmed Construction	7,191,000			Channels:		
Unprogrammed Construction	0			Houston Ship Channel – 39.2 miles (complete)		
Estimated Appropriation Requirement		495,529,000		Galveston Channel – 3.8 miles		
Programmed Construction	495,529,000			Galveston Harbor Channel–14.4miles (complete)		
Unprogrammed Construction	0			Barge Lanes – 26 miles (complete)		
Future Non-Federal Reimbursement		34,501,000		Beneficial use of Dredged Material		
Programmed Construction	34,501,000			Marsh – 4,250 acres		
Unprogrammed Construction	0			Bird Island – 6 acres (complete)		
Estimated Federal Cost (Ultimate) (CoE)		461,028,000		Redfish Island – 6 acres (complete)		
Programmed Construction	461,028,000			Offshore Underwater Berm (complete)		
Unprogrammed Construction	0			Mitigation (Oyster Cultch)		
Estimated Non-Federal Cost		171,931,000		Main Channel – 118 acres (complete)		
Programmed Construction	171,931,000			Barge Lanes – 54 acres (complete)		
Cash Contributions	137,748,000					
Other Costs:						
Berthing Facilities	10,618,000					
Lands and Relocations	1,167,000					
Credit	22,398,000					
Unprogrammed Construction	0					
Cash Contributions	0					
Other Costs	0					
Total Estimated Programmed Construction Cost		667,460,000				
Total Estimated Unprogrammed Construction Cost		0				
Total Estimated Project Cost		667,460,000				

**Division: Southwestern**

**District: Galveston**

**Project: Houston-Galveston  
Navigation Channels, Texas**

**6 February 2007**

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**SUMMARIZED FINANCIAL DATA (Continued)**

**ACCUM.  
PCT. OF EST  
FED. COST**

Allocations to 30 September 2004	266,655,000	
Allocation for FY 2005	27,045,000	
Allocation for FY 2006	29,957,000 <u>1/</u>	
Conference Allowance for FY 2007	43,076,000	
Allocation for FY 2007	43,076,000	
Allocations through FY 2007	366,733,000 <u>1/</u>	74%
Allocation Requested for FY 2008	16,320,000	78%
Programmed Balance to Complete after FY 2008	105,285,000	
Unprogrammed Balance to Complete after FY 2008	0	

1/ Includes \$4,217,000 Hurricane Supplemental funds received in FY06.

**JUSTIFICATION:** The total project will include environmental restoration (4,250 acres of marsh) and will provide transportation savings from using larger or more efficient vessels, reduction in vessel casualties, and reduction of vessel delays. The average annual benefits for the Houston-Galveston project are \$87,300,000, all commercial navigation, based on October 1994 price levels.

Annual Benefits	Amount
Navigation	\$ 87,300,000
Total	\$ 87,300,000

**FISCAL YEAR 2007:** Funds in the amount of \$43,076,000 will be used in FY 07 to construct additional ecosystem restoration features for the project, and to construct additional capacity for placement of dredged maintenance material. The ecosystem restoration features consist of constructing new placement areas to accommodate the maintenance material that will be dredged from the bay reach of the channel. These areas will then be used for planting marsh grass which results in the beneficial use of material dredged. The funds provided in FY 07 will be used as follows:

Initiate and complete construction of additional capacity at Placement Areas 14 & 15 and Alexander Island Placement Area	5,400,000
Initiate construction of Atkinson Island levee Cells 5 & 6	
Grass planting and Ditching of Marsh cells 1 & 2	18,430,000
Initiate and complete construction of Pelican Island and San Jacinto Placement areas at Galveston Channel	12,800,000
Initiate construction of Beltway 8 placement Area	1,970,000
Planning, Engineering and Design	2,000,000
Construction Management	<u>2,476,000</u>
Total	\$43,076,000

**FISCAL YEAR 2008:** Funds in the amount of \$16,320,000 will be used in FY 08 as follows:

Continue construction of additional capacity at Beltway 8 placement area	\$ 6,000,000
Complete construction at Atkinson placement area and marsh area	8,500,000
Planning, Engineering and Design	1,000,000
Construction Management	<u>820,000</u>
Total	\$16,320,000

**NON-FEDERAL COST:** In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, as amended, the non-Federal sponsor must comply with the requirements listed below:

<b>Requirements of Local Cooperation</b>	<b>Annual Operation, Payments During Construction and Reimbursements</b>	<b>Maintenance, Repair, Rehabilitation, and Replacement Costs</b>
Provide lands, easements, rights-of-way, and borrow and excavated or dredged material disposal areas.	\$ 1,104,000	
Modify or relocate, utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	63,000	
Local service facilities necessary to realize benefits of the general navigation features	10,618,000	
Pay a percentage of the costs allocated to navigation improvements, to mitigate the project's adverse environmental impacts, and to pay a portion of the cost of operation, maintenance, and replacement of the project.	160,146,000	\$604,000
General Navigation Features - Deep Draft	\$82,670,000	
General Navigation Features - Shallow Draft	1,316,000	
Environmental Restoration	30,640,000	
Environmental Restoration - Deferred Const.	45,520,000	
Reimburse an additional 10 percent of the costs of general navigation features allocated to commercial navigation within a period of 30 year 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 areas provided for navigation.	34,501,000	
<b>Total Non-Federal Costs</b>	<b>\$206,432,000</b>	<b>\$604,000</b>

**STATUS OF LOCAL COOPERATION:** The Project Cooperation Agreement I with the Port of Houston Authority was executed on 10 June 1998, and covered the Houston Ship Channel and the Entrance Channel segment of the Galveston Harbor and Channel. Houston and Harris County voters approved a \$130 million Port of Houston bond issued on 7 November 1989, by a 63 percent to 37 percent margin. The City of Galveston expressed their support for the total project by letters dated January 1987 and 30 October 1995. Negotiations with the City for the remainder of the Galveston Harbor and Channel began in Fiscal Year 1998 but stopped when the City indicated they did not have the funds for construction. Negotiations resumed at the end of Fiscal Year 2004 when the City again expressed a desire to sign the Project Cooperation Agreement, and continued with an expectation of executing the Project Cooperation Agreement last September 2005. However, the City of Galveston has continued to delay their decisions and now have agreed that the Port of Galveston should be the local sponsor. Negotiations with the port of Galveston have begun and the scheduled date for executing the Project Cooperation Agreement is June 2007.

**COMPARISON OF FEDERAL COST ESTIMATES:** The current Federal (Corps of Engineers) costs estimate of \$488,338,000 is an increase of \$3,000,000 from the latest estimate (\$485,338,000) presented to Congress (FY 2007). This change includes the following items.

Item	Amount
Price Escalation on Construction Features	\$ 3,000,000
Total	\$ 3,000,000

**STATUS OF ENVIRONMENTAL IMPACT STATEMENT:** The Final Environmental Impact Statement (FEIS) was filed with the Environmental Protection Agency in 25 November 1988. A supplement to the FEIS has been prepared and was listed in the Federal Register on 24 November 1995. A Post Authorization Change Report was completed and identified that 54 acres of oyster reef were impacted by the barge lanes construction and equal amounts of reef were constructed. An updated environmental analysis will be prepared with the supporting documentation sent up with the Project Cooperation Agreement to do the deepening of the Galveston Channel.

**OTHER INFORMATION:** The total project as authorized by WRDA 96 included channel deepening of the Galveston Entrance Channel, Galveston Harbor and Channel and the Houston Ship Channel to Boggy Bayou in Houston, Texas. Funds to initiate preconstruction engineering and design were appropriated in Fiscal Year 1990. Funds to initiate construction were appropriated in Fiscal Year 1998.

The 45-foot depth of the Houston Ship Channel is complete, but dredging requirements continue for the participation in the first maintenance of the channel reaches in accordance with the Project Cooperation Agreement. Construction of the Environmental Restoration features will continue over the 50-year economic life of the project starting from the completion date of the 45-foot depth, therefore the completion date is 2054. Environmental restoration costs include the costs for additional pumping distance to 3 environmental sites (Atkinson Island, Mid Bay and Bolivar) in the Galveston Bay, construction of the levees for additional capacity at these sites, and creation of the marshes, which include ditching and grass planting.



The upper, mid bay and lower bayou reaches of the Houston Ship Channel have experienced an increase in shoaling, which led to modifications to FY 2005 dredging contracts and depleted the 20-year capacity of the upland dredged material placement areas, as well as the placement areas in the upper part of Galveston Bay (Placement Areas 14 and 15). The depletion of this capacity has led to a change in the scope of work for Fiscal Year 2006 and 2007. Currently the upland placement areas' capacity at all upland sites is being increased to re-establish a 20-year capacity at each site. The capacity of these placement areas must be increased in order for the Houston Ship Channel to be maintained at the authorized depth.

The Remaining Benefit - Remaining Cost Ratio for the Houston Ship Channel is currently 5.7 to 1 at 7% interest rate because the construction features associated with dredging the placement areas are not complete, therefore constraining the full realization of benefits.



COMMERCIAL NAVIGATION  
CONSTRUCTION  
CONTINUING AUTHORITIES PROGRAM

APPROPRIATION TITLE: Construction, FY 2008

**Navigation Improvements (CAP Section 107)**

Appropriation for FY 2007	\$11,880,000*
Allocation Requested for FY 2008	\$477,000

GENERAL: Section 107 of the River and Harbor Act of 1960 (PL 86-645), as amended, authorizes up to \$35,000,000 annually for construction of navigation projects where such construction is not already specifically authorized by Congress. Projects are designed to provide the same complete navigation project that would be provided under regular authorization procedures. Each project selected must be economically justified and complete within itself. Federal cost participation cannot exceed \$4,000,000 per project.

PROPOSED ACTIVITIES FOR FY 2008: Proposed allocations are as follows:

SECTION 107 PROJECT OR ACTIVITY	AMOUNT
MACKINAC ISLAND HARBOR BREAKWATER, MI	75,000
KAHO'OLAWA SMALL BOAT HARBOR, HI	245,000
Section 107 Coordination Account	157,000
Section 107 Total	\$477,000

\* Assumed allocation. Final, actual allocations yet to be determined.

**Navigation Mitigation Projects (CAP Section 111)**

SUMMARIZED FINANCIAL DATA:

Appropriation for FY 2007	\$495,000*
Allocation Requested for FY 2008	\$4,874,000

AUTHORIZATION: Section 111 of the River and Harbor Act of 1968 (PL 90-483), as amended, authorizes the construction of projects for the prevention or mitigation of shore damages attributable to Federal navigation works.

JUSTIFICATION: The cost of installation is cost shared in the same manner as the costs for the project causing the shore damage were shared. The cost of operation and maintenance is borne by the non-Federal sponsor. Projects first cost shall not exceed \$5,000,000 without specific authorization by Congress.

PROPOSED ACTIVITIES FOR FY 2008: Proposed allocations are as follows:

SECTION 111 PROJECT OR ACTIVITY	AMOUNT
111 FAIRPORT HARBOR, OH	100,000
111 VERMILLION, OH	100,000
AGUADILLA COASTLINE,PR	3,250,000
Coordination Account Section 111	727,000
CAMP ELLIS, SACO, MAINE	247,000
LORAIN HARBOR, OH	100,000
MATTITUCK HARBOR,NY	300,000
MOBILE PASS, AL	50,000
Section 111 Total	\$4,874,000

\* Assumed allocation. Final, actual allocations yet to be determined.

**Beneficial Uses of Dredged Material (CAP Sections 145, 204, 207)**

SUMMARIZED FINANCIAL DATA:

Appropriation for FY 2007	\$4,950,000*
Allocation Requested for FY 2008	\$2,663,000

AUTHORIZATION: Section 204 of the Water Resources Development Act (WRDA) of 1992 Public Law (PL) 102-580, Section 207 of PL 102-580, and Section 145 of WRDA of 1976 (PL 94-587), as amended by Section 933 of PL 99-662, Section 35 of PL 100-676, Section 207 of PL 102-580, Section 217 of PL 106-53, and Section 111 of PL 106-541.

JUSTIFICATION: Section 204 authorizes projects for the protection, restoration, and creation of aquatic and ecologically related habitats, including wetlands, in connection with dredging for construction, operation, or maintenance of an authorized navigation project. Section 204 total program limit is \$15,000,000. Non-Federal interests are required to share in a minimum of 25 percent of the cost of each project. Section 207 modified Section 204 by authorizing disposal in any manner for which the environmental benefits outweigh the added costs. Section 145, as amended, authorizes placement of dredged material from Federal navigation projects on adjacent beaches if the state or a political subdivision of the state agrees to pay 35 percent of the incremental costs of such placement over the alternative least-cost, environmentally acceptable method of disposal. Policy for beach nourishment with dredged material limits Federal participation in such projects to one-time nourishment at each site.

PROPOSED ACTIVITIES FOR FY 2008: Proposed allocations are as follows:

CAP SECTION	PROJECT OR ACTIVITY	AMOUNT
Section 145	Section 145 Coordination Account	10,000
Section 204	21ST AVE WEST CHANNEL, DULUTH, MN	20,000
Section 204	BARATARIA BAY WATERWAY, MILE 6.0 - 0.0, PLAQUEMINES PH, LA	100,000
Section 204	BLACKHAWK BOTTOMS, DES MOINES COUNTY, IA	242,000
Section 204	CALCASIEU RIVER, MILE 5.0 - 14.0, CAMERON PARISH, LA	725,000
Section 204	ISLE AUX HERBES	250,000
Section 204	MAUMEE BAY HABITAT RESTORATION, OH	100,000
Section 204	MRGO MILE -3 TO -9 MARSH RESTORATION, (2001), PLAQUEMINES PH	1,071,000
Section 204	WANCHESE MARSH CREATION AND PROTECTION, NC	12,000
Section 204	WYNN ROAD, OREGON, OH	83,000
Section 204	Section 204 Coordination Account	50,000
Sections 145, 204, 207 Total		\$2,663,000

\* Assumed allocation. Final, actual allocations yet to be determined.

# REMAINING ITEMS

Appropriation Title: Operation and Maintenance – Fiscal Year 2008

**Aquatic Nuisance Control Research**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$2,500,000
Appropriation for FY 2007	690,000
Allocation Requested for FY 2008	690,000
Increase of FY 2007 from FY 2008	0

AUTHORIZATION: The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (PL 101-646).

JUSTIFICATION Invasive species cost the public over \$137 billion annually. It is now estimated that over 100 nuisance species are introduced into U.S. waters annually, which can impact operations and maintenance on Corps' facilities, as well as threaten valued natural resources. Zebra mussels alone cost the public over \$1 billion annually. Methods of prevention and more effective, inexpensive methods of control of invasive species must be developed to prevent impacts to public facilities and protect valuable natural resources.

Research efforts have been expanded under the Aquatic Nuisance Species Research Program (ANSRP) to address invasive aquatic species that impact the nations' waterways infrastructure and associated resources. Methods for prevention, control, and restoration of natural resources will be developed. Prevention methodology focusing on dispersal barrier technology will be investigated. The development of strategies to apply control methods involves engineering design, operations, and maintenance of facilities and structures. Control strategies are being developed for (a) navigation structures; (b) hydropower and other utilities; (c) vessels and dredges; and (d) water treatment, irrigation, and other water control structures. Methods to reduce invasive species impacts to threatened and endangered species and restore natural habitat will be investigated. Due to the introduction of the Northern Snakehead Fish and West Nile Virus, the Corps has experienced a significant increase in the number of field assistance requests at our operating projects. Numerous dredged material disposal areas in the Atlantic, Gulf coast and Great Lakes region have mosquito abatement programs. Due to the introduction of the West Nile Virus, local communities want greater assurances that mosquito populations at our disposal sites are controlled to the maximum extent practicable. Following introduction of the Northern Snakehead Fish, a number of Corps reservoir projects have had to take interdiction measures to prevent their introduction.

PROPOSED ACTIVITIES FOR FY 2008:

1. Provide strategic guidance for management and control of silver and bighead carp in large river systems.
2. Provide guidance on the efficacy of using barriers to restrict fish movement on navigable waterways.
3. Develop best management practices for prevention and control of armored suckermouth catfish in lakes/streams in Florida, Texas, and Hawaii.
4. Provide new chemical controls and bio-based screening criteria for Harmful Algal Blooms.
5. Examine the causal agent of Avian Vacuolar Myelinopathy (AVM) blamed for bald eagle deaths on Corps reservoirs.

ACCOMPLISHMENTS IN FY 2007:

1. Evaluated the effectiveness of electrical barriers on preventing Asian Carp movement into Lake Michigan.
2. Developed long-term management and control strategies for silver and bighead carp in big river field studies.
3. Developed chemical and biologically-based control and screening criteria for harmful algal blooms.



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4. Developed assessment techniques to measure the impacts of new introductions of ANS.
5. Developed a hybrid Internet-CD aquatic nuisance species information system for economically / environmentally important ANS species in North America.

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**Coastal Inlets Research Program**

SUMMARIZED FINANCIAL DATA:

Ceiling

Estimated Annual Cost of Continuing Program	\$4,000,000
Appropriation for FY 2007	2,475,000
Allocation Requested for FY 2008	2,475,000
Increase of FY 2008 from FY 2007	0

**AUTHORIZATION:** This effort is necessary to provide quantitative predictive tools and data for reducing the cost of dredging of Federal navigation projects and for supporting national security efforts to protect waterways and ports.

**JUSTIFICATION:** In FY05, the Corps spent \$628 Million to dredge 213 Million cu yd for maintenance of Federal navigation channels. Dredging costs have increased approximately \$14 Million each year from FY63 through FY05 due to increases in the number, length, and depth of navigation channels<sup>1</sup>. To be competitive, harbors and ports must deepen and widen navigation channels to accommodate larger, more advanced vessels. Dredging in and around the more than 500 inlet and harbor channels is a significant portion of this cost, as the age of stabilization and sediment-retaining structures such as jetties, interior revetments, and jetty spurs approach exceeds 100 years. The inlet-structure system does not function in isolation of the adjacent beaches, estuaries, and bay. Thus, storm protection and environmental implications of ongoing and future dredging actions must be considered within the holistic inlet system. The Corps needs knowledge and tools to better forecast future channel shoaling, design solutions to reduce dredging magnitudes and costs, while improving navigability of the nation's waterways and maintaining the integrity of the inlet-adjacent beach-estuary-bay system. deepening and widening in a Technical Note and peer-reviewed journal article.

PROPOSED ACTIVITIES FOR FY 2008:

(1) Wave climatology will be developed for all coasts (including the Great Lakes) and implemented within the AMDT. The AMDT will be tested in hindsight mode with data from FY07. (2) Incorporate equations to represent cohesive sediment transport and flocculation within the three-dimensional sediment transport model in the Coastal Modeling System (CMS) Surface Water Modeling (SMS) System. (3) Develop Inlet Navigation Toolbox, a web-based suite of simple analytical programs for rapid, desk-top rule-of-thumb predictions for inlet behavior. (4) Conduct idealized modeling within the CMS-SMS and develop analytical tools for predicting the increase in channel shoaling as a function of channel deepening and widening.

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<sup>1</sup> <http://www.iwr.usace.army.mil/ndc/dredge/ddcosts.htm> .

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ACCOMPLISHMENTS IN FY 2007: The CIRP successfully completed all of the project requirements and completed the following products:

1. Implemented Asset Management Decision Tool (AMDT) within the eCoastal framework. A structure for the AMDT was developed and data for the AMDT was coasts of the U.S., including the Great Lakes, populated the database. This system provides a rational framework for assessing and prioritizing repair of navigation structures.
2. Developed and tested shoreline change prediction within the Surface Water Modeling (SMS) System. The Coastal Modeling System (CMS) within the PC-based SMS package was upgraded to include prediction of shoreline change. The previous CMS included modeling of circulation (tide, wind, wave, freshwater influx), wave transformation, and sediment transport at regional and local scales. This upgrade including shoreline change prediction created a desk-top tool with the capability to evaluate the implications of dredging activities on adjacent coastal and bay beaches. A workshop was held for District, Division, and Industry personnel transferring the new capability.
3. Implemented 3D sediment, temperature, and salinity transport prediction within the SMS-CMS. Three-dimensional modeling of non-cohesive sediment transport, temperature evolution, and salinity transport was released within the SMS-CMS. This new capability allows prediction of how potential engineering modifications at inlets (e.g., lengthening jetties or deepening channels) and within the regional system (e.g., adding a dam on a river) modifies three-dimensional sediment transport and salinity intrusion within the inlet-estuary-bay-river system. This new capability was applied and validated at the Mouth of the Columbia River, Washington/Oregon.
4. Upgraded wave prediction within the SMS-CMS. An advanced wave prediction model was developed, tested, and implemented within the SMS-CMS. This advanced model more accurately predicts the complex interaction of wave-structure and wave-ship interactions within inlet navigation channels, including wave runup and overtopping of coastal structures, vessel-induced wakes and currents, and vessel-channel interaction.
5. Incorporated environmental variables in the Advanced CIRCulation (ADCIRC) model. Modeling of sediment transport and morphology change in inlet, estuarine, and bay systems was improved by incorporating environmental variables such as salinity, temperature, precipitation, and evaporation in the regional Inlet Modeling System-Advanced CIRCulation model (CMS-ADCIRC). These new features were transferred to District, Division, and Industry personnel in workshops.
6. Implemented implicit modeling of two- and three-dimensional sediment transport within the CMS. Implicit models have the potential to run up to 50 times faster than explicit models. The existing 2- and 3D sediment transport models within the CMS were rewritten to add an implicit solver, and these codes were tested at several sites with a 10- to 50-time reduction in simulation length. Rapid evaluation of operation and maintenance activities at navigation channels is even more accessible to District and Division engineers with the implicit version of these PC-based models. The 2D and 3D implicit versions were tested and validated at the Mouth of the Columbia River. A group of District and Division personnel were trained and are beta-testing the implicit codes.
7. Developed a comprehensive geomorphologic model of stabilized coastal inlet morphology to improve bypassing. Stabilized and dredged inlet systems create disequilibrium in the regional system when first constructed. Over decades to centuries, the inlet system evolves into a new equilibrium with the wave, current, and sediment transport regime. This guidance provides a model for a stabilized inlet system so that future modifications to the inlet navigation channel can be best designed to reduce channel shoaling and minimize adverse environmental and erosional conditions. The model was documented in a Technical Note and draft journal paper.

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**Dredging Data and Lock Performance Monitoring System**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost for Continuing Program	\$1,595,000
Appropriation for FY 2007	1,062,000
Allocation Requested for FY 2008	1,062,000
Increase of FY 2008 over FY 2007	0

AUTHORIZATION: These efforts are necessary to provide dredging and lock data for efficient management of Congressionally authorized navigation projects, as well as to respond to specific public laws, including PL 96-269 (Minimum Dredge Fleet), PL 100-656 (Small Business Set-Aside), for meeting the Government Paperwork Elimination Act (GPEA) and Clinger-Cohen/IT Management Reform Act.

JUSTIFICATION:

a. **Dredging Data and Lock Performance Monitoring System:** The dredging and lock data collection and processing programs provide information for the Corps operational and strategic management decisions; for performance indicators of the navigation projects and programs; and input for improvement studies in direct support to the Navigation Business Line mission. Information includes Corps performed and contracted dredging (location, quantity, cost etc.); all lock activities (barges and tons of commodities, chamber unavailability, processing times, delays etc.), and physical descriptions of all the Corps owned/operated locks. The funds support the database management, operation, enhancement, quality control, user assistance, training, compliance with security requirements and CEEIS services. Both systems are the sole source of dredging and lock data/information for the Corps, Federal government and industry. These databases are transactional systems within the Corps centralized Operations and Maintenance corporate information system. They are reported under OMBIL-Plus in ITIPS and the OMB 300b submittal accounting for \$725,000 of the overall OMBIL-Plus costs.

b. **Future National Dredging and Port Requirements.** Technological change in the shipping industry is a continual process requiring ongoing analytical efforts to estimate the nation's future maintenance dredging needs. Update of current and future vessel characteristics, channel dimensions, and commodity origins-destinations and other cargo data is needed to support the Corps maintenance dredging program. Tasks include updating of the world fleet composition and forecasts; analysis of current and projected commodity and traffic flows and trade patterns; and the collection and associated analysis of dredging information and performance data in support of CW navigation decisions.

PROPOSED ACTIVITIES FOR FY 2008: Continue to support the Corps Navigation responsibilities and be responsive to changing data needs by maintaining the Lock and Dredging information systems, providing essential upgrades, security and user support; developing additional data warehouse reports to support the data requirements of the performance based budget process, and work with the National Lock Data "Product Delivery Team" overseeing Corps lock data requirements. Update outdated (year 2000) forecasts from the National Dredging Needs Study for the world vessel fleet, commodities and trade; develop voyage ports-of-call information for containerships; assess vessels transiting U.S. ports; and physically model vessel motion to assess and minimize future dredging requirements. Provide dredging and lock analytical, technical, and data support for Corps offices. Provide lock performance measures to monitor lock operations performed by the MEO or contractor as the result of the competitive sourcing of the O&M of Locks and Dams activity.

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ACCOMPLISHMENTS IN PRIOR YEARS: Provided lock and dredging data and information critical for navigation performance measures, the assessment of dredge bidding competition, national and regional trends in dredging costs and quantity, the annual small business reports for SADBUs, and lock availability and performance. Performed operations, maintenance, system upgrades, security and user support for dredging and lock data systems. Finalized the lock data warehouse with all lock data available from a central source. The Dredging Needs Database was updated. Conducted in-depth review of Dredging Information System and implemented changes in response to the GAO study of benefits and effects of the Corps dredge fleet.

Appropriation Title: Operation and Maintenance – Fiscal Year 2008

**Performance Based Budgeting Support Program**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$2,727,000
Appropriation for FY 2007	2,540,000
Allocation Requested for FY 2008	2,540,000
Increase of FY 2008 over FY 2007	0

AUTHORIZATION: The Government Performance and Results Act of 1993 (GPRA) and under general authorities contained in various laws.

JUSTIFICATION: The President’s management agenda and GPRA requires that the Corps implement performance based budgeting for Civil Works Operations and Maintenance, General Program. The Performance Based Budgeting Support Program addresses this requirement by the collection, management and distribution of data; seeking new methods for linking performance to annual budget requests; and for analyzing the potential economic impacts on customers of varying budget levels.

a. **Civil Works Business Function Information:** Provides critical data and information related to Civil Works project inventories, outputs and performance measures; and for the operational and strategic management of Corps’ projects, programs, budget development and studies that directly support the Navigation, Hydropower, Recreation, Environment (Stewardship & Compliance), and Flood Damage Reduction Business Line missions. This information supports the Corps O&M program and is the sole source for the Corps, other Federal agencies, partners, stakeholders, and public. These funds include supporting the database management, integration, standardization, operation, enhancement, quality control, user assistance, training, compliance with security requirements and CEEIS services. It is reported under OMBIL-Plus in ITIPS and the OMB 300b submittal accounting for \$1,400,000 of the overall OMBIL-Plus costs. With out this program being funded will result in the Corps being unable to have any performance measurement for budgeting, management and the PART.

b. **Civil Works Performance Measurements:** Work includes improvement of performance measurements to be incorporated into the budget decision-making process; support for the Office of Management & Budget’s Performance Assessment Rating Tool (PART) initiative; and support for the future Corps budget preparation process. Efforts focus on the refinement of corporate performance principles; and program and project level performance measures that focus on anticipated performance and output at different levels of funding in accordance with the revised finance and accounting cost codes that now align with the five O&M business processes - navigation, hydropower, flood damage reduction, recreation and environmental stewardship. These measurements, at different organizational levels, provide the analytical basis to identify the incremental return on investment in Corps programs at various funding levels and to make adjustments in priorities both at the program and project levels concerning efficiency of facilities or services. Comparison of measurements among projects at all levels helps focus management attention on corrections of program or project deficiencies.

c. **Civil Works Business Analysis:** This task analyzes data using statistical and other analytical techniques and tools to uncover relationships among budget, expenditures and performance within and between Corps business processes. The relationships and statistics drawn from the data may provide evidence to support an increase in expenditures to improve performance. This task will also develop effective graphics to explain relationships found in the data and allow decision-makers to visualize cause and effect. This task links the data gathering, collection and distribution, and use of data in the decision-making process.

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PROPOSED ACTIVITIES FOR FY 2008: Requested FY 2008 funds will provide continuing support of Civil Works O&M integrated information systems; centrally distributed performance measures, outputs and system inventory information; and evaluation of new measures. FY 2008 funds will also support enhanced development of output-oriented performance measures of the incremental return on investment in Corps Civil Works program areas, including acquisition and training in decision-making software. An additional business line of enhanced support to flood damage reduction (FDR).

ACCOMPLISHMENTS IN PRIOR YEARS: Included were newly fielded centralized natural resource, water supply collection system and user's training in OMBIL data entry and access. The One-stop access for much of Civil Work's budget performance information was expanded for budget submittals in lieu of separate data calls for recreation and environmental stewardship.

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**Protection of Navigation (cont'd)**

c. Waterborne Commerce Statistics - The data provide essential information for navigation project investment analyses and annual funding prioritization for operations and maintenance of existing projects; as project output information for computation of performance measures; for input into the U.S. National Accounts; and for regulatory, emergency management decisions, and homeland defense. Activities supporting this national statistics mission include: (1) collecting and reporting (includes enforcement role) of water transportation statistical data; (2) automated systems development and operation (transactional systems within Operations and Maintenance corporate information system), processing, compiling, and publishing statistical data and information on waterborne commerce and vessels moving on the internal U.S. waterways, the Great Lakes, and through all U.S. ocean channels and ports; and (3) compiling and publishing the official U.S. documentation of U.S. vessels engaged in commerce, their principal trades and zones of operation. This item is reported under OMBIL-Plus in ITIPS and is \$1,600,000 of the total OMBIL-Plus cost.

d. Harbor Maintenance Fee Data Collection - Up to \$5 million is authorized to be used annually for the administration of the Harbor Maintenance Trust Fund. Most of these funds are used by Customs. The Corps is required to collect data on domestic and foreign shippers of waterborne commerce subject to the Harbor Maintenance Tax (HMT) and provide it to Customs for enforcement and audit purposes. Analysis of Harbor Maintenance Trust Fund (HMTF) revenues and transfers is required to validate the adequacy of the HMTF in light of the uncertainty over the legal and international challenges to the HMT, to document the operation of the trust fund, and to prepare and distribute the *Annual Report to Congress on the Status of the Harbor Maintenance Trust Fund*. Analysis of waterborne commerce shipments and vessel movement data is also needed to respond to legal questions to the HMT; to analyze alternative funding options; and to assess the economic and competitiveness impacts of other potential funding sources. Therefore the Corps requires a portion of the administrative funding. Funds will also be used to modify computer programs to conform to changes dictated by Customs' Automated Commercial Environment. This item is reported in OMBIL-Plus in ITIPS and is \$344,314 of the total OMBIL-Plus cost.

<u>FUNDING PROFILE</u>	<u>Actual FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>
(d) Harbor Maintenance Fee Data Collection	\$ 541,000	\$ 725,000	\$ 725,000
(a) Protection, Clearing, and Straightening of Channels	\$		
(b) Removal of Sunken Vessels	\$		
(c) Waterborne Commerce Statistics	\$ 3,806,000	\$4,271,000	\$4,800,000
TOTAL			

PROPOSED ACTIVITIES FOR FY 2008: Provide navigation project output data for FY 2010 budget formulation. Perform operations, maintenance and necessary enhancements of nation's waterborne commerce, vessel and shipper data and statistics programs. Work with shippers and carriers to insure enhanced operations at a minimum level of burden. Assist Customs with the development of their Customs Modernization Program to ensure that the Corps' foreign waterborne transportation data needs will be met by the new Automated Commercial Environment/International Trade Data System. Work with other Federal agencies and industry to design a new modern, comprehensive automated domestic waterborne data collection system.

ACCOMPLISHMENTS IN FY 2007: Maintained FY 2006 data quality and completeness. Provided navigation project output data for FY 2009 budget formulation. Worked with Federal partners, such as U.S. Customs and with industry to ensure data continuity. Emphasized automation of domestic data reporting.



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**Dredging Operations and Environmental Research (DOER) Program**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$7,000,000
Appropriation for FY 2007	6,080,000
Allocation Requested for FY 2008	6,080,000
Change in FY 2008 from FY 2007	0

AUTHORIZATION: The Water Resources Development Acts of 1986, 1988, 1990, 1992, 1996, and 1999 contained provisions addressing contaminated sediments in navigation channels, dredged material management, and beneficial uses that mandates a continuing need for innovative and enhanced technology.

JUSTIFICATION: The last comprehensive research effort on contaminated sediments and dredged material management was completed in 1978 under PL 91-611. More recent Water Resources Development Acts contained provisions addressing contaminated sediments in navigation channels, dredged material management, and beneficial uses that mandate a continuing need for innovative and enhanced technology. Contaminant detection limits are now so low that sub-trace levels of toxic substances are identified. High profile contaminants continue to plague numerous Federal and permitted dredging projects. Traditional upland disposal areas have reached or are approaching capacity with few opportunities for new facilities. Aquatic placement is under increased scrutiny due to habitat degradation concerns and expanded listings of aquatic threatened and endangered species such that this economically preferable alternative is contested by increased litigation and substantially higher costs. Environmental standards and controls for all dredged material placement alternatives are increasingly restrictive and continue to grow in number. Risk-based assessments and management have gained acceptance; unfortunately the Corps' corporate technology base is diminishing and must be maintained. Beneficial use/reuse of dredged material is a priority and environmental resource protection is a mandate, however costs are increasing due to the constraints noted above. Continued economic viability and security of the Nation will depend upon our ability to remove, manage and beneficially reuse dredged material in a cost-effective and environmentally responsible manner. Continued engineering and environmental innovation will be essential to keep costs within budget constraints.

The DOER Program is an integral and highly beneficial component of the Corps navigation dredging and environmental protection missions. Dredging and disposal must be accomplished within a climate of increased dredging workload, fewer placement sites, increased environmental constraints, and decreasing fiscal and manpower resources. Balancing environmental protection with critical economic needs while accomplishing dredging activities is a major challenge. The DOER program has validated innovative technologies for managing high profile contaminants and developed risk-based assessments that will significantly reduce testing costs at virtually all harbors. Methods for reclamation and reuse of contaminated sediments from upland disposal areas for beneficial purposes as well as increased capacity are key components of the program that will result in significant fiscal, manpower and time resource savings.

Major focus areas of DOER include, (1) innovative technologies, (2) environmental resource protection, (3) dredged material management, and (4) risk research.

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### PROPOSED ACTIVITIES FOR FY 2008:

1. **Innovative Technologies:** Complete evaluations of a diesel fuel additive designed to reduce emissions, provide fuel savings, and reduce stack gas temperatures for increased engine life. Complete development of overdepth analyses tools to provide operations managers timely information to monitor the amount of overdepth dredging taking place during dredging to improve planning for disposal sites with limited capacity. Complete evaluation of bed levers for “turtle friendly” cleanup operations to reduce amount of time (and money) that hopper dredges are required at the site. Initiate development of navigation channel condition indices calculations of key performance measures related to navigation channel asset management and reliability.

2. **Environmental Resource Protection:** Publish guidance for application of risk assessment-based methods for negotiation of objective environmental windows. Publish results of lab and field studies that identify specific effective protective measures for Threatened and Endangered Species that pose major conflicts with O&M navigation projects. Demonstrate new technologies for determination of critical habitat functions and calculation of population consequences of incidental takes. Publish guidance on restoring CDF capacity by means of optimized beneficial use. Publish documented assessments of fish habitat enhancements linked to open-water dredged material disposal alternatives.

3. **Dredged Material Management:** Guidance for Confined Disposal Facility sediment recycling. Complete guidance document for assessing sediment resuspension during dredging. Version 1 of fluid mud spread model incorporated into Surfacewater Modeling System (SMS) to optimize aquatic disposal site management. Publish studies documenting fluid mud behavior in navigation channels and disposal sites. Version 2 of SMS dredging toolbox with features including dredge look-up tables, additional dredging models and improved GIS capabilities.

4. **Risk:** Enhance sediment transport models through addition of contaminant partitioning and transport algorithms to provide more accurate estimates of contaminant exposure during dredging operations. Release guidance and models for conducting contaminant pathway and screening-level risk assessments for upland confined disposal. Publish case studies using multi-criteria decision analysis methods for dredged material management.

ACCOMPLISHMENTS IN FY 2007: The DOER Program successfully completed all of the project requirements and completed the following products:

1. **Innovative Technologies:** Completed field demonstration and verified design and implementation (QA) procedures of Silent Inspector automated monitoring system for mechanical and cutterhead dredges (all dredge types completed). Completed guidance document for dredging projects conducted in sediments contaminated with Munitions and Explosives of Concern (MEC). Completed feasibility study on the use of draghead screens as a Threatened and Endangered Species (TES) protection measure. Completed evaluation of fluid mud surveying systems and engineering recommendations on implementation of a USACE-wide navigable depth policy. Initiated planning and design of field demonstration/evaluation of a diesel fuel catalyzer that reduces emissions, provides fuel savings, and reduces stack gas temperatures for increased engine life. Initiated investigation of overdepth dredging to provide the USACE with quantitative analyses tools of overdepth dredging by different types of dredges in different types of site-specific conditions.

2. **Environmental Resource Protection:** Expand content of Threatened and Endangered Species Protection website (<http://el.erc.usace.army.mil/tessp/index.cfm>) to advance project planning and reduce impacts of dredging operations. Complete research on methods to minimize losses of threatened or endangered species during inland and coastal waterway dredging. Refine and disseminate new protocols for beneficial use of dredged material for aquatic habitat enhancement and protection of essential fish habitat. Continue collaborative

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efforts with regulatory agencies on research directed toward protection of sturgeon, salmon, sea turtles, piping plover, least tern and selected other species.

**3. Dredged Material Management:** Release Version 1 of SMS dredging toolbox to link dredging models/tools, other relevant models, dredging databases, and GIS databases within a user-friendly graphical user interface. New, more accurate and broadly applicable models of dredged material placement and dredged mound stability tested, published, and distributed to district users. New measurement devices for in-situ dredged aggregate erosion and settling tested, published, and in use for district projects. Demonstration for optimizing nearshore placement of dredged material for littoral zone/beach nourishment. New CDF desalinization guidance.

**4. Risk:** Publish and release through DOTS website models for predicting volatile losses from dredging and disposal activities. Release enhanced version of RECOVERY model for predicting contaminant fate, transport and exposure for dredging and capping operations. Release advanced risk model (FISHRand-Migration) for predicting exposures and risk to humans and wildlife resulting from dredging and disposal activities.

Appropriation Title: Operation and Maintenance – Fiscal Year 2008

**Dredging Operations Technical Support (DOTS) Program**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$1,500,000
Appropriation for FY 2007	1,391,000
Allocation Requested for FY 2008	1,391,000
Change in FY 2008 from FY 2007	0

AUTHORIZATION: These efforts are necessary to provide support for management of Federal navigation projects.

JUSTIFICATION: Maintenance of the nation’s navigation projects requires compliance with numerous complex environmental statutes and Presidential Executive Orders. The Dredging Operations Technical Support (DOTS) Program fosters a “one-door-to-the-Corps” concept by providing comprehensive and interdisciplinary technology transfer, technology application, and training essential to all stakeholders involved in Federal and permitted navigation projects. DOTS provides a structured, centralized source of technical information that maximizes ROI of R&D funds by facilitating transfer of existing and new technologies to field office personnel. Expeditious and consistent implementation of National policies and laws pertaining to navigation are supported by demonstration of new, effective technical solutions to problems confronted during the execution of authorized navigation projects. The DOTS Program serves as a direct link to state-of-the-art technologies and ongoing research results for timely application to problems identified by field offices. Emerging environmental concerns often cause uncertainty and unanticipated difficulties in the administration of the Corps’ navigation dredging program. The DOTS program’s technology transfer function provides access to an extensive, up-to-date, consistent technology base whereby timely, proactive responses to technical issues can be made as they emerge. This approach promotes networking and solutions to common problems confronting the navigation dredging community. DOTS supports knowledge-based exchange of information throughout the interagency coordination process. Short-term work efforts to address generic Corps-wide technical problems encountered during maintenance of navigable waterways and infrastructure are major features of the DOTS Program. Technology transfer and demonstration of new techniques with potentially high returns on investment for management of Corps navigation maintenance projects are critical DOTS functions. By disseminating technically sound knowledge to field offices constrained by staff reductions and limited resources, the DOTS Program will continue to perform a critical technology transfer role in support of all O&M navigation projects.

PROPOSED ACTIVITIES FOR FY 2008: Renewed emphasis will be placed on effective transfer of technology developed by the Corps and others engaged in maintenance and management of navigation structures and navigable waterways. Typical technology transfer topics include: management of Confined Disposal Facilities; management of contaminated dredged material; application of innovative risk-based technologies to assess contaminated dredged material; maintenance of coastal inlets and adjacent shorelines; shoreline stabilization and river training methodologies; assessment and management protocols for beneficial uses of dredged material; channel realignments; equipment selection; operational measures for protection of Threatened and Endangered Species; rational application of environmental windows and alternative best management practices; lock and dam maintenance needs; channel and harbor maintenance activities; ship simulation applications; and numerical modeling methods for resolution of engineering and environmental issues. A trend for increasing need for technical responses, evidenced by consistent growth in requests submitted by field offices on an annual basis, coincides with expansion of the DOTS mission to cover all navigation-related issues in addition to dredging and dredged material disposal. In FY 2008 DOTS will support dedicated training exercises tailored to regional issues associated with the above tech transfer topics. DOTS will continue to maintain and expand web-based tools and databases that are becoming routinely sought resources by Corps and non-Corps personnel alike. DOTS will continue to support rapid technical responses for requests from field offices.

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Personnel turnover due to retirement and attrition within the Corps and other regulatory agencies has created a growing demand for training in diverse technological areas. DOTS-sponsored training of Corps staff, personnel with regulatory authority over Corps navigation maintenance activities, and other stakeholders will convey the latest findings on environmental and engineering techniques associated with maintaining navigable waterways. Training topics include dredging and dredged material disposal; coastal and inland channel maintenance needs; water quality and related aquatic environmental issues; new and emerging techniques for accurate determination of compliance with environmental protection statutes regarding management of dredged material and other features of navigation projects; development and preparation of manuals jointly with the EPA that implement the inland and ocean disposal programs; and short-term work efforts to address generic Corps-wide technical dredging and dredged material management problems related to navigation projects.

DOTS will continue to fill a long-standing void with respect to outreach, providing a broad spectrum of educational materials related to the Corps' navigation mission. Relying on internet resources, this activity has rapidly become an extremely effective means of conveying comprehensive, accurate information to a broad audience, including students, educators, and the general public as well as professionals.

ACCOMPLISHMENTS IN FY 2007: The DOTS program successfully met all of its goals established for technical support, technology transfer, and outreach. Technical questions, from Federal and state agencies and private concerns dealing with implementation of the inland and ocean testing manuals, continued to be addressed. As mandated by the 1972 London Convention, the DOTS program annually compiles data and produces reports on ocean dumping activities to the EPA and the International Maritime Organization. The program has conducted 25 sediment management seminars since 1991 that have been attended by over 5,200 personnel from Corps districts, federal, state, and local agencies, industry, and environmental protection groups. Instruction focused on state-of-the-science techniques in regulating, testing, and managing dredged material. The program also continued to support communication among Corps field offices and numerous agencies engaged in development of regional strategies to promote assessment and protection of threatened and endangered species associated with navigation projects. Examples include extensive coordination and renewed effort to minimize take of sea turtles by hopper dredges, and involvement of the American Bird Conservancy in the search for resolution of conflicts between the conduct of navigation projects and Interior Least Tern populations. A joint Corps/EPA task force made significant progress toward formulation of a combined, generic ocean and inland disposal implementation manual. This effort fosters consistency in dredged material testing and management between the Clean Water and Marine Protection, Research and Sanctuaries Acts. This builds upon and serves as a companion to the completed final version of the Upland Testing Manual. Expansion, maintenance and updating of several web-based databases provided enhanced access to important sources of information, such as the Environmental Residue and Effects Database (ERED), which continued to be critical for successful implementation of the CE/EPA ocean and inland testing manuals for dredged material disposal. Additional databases that extend accessibility to related resources, including upland plant toxicology and tools for risk assessment applications were brought online and refined. A new database providing a comprehensive clearinghouse of information pertinent to protection of Threatened and Endangered Species has been added to the website and has seen extensive use by Corps personnel as well as other Federal and state agencies.

The DOTS Program continues to be an exceptionally successful conduit for navigation and dredging-related information, as evidenced by the distribution of thousands of technical manuals, bulletins, technical notes and reports currently found on the DOTS website (<http://el.erdc.usace.army.mil/dots>). The DOTS website provides a comprehensive information retrieval system for all Research and Development products related to regulating, maintaining, and managing the nation's navigable waterways. For example, the DOTS-sponsored Educational Outreach site (<http://education.wes.army.mil>) has become the most active of all Corps websites, visited by over three million users in its first year of operation, and experiences continued growth.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2008

**Dredge Wheeler Ready Reserve**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$10,500,000
Allocation for FY 2007	8,000,000
Allocation Requested for FY 2008	<b>8,000,000</b>
Increase of FY 2008 over FY 2007	0

AUTHORIZATION: Section 237 of the Water Resources Development Act of 1996 (WRDA 96) contained a provision requiring the Corps hopper dredge WHEELER to be placed in a ready reserve status.

JUSTIFICATION: Section 237 requires that no individual project funds may be used to fund the dredge in its ready reserve status unless the dredge is specifically used in conjunction with a project. Prior to Fiscal Year (FY) 1998, the costs for operation of the WHEELER had been reimbursed from project funds from the Operation and Maintenance, General appropriation, and subsequently charged to the Harbor Maintenance Trust Fund account as eligible navigation costs subject to reimbursement. In FY 1998, the WHEELER was placed in a ready reserve status as required by the above referenced section of WRDA 96.

PROPOSED ACTIVITIES FOR FY 2007: The hopper dredge WHEELER, will remain in ready reserve status, and will be required to be able to perform emergency dredging work, but will not be assigned any scheduled hopper dredging work. The dredge will be placed in an active status in order to perform work in those instances when private industry fails to submit a responsive or responsible bid for advertised dredging, or where industry has failed to perform under an existing contract.

ACCOMPLISHMENTS IN PRIOR YEARS: The WHEELER was kept at the dock, with sufficient crew to respond to any unforeseen requirement within 72 hours and to work for approximately three continuous weeks. The dredge was maintained in a fully operational state and periodically performed routine dredging operations to test equipment and keep the crew trained and prepared. The WHEELER performed approximately 60 days of training during the year. In every year but one, since being placed in ready reserve status, the WHEELER was called out to perform urgent dredging to assist industry dredges in restoring navigation channels and waterways.

## Inland Waterway Navigation Charts

### SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$3,708,000
Appropriation for FY 2007	3,708,000
Allocation Requested for FY 2008	3,708,000
Increase in FY 2008 from FY 2007	0

AUTHORIZATION: PL 85-480, approved 2 July 1958, authorizes the Commander, USACE to publish information pamphlets, maps, brochures, and other material on river and harbor, flood control, and other civil works activities, including related public park and recreation facilities that may be of value to the general public.

JUSTIFICATION: This effort provides Corps' Electronic Navigational Chart (ENC) data for all inland waterways and other federal navigation channels maintained by the Corps to be used by commercial Electronic Chart Systems (ECS), which, when combined with the existing Differential Global Positioning System (DGPS), will improve the safety and efficiency of marine navigation in both inland and coastal waterways of the United States. On inland waterways, the Corps will collect more accurate survey and mapping data than is currently on its paper charts, and produce Inland Electronic Navigation Charts (IENCs) in accordance with navigation users and ECS vendors. When combined in the commercial ECS, the technology will greatly improve the safety and efficiency of navigation. This will allow safe navigation through bridge openings during fog and other bad weather conditions as well as during heavy traffic situations, and provide an accurate display for other systems such as radar and Automatic Identification Systems. The Corps will use the S-57 international data format, which is consistent with electronic chart products produced by the National Oceanic and Atmospheric Administration (NOAA), and the chart products produced by the two agencies will be coordinated for compatibility in adjoining areas. The Corps will also coordinate with the U.S. Coast Guard for aids to navigation information and collaboration on rules for chart carriage by waterway users. In coastal and Great Lakes areas, the Corps will produce standardized channel condition chart products that will provide consistent and reliable information to NOAA for chart updates, in accordance with Water Resources Development Act of 2000, Section 558. Similar channel chart products will be provided to navigation users, and these coastal and Great Lakes channel condition chart products will also follow the S-57 format. Such ENC development and publication activities are in accordance with National Transportation Safety Board recommendations to the Corps, and subsequent commitments made by the Chief of Engineers.

PROPOSED ACTIVITIES FOR FY 2008: Continue development of chart coverage for the Missouri River – 500 river miles; continue development for Tennessee River – 650 miles; update features for the Mississippi, Ohio, Arkansas, Black Warrior-Tombigbee, Cumberland, Ten-Tom, Illinois, Kanawha Rivers – 4,500 miles; complete channel framework development for 50% of coastal and Great Lakes areas; establish standard for paper charts.

ACCOMPLISHMENTS IN FY 2007: New chart development – 660 river miles: Completed initial chart coverage for the Ouachita and Arkansas Rivers; Chart revisions and updates – 5,260 river miles: Published updated chart cells for the Mississippi, Ohio, Atchafalaya, Black Warrior-Tombigbee, Tenn-Tom, Arkansas, Green, Monongahela, Illinois, Kanawha, Lower Tennessee, and Red Rivers. Compiled coastal channel Framework data, initiated paper chart standard development, and began cooperative charting activities with the U.S. Power Squadron.

Appropriation Title: Operation and Maintenance – Fiscal Year 2008

**Monitoring Completed Navigation Projects (MCNP)**

**SUMMARIZED FINANCIAL DATA:**

Estimated Five-Year (FY2008-2012) Program Cost	\$ 10,000,000
Appropriation for FY 2007	1,575,000
Allocation Requested for FY 2008	1,575,000
Increase of FY 2008 over FY 2007	0

**AUTHORIZATION:** These monitoring efforts governed by **Engineer Regulation 1110-2-8151** are essential for providing data for efficient and effective management of critically important Federal shallow- and deep-draft navigation projects for both national economic and security reasons.

**JUSTIFICATION:** The Corps operates and maintains more than 800 navigation projects encompassing more than 25,000 miles of waterways. The Corps requires a national program to identify the best navigation project practices, and to use them to improve all navigation projects' performance. Optimizing Civil Works projects' performance requires that they be monitored upon completion, evaluated against preconstruction projections and present needs, and the lessons learned translated into proactive management guidance for Corps Districts. Information gained from Monitoring Completed Navigation Projects (MCNP), including changes in sediment transport, water levels, currents, waves, flushing, river flows, structure deterioration, and other coastal and river hydraulic phenomena with associated environmental impacts, will be used to verify design expectations, determine benefits, and identify operational and maintenance efficiencies. Information collected from monitored navigation projects will significantly improve projects' performance, and optimize opportunities for environmental enhancement. Information collected and analyzed on a national basis documents successful designs, disseminates lessons learned on projects with problems, and provides upgraded field guidance for solutions that will reduce life-cycle costs on a national scale.

Both shallow- and deep-draft navigation projects located in ports, harbors, rivers, reservoirs, lakes, estuaries, and in the coastal zone are included in this program. Projects that provide maximum cost savings are identified, and those that best address high-priority life-cycle O&M project cost savings are selected for monitoring and evaluation. Monitoring plans are developed jointly by Corps Districts and the US Army Engineer Research and Development Center (Coastal and Hydraulics Laboratory).

Coordination between the Corps and other Federal, state, and local agencies is essential for proper accomplishment of this program. In addition to satisfying Corps' requirements, the data are made available through publications and electronic technology transfer, and will be of great value to local, State, and other Federal agencies tasked with the development and implementation of regional and national coastal and inland navigation management policies. Results are communicated immediately to other member agencies of the Marine Transportation System (MTS).

**PROPOSED ACTIVITIES FOR FY 2008:** All monitored projects were nominated by Corps Division and District offices for inclusion in this MCNP research program.

At **Kaumalapau Harbor, HI**, breakwater where the largest CORE-LOC units ever used by the Corps (35 ton) were used to rehabilitate the structure, in situ wave measurements, wave hindcasts, and wave transformations will be performed to correlate armor unit movement with forcing functions. Breakwater settlement and armor unit movement will be ascertained by airborne laser digital terrain mapping and GPS systems with



## Appropriation Title: Operation and Maintenance – Fiscal Year 2008

precision sufficient to map individual armor unit movement. Toe stability monitoring will support POH with underwater surveys using the ROV, and settlement and breakage damage will be evaluated. Strength distribution within the units will be determined by analysis of previous destructive testing results from one unit.

At **J. T. Meyers Locks and Dam, KY**, monitoring will continue of damage progression at sections not repaired where steel wall armor may become hazardous to navigation. Repaired concrete sections using expedient materials and armor strips will be intensely monitored to ascertain effectiveness of repair techniques. Efforts will focus on precise inspections to fully observe and evaluate progressive damage process and successful performance of repaired sections. Final Technical Report will be prepared.

At **John Day Lock and Dam, OR**, data analysis and final Technical Report will recommend solutions to hazardous navigation conditions resulting from combination of power house outflow and surface currents from high water passage over gates being entrained in the downstream lock entrance channel.

At **Burns Harbor, IN; Cleveland Harbor, OH; and Keweenaw Waterway, MI**, quarterly monitoring of deterioration of scaled-size test index armor units will continue. Laboratory testing will develop new protocols for armor stone selection criteria more appropriate to large breakwater armor units.

**Periodic Inspections** will publish Technical Report on Lidar and field inspections of west coast jetties. Will survey Alaskan coastal structures using Lidar accompanied by field inspections; will update the e-coastal GIS interface and add periodic inspection data; and will coordinate with other research program work units revising Condition Index System for USACE Asset Management.

At **Montgomery Point Lock and Dam, AR**, acoustic doppler current meters, video cameras, strain gages, seismometers, and wireless telemetry systems will be installed to transmit real-time data to ERDC for analysis so that modification techniques and operating procedures can be developed to eliminate hazardous navigation conditions at low water. Results will be applicable to other lock and dams with similar low flow conditions.

**ACCOMPLISHMENTS IN PRIOR YEARS:** In FY 2007, four Technical Reports were published and disseminated to Corps Field Operating Activities, with improved, updated, and enhanced design guidance.

At **Kaumalapau Harbor, HI**, wave hindcasts were acquired offshore of the breakwater and wave data were collected from buoys. Deepwater waves from the hindcasts were transformed into shallow water, and an electronic transformation look-up table was developed. The first post-rehabilitation onsite inspection of completed 35-ton CORE-LOC breakwater to document the as-built condition was conducted. In situ non-destructive testing of selected CORE-LOC units placed on the breakwater during rehabilitation was performed to document strength variations due to aging and location in the wet/dry zones. Destructive testing of one CORE-LOC unit was performed to better understand internal unit stresses.

At **J. T. Myers Locks and Dam, KY**, damage surveys were conducted to document any additional damage and performance of the FY06 repairs to the lock wall armor. Innovative wall armor repair techniques were developed and applied to the damaged sections without interruption of navigation operations. New vertical wall armor test strips were developed using innovative techniques. Photographic and non-destructive testing was performed to provide durability data for correlation with lock traffic.

Appropriation Title: Operation and Maintenance – Fiscal Year 2008

At **John Day Lock and Dam, OR**, monitoring video, velocity, and discharge data collection were completed. Video, velocity, and discharge data were analyzed to understand the mechanism by which hazardous velocity conditions exist at times, due to entrainment of flow from the powerhouse to the spillway as a result of fish passage improvements. A draft Technical Report was prepared describing physical and operational changes necessary to alleviate the dangerous navigation conditions under certain river conditions.

At **Burns Harbor, IN; Cleveland Harbor, OH; and Keweenaw Waterway, MI**, monitoring data were obtained and analyzed quarterly, to evaluate effects of freeze/thaw and wet/dry conditions on scaled-size test index armor units. Evaluated present testing methods and protocols to determine breakwater armor stone acceptance methodology more appropriate to large stone units. Prototype monitoring data were correlated with laboratory analyses of identical samples from various local quarries.

**Periodic Inspections** published LIDAR inspection reports on Burns Harbor and Cleveland Harbor breakwaters, and performed field inspections and LIDAR surveys of Pacific coastline jetties.

**Montgomery Point Lock and Dam, AR**, experiences difficult and hazardous navigation conditions particularly during low water conditions. A comprehensive monitoring plan was developed to investigate all problem aspects, including overflow spillway stone protection, sedimentation, lock approaches, forces on crest gates, impact loads on floating guide walls, and seismic response of this soil founded structure. Solutions developed at this location will be directly applicable to other similar low water hazardous conditions on the Ohio and Mississippi River systems.

Appropriation Title: Operation and Maintenance – Fiscal Year 2008

**Regional Sediment Management Program (RSM)**

SUMMARIZED FINANCIAL DATA:

Ceiling

Estimated Total Program Cost	\$30,000,000
Allocation for FY 2007	1,391,000
Allocation Requested for FY 2008	1,391,000
Decrease of FY 2008 from FY 2007	0

AUTHORIZATION: Section 516 of WRDA 96 authorizes the development of long-term strategies for the management and control of sediments through studies and operational activities.

JUSTIFICATION: The RSM Program objectives are to establish regional management strategies that link the sediment management actions at authorized Corps projects with one another, coordinate management activities with other Federal agencies, State, and local governments, and leverage data collection within regional systems including inland watersheds, rivers, estuaries, and the coast. The goal is to demonstrate short- and long-term cost savings and increased economic and environmental benefits through management of sediments from a regional perspective.

PROPOSED ACTIVITIES FOR FY 2008: Continue implementation of RSM through support to Districts and Divisions to include: technology transfer of eCoastal GIS data management capabilities and operational expertise, conduct sediment inventory and sediment needs assessment for Long Island, NY, formulate Conceptual Model and Habitat Evaluation Procedure to document National Ecosystem Restoration benefits associated with coastal sediment management actions, refine the southwest Florida sediment budget by focusing on Big Sarasota Pass and continue development of the northeast Florida sediment budget to encompass the Central Atlantic region of the state, and conduct sediment transport modeling for the Lower Green River and Duwamish estuary to predict the regional redistribution of sediments and environmental benefits and impacts due to reservoir drawdowns.

ACCOMPLISHMENTS IN FY 2007: All Corps Division Offices (within the U.S.) continued implementation of regional sediment management initiatives at the Division level and through their respective District offices and formalized processes through Program Management Plans. The program will continued to foster stakeholder relationships and educating through online knowledge sharing and technology access. The program established a national RSM eGIS team to provide leadership in continuing development and implementation of an enterprise GIS and tools for data analysis and decision making. The program developed comprehensive regional sediment management strategies to guide investment decisions and present the economic, environmental, and social benefits achieved through RSM. Information and capabilities were disseminated via online training, onsite workshops, and websites.

# ENVIRONMENT

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Environmental Programs

## Program Assessment

### Corps of Engineers: Environmental Stewardship

Program

View Similar Programs

The Corps operates 456 dams, reservoirs and other water-related projects nationwide. It is responsible for adjacent Army Corps-owned land. This Corps-owned property covers 12 million acres, equal in size to the States of Vermont and New Hampshire combined. The purpose of this program is to manage this land responsibly.

#### PERFORMING

#### ★ Adequate

Rating

What This Rating Means

- **The Corps has done an adequate job managing the land and other natural resources entrusted to it, but it needs to take a more proactive management approach so it has better knowledge of the resources it is responsible for.** For example, it needs to complete natural resource inventories for the sites it manages.
- **An up-to-date Master Plan can help the Corps manage its properties in a responsible way.** Corps regulations require Master Plans for Corps properties but these are not always kept up-to-date.
- **An independently-conducted comprehensive evaluation of the Environmental Stewardship program may provide additional information useful to enhance program effectiveness.**

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## We are taking the following actions to improve the performance of the program:

### Improvement Plan

About Improvement Plans

- Preparing a series of natural resource inventories, focusing first on areas where an inventory is likely to improve Corps management.
- Preparing and updating Master Plans for Corps properties, as called for in Corps regulations, whenever doing so is cost-effective.
- Conducting an independent assessment of the Corps' Environmental Stewardship program in 2006 and 2007.

### Learn More

- **Assessment Details, Funding, and Improvement Plan.**
- How all Federal programs are assessed.
- Learn more about Corps of Engineers: Environmental Stewardship.

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# INVESTIGATIONS

ENVIRONMENT  
INVESTIGATIONS  
GREAT LAKES AND OHIO RIVER DIVISION



APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Great Lakes and Ohio River Division

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Indiana Harbor, IN (Grand Calumet) Chicago District	3,400,000	1,106,600	533,000	297,000	300,000 *	300,000	863,400

The study area is located in northwest Indiana in the communities of Gary, East Chicago, and Hammond, Indiana. The study area covers 15.4 river miles, including the Indiana portion of the Grand Calumet River (with the exception of an area cleaned up by United States Steel) and the portions of the Lake George Canal and the Indiana Harbor Canal that are not part of the federal navigation channel. This area contains approximately two million cubic yards of bottom sediments that are highly contaminated with polynuclear aromatic hydrocarbons, metals (including lead and chromium), and PCB's (below the Toxic Substance Control Act level), causing it to be designated an Area of Concern (AOC) in the Great Lakes Water Quality Agreement. AOCs are identified as areas with one or more impairments of fourteen beneficial uses. This area fails all fourteen beneficial uses. The Grand Calumet River/Indiana Harbor is a high priority clean-up area for the Indiana Department of Environment Management (IDEM) and the Indiana Department of Natural Resources (IDNR), the non-Federal sponsors. The purpose of this study is to investigate and recommend alternatives for management of the contaminated sediment including removal and stabilization of embankments and other features within the ordinary High Water Mark for the Grand Calumet River. Sediment is the source of contamination and environmental restoration cannot occur without removal or management of the contaminated sediment. The Feasibility Cost Sharing Agreement was executed on 24 May 2004.

FY 2007 funds are being used to continue work on the feasibility study and draft EIS. The Alternative Formulation Brief is expected soon. FY 2008 funds will be used to continue work on the feasibility study, EIS, HQ reviews and approval process by the ASA (CW). The estimated cost of the feasibility phase is \$6,200,000, which is to be shared on a 50/50 percent basis by Federal and non-Federal interests. The non-Federal sponsor will provide their share as work-in-kind. A summary of the study cost sharing is as follows:

Total Estimated Study Cost	\$6,500,000
Reconnaissance Phase (Federal)	300,000
Feasibility Phase (Federal)	3,100,000
Feasibility Phase (Non-Federal)	3,100,000

The feasibility phase completion date is 30 September 2009.

\*Assumed allocation. Final, actual allocations yet to be determined.

5 February 2007

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008  
Great Lakes and Ohio River Division

Project	Total Estimated Federal Cost \$	Allocation Prior to FY 2007 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Buffalo River Environmental Dredging, NY Cost-shared Feasibility Study Buffalo District	1,050,000	70,000	100,000	100,000	780,000

The Buffalo River is located at the eastern end of Lake Erie in Buffalo, NY. The Buffalo River has been identified as one of 43 Areas of Concern (AOCs) in the Great Lakes Basin. Contaminated sediments adjacent to the Federal navigation channel eventually settle in the Federal navigation channel and are unsuitable for open lake disposal. Periodic maintenance of the Federal navigation project requires disposal of the contaminated sediments into a confined disposal facility (CDF) at considerable Federal expense. The reconnaissance report was completed in December 2003 and addressed the use of Section 312 of the WRDA 1990, as amended, which allows the removal of contaminated sediments adjacent to Federal Navigation projects. The feasibility study provides for sediment analyses, delineation of areas requiring environmental dredging, development of project cost estimates/cost sharing, and an assessment of the ability of the local sponsor to support the project. Removal or remediation of these sediments will significantly reduce the future Federal cost of maintaining the navigation channel, restore beneficial uses of the river, and allow for the implementation of ecosystem restoration projects. Beneficial use impairments for the Buffalo River currently listed by the USEPA include: restrictions on fish and wildlife consumption; fish tumors or other deformities; degradation of benthos; restrictions on dredging activities; and loss of fish and wildlife habitat. The New York State Department of Environmental Conservation and the Buffalo River Remedial Action Plan (RAP) Committee support contaminated sediment removal. Additionally, the city of Buffalo and Erie County have demonstrated an interest in supporting environmental restoration projects within the study area. The feasibility cost sharing agreement initiating the feasibility study was signed with the Friends of the Buffalo Niagara Rivers on April 8, 2005.

Fiscal Year 2007 funds are being used to execute the technical investigations composing the feasibility study such as the human health and ecological risk assessment; the geotechnical analysis; and the engineering and design analysis. The capability in Fiscal Year 2008 is \$500,000. In addition to the tentative allocation of \$100,000, another \$400,000 could be used to execute additional feasibility investigations and to create the feasibility report and environmental impact statement. The estimated cost of the feasibility phase is \$2,100,000, which is to be shared on a 50/50 percent basis by both Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$2,100,000
Feasibility Phase (Federal)	1,050,000
Feasibility Phase (Non-Federal)	1,050,000

The feasibility study is currently scheduled for completion in FY09.

ENVIRONMENT  
INVESTIGATIONS  
MISSISSIPPI VALLEY DIVISION

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Mississippi Valley Division

Study	Total Estimated Federal Cost \$	Allocation Prior To FY 2005 \$	Allocation for FY 2005 \$	Allocation for FY 2006 \$	Allocation for FY 2007 \$	Allocation Requested for FY 2008 \$	Additional to Complete After FY 2008 \$
ILLINOIS							
Illinois River Basin Restoration, IL Rock Island District	7,077,000	2,203,000	397,000	1,162,000	400,000 *	400,000	2,515,000

The Illinois River Basin Restoration study encompasses the entire Illinois River watershed within the State of Illinois, a nationally significant ecosystem. The purpose of the Illinois River Restoration study includes the development of a comprehensive plan for the restoration of the Illinois River watershed, evaluation of critical restoration projects, and initiation of long-term resource monitoring. The plan will address habitat, water quality, navigation, and economic opportunities. Components will include fish and wildlife conservation and rehabilitation measures; land and water resources enhancement; sediment transport; sediment removal and disposal measures; long-term resource monitoring; and a computerized inventory and analysis. This effort complements the related Illinois River Ecosystem Restoration Feasibility Study. The comprehensive plan for this project will be included with the Illinois River Ecosystem Restoration study in a joint report. Sixteen critical restoration projects have been identified to date. These projects were selected based on assessment of restoration needs with involvement of Federal and non-Federal partners. Critical restoration projects are being designed and will be constructed using Construction, General funds concurrently with the preparation of the comprehensive plan. The feasibility cost sharing agreement with the State of Illinois was signed 31 July 2002.

Fiscal Year 2007 funds are being used to coordinate review of Final Comprehensive Plan, conduct feasibility level analysis of critical restoration projects (i.e., Senachwine Creek, Starved Rock Pool, Blackberry Creek, Alton Pool, Kankakee River, Fox River, and Yellow River), sediment gaging and program management.

Funds requested for Fiscal Year 2008 will be used to complete critical restoration project feasibility efforts at Starved Rock Pool, Blackberry Creek, Alton Pool, and Fox River and continue and resume critical restoration project feasibility efforts on six projects (e.g. Senachwine Creek, Kankakee River, Tenmile Creek, Crow Creek West, McKee Creek, and Yellow River) at an efficient rate in concert with the non-Federal sponsor.

The estimated cost of the feasibility phase is \$10,180,000. In accordance with Section 519, WRDA 2000, this study is to be shared on a 65-35 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$10,640,000
Reconnaissance Phase (Federal)	460,000
Feasibility Phase (Federal)	6,617,000
Feasibility Phase (Non-Federal)	3,563,000

The reconnaissance phase was completed in July 2002. Completion of the feasibility study is being determined.

\* Assumed allocation. Final, actual allocations yet to be determined.

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Mississippi Valley Division

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation for FY 2005 \$	Allocation for FY 2006 \$	Allocation for FY 2007 \$	Allocation Requested for FY 2008 \$	Additional to Complete After FY 2008 \$
LOUISIANA							
Louisiana Coastal Area --Ecosystem Restoration, LA New Orleans District	92,500,000	14,009,000	6,758,000	8,425,000	20,000,000*	8,000,000	55,308,000

Over 1 million acres of Louisiana's coastal wetlands have been lost since the 1930's; another one-third of a million acres could be lost over the next 50 years unless large-scale corrective actions are taken. Disruption of natural processes by the development of the watershed of the Mississippi River and in the Louisiana coastal area (LCA) is the primary cause of the coastal land loss. Additional impacts result from natural subsidence and erosion of the lands where the Mississippi delta meets the Gulf of Mexico. The Louisiana Coastal Area Ecosystem Restoration Study Report was completed in November 2004. A feasibility cost sharing agreement was executed between the Federal Government and the State of Louisiana, the non-Federal sponsor, in February 2000 and amended in March 2002 and October 2004. This budget request continues the restoration planning efforts that are currently underway. The ecosystem restoration program will construct significant restoration features, undertake demonstration projects, study potentially promising large-scale, long-term concepts, and take other needed actions to restore the ecosystem. A 10-year plan of studies and projects was developed through a public involvement process, and working closely with other Federal agencies and the State of Louisiana. All construction activities under the plan will be subject to approval of feasibility level of detail documents by the Secretary of the Army. The science program has been budgeted as a separate line item beginning in Fiscal Year 2006.

Fiscal Year 2007 priorities include: continuation of a feasibility report; submission of a decision document; continuing development of the Beneficial Use of Dredged Material Program feasibility study; advancing the supplemental environmental impact statement; completion of the PMPs/FCSAs for and initiating the following feasibility studies - Chenier Plain Freshwater and Sediment Management and Allocation Reassessment, Small Bayou Lafourche Reintroduction, Medium Diversion with Dedicated Dredging at Myrtle Grove, and MRGO Ecosystem Restoration, as well as the Mississippi River Hydro/Delta Management Study; and writing negative reports for the Acadiana Bays and Third Delta (Related Investigations - other large scale concepts).

Fiscal Year 2008 priorities are: completion of a feasibility report, submission of a decision document, and beginning preconstruction engineering and design (PED) work on a Barataria Basin Barrier Shoreline Restoration project. Additional work includes continued execution of the studies initiated in Fiscal Year 2007; starting at least three new feasibility studies - Terrebonne Basin Barrier Island Shoreline Restoration, Small Diversion at Hope Canal, and Land Bridge Between Caillou Lake and Gulf of Mexico, and completing the Beneficial Use of Dredged Material Program feasibility study.

\* Assumed allocation. Final, actual allocations yet to be determined.

The estimated cost of preparing the Near-Term Program follow-on feasibility studies is \$185,000,000. The study cost is as follows:

Total Estimated Study Cost	\$185,000,000
Reconnaissance Phase (Federal)	N/A
Feasibility Phase (Federal)	92,500,000
Feasibility Phase (Non-Federal)	92,500,000

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Mississippi Valley Division

Study	Total Estimated Federal Cost \$	Allocation To FY 2004 \$	Allocation for FY 2005 \$	Allocation for FY 2006 \$	Allocation for FY 2007 \$	Allocation Requested for FY 2008 \$	Additional to Complete After FY 2008 \$
Louisiana Coastal Area -- Science Program, LA New Orleans District	50,000,000	0	0	2,475,000	5,000,000 *	5,000,000	37,525,000

Over 1 million acres of Louisiana's coastal wetlands have been lost since the 1930's; another one-third of a million acres could be lost over the next 50 years unless large-scale corrective actions are taken. Disruption of natural processes by the development of the watershed of the Mississippi River and in the Louisiana coastal area (LCA) is the primary cause of the land loss. Additional impacts result from natural subsidence and erosion of the lands where the Mississippi delta meets the Gulf of Mexico and from storm impacts associated with tropical storms, winter cold fronts, and hurricanes.

The Science Program will support resolution of the uncertainties identified in the Corps of Engineers LCA near term feasibility report. The Science Program will develop, test, and provide system-wide frameworks for monitoring, modeling, and evaluating restoration efforts capable of supporting an analysis based on the incremental cost-effectiveness of restoration measures; lead a long-term research effort to advance understanding of the dynamics of the coastal ecosystem and its needs and to address the key scientific and technological uncertainties and challenges facing the effort to protect and rebuild the ecosystem; review proposed demonstration projects and large-scale studies; ensure that significant scientific findings and recommendations for adaptive management are made available to the ecosystem restoration program so that they can be incorporated into engineering plans on an ongoing basis; and monitor the ecological effects of the overall restoration effort. The efforts of the Science Program will be closely coordinated with the ecosystem restoration program to ensure that they support both near-term and long-term restoration needs. The Science Program was established as a separate line item in the Fiscal Year 2006 budget. Funding for research, model development, and monitoring will be awarded on a competitive basis under the direction of the Science Program Office. The local sponsor is the State of Louisiana.

Fiscal Year 2007 funds are being used to hire a Director, sustain the Science Board and Science Coordination Team, establish the Science Office, conduct organization meetings of the Board and Team, continue priority work items (i.e., identification of monitoring, modeling, and planning tools to support analysis of coastal ecosystems of Louisiana and Mississippi). Additionally, continuing research and development initiatives include: data acquisition; efforts to establish and maintain information management protocols to facilitate the sharing of findings between scientists, engineers and planners; development of advanced ecosystem functioning and benefits assessment models; and identifying adaptive management principles for incorporation into project recommendations.

Funds requested for FY 2008 will be used to sustain the Science Program Office and a Director, fund the Science Program Office and support its activities which include: the Science Board and Science Coordination Team; implementation and refinement of decision making frameworks, benefits metrics, and data and information management plans; continued development of models and planning tools to support the ecosystem restoration planning needs; and identifying potential demonstration projects to address scientific uncertainties. Issues associated with the coastal ecosystems of Louisiana and Mississippi will also be addressed.

The estimated cost of the Science Program is \$100,000,000 over a 10-year period and will be cost shared on a 50-50 percent basis as follows:

Total Estimated Program Cost	\$100,000,000
Reconnaissance Phase (Federal)	N/A
Feasibility Phase (Federal)	50,000,000
Feasibility Phase (Non-Federal)	\$ 50,000,000

\* Assumed allocation. Final, actual allocations yet to be determined.



APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Mississippi Valley Division

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation for FY 2005 \$	Allocation for FY 2006 \$	Allocation for FY 2007 \$	Allocation Requested for FY 2008 \$	Additional to Complete After FY 2008 \$
MINNESOTA							
Wild Rice River, MN (Red River of the North Basin, MN, ND, SD and Manitoba, Canada) St. Paul District	1,560,000	488,000	232,000	99,000	300,000 *	270,000	171,000

The Wild Rice River is a tributary of the Red River of the North in northwestern Minnesota, about 250 miles northwest of Minneapolis. Agriculture dominates the watershed economy and land use and has been the prime motivator for extensive channel straightening, ditching, and drainage. The topography contributes to flood problems. The Wild Rice River's fast moving flow from relatively steep upland and beach ridges from glacial Lake Agassiz discharges onto the flat glacial lakebed where channel capacity is inadequate. Flooding has become more frequent and severe in recent years. For example, the June 2002 flood was the flood of record at Ada, Minnesota (Norman County seat) and exceeded the 500-year event in portions of the watershed. In collaboration with Federal and State agencies, environmental organizations, landowners, and other stakeholders, the Wild Rice Watershed District, non-Federal sponsor for the Wild Rice River Feasibility Study, conducted an assessment of water resource problems, needs, and opportunities. That assessment determined that priority should be given to flood damage reduction and environmental restoration in the lower portion of the watershed, recommended further investigation of a number of corrective measures, and concluded that high implementation costs necessitated Federal participation. Based on those findings, the Wild Rice Watershed District and Corps executed a feasibility cost sharing agreement 10 January 2003 and are partnering the study to address ecosystem restoration as well as floodwater storage and diversion alternatives. The feasibility study will collect baseline data, develop analytical models, and conduct preliminary screenings of storage and diversion measures to determine the likelihood of Corps participation.

Fiscal Year 2007 funds are being used to continue the feasibility study. Specific goals include updating the project study plan; developing a community model for measuring the environmental outputs and for designing ecosystem restoration measures; performing a sedimentation study exploring off-channel storage as an alternative to land acquisition; and, if possible, conducting an in-progress review, a prerequisite for the alternatives formulation briefing.

Funds requested for Fiscal Year 2008 will be used to continue the feasibility study. Specific goals include beginning the environmental assessment; preparing a geotechnical studies report, social/institutional analysis, financial analysis, and real estate analysis; conducting the alternatives formulation briefing; identifying plans, including the local sponsor's preferred plan; and continuing public involvement.

The estimated cost of the feasibility phase is \$3,120,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Feasibility Study Cost	\$3,120,000
Reconnaissance Phase (Federal)	N/A <sup>1</sup>
Feasibility Phase (Federal)	1,560,000
Feasibility Phase (Non-Federal)	1,560,000

The reconnaissance phase was completed in January 2003. The completion date for the feasibility study is being determined.

\* Assumed allocation. Final, actual allocations yet to be determined.

<sup>1</sup> Reconnaissance phase funded under overall study authority for Red River of the North.

ENVIRONMENT  
INVESTIGATIONS  
NORTH ATLANTIC DIVISION

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
SURVEYS – (Environmental)							
MASSACHUSETTS							
Coastal Massachusetts Ecosystem Restoration Massachusetts and Cape Cod Bays, MA New England District	562,000	228,000	90,000	40,000	70,000 *	100,000	34,000

The study area encompasses the Massachusetts and Cape Cod Bays (MCCB) coastal shoreline and associated waters within the Commonwealth of Massachusetts, including the EPA designated national estuary of MCCB. The biologically diverse ecosystem created by the many natural salt marshes along the Massachusetts coast has historically provided exceptionally productive fish and wildlife habitat. Salt marshes provide significant economic and environmental benefits for the region by providing flood storage, filtering pollutants, and supporting commercial fisheries as well as recreational fishing and tourism. Over the past century, many of these natural salt marshes have been lost or degraded by the construction of transportation facilities and other coastal development. There are 25 navigation and 11 beach erosion control projects in this region of Massachusetts. Several of these projects involved the disposal of dredged material in coastal wetlands or salt marshes such as the Green Harbor project. Dredged material was disposed of in Town Marsh filling approximately 35 acres of productive salt marsh above mean high tide, resulting in a relatively unproductive upland habitat. Studies will evaluate this and other sites to determine measures to restore the ecological productivity of the MCCB coastline. This study is consistent with the objectives of Coastal America to restore all degraded salt marshes in the Commonwealth and is supported by the Executive Office of Environmental Affairs, Department of Transportation and numerous Federal agencies, as evidenced by their signing a Memorandum of Understanding to restore Massachusetts wetlands. A feasibility cost-sharing agreement was executed with the Mystic Valley Development Commission on 15 October 2002 to study environmental restoration measures along the Malden River in the communities of Malden, Medford and Everett, Massachusetts.

The reconnaissance report, certified in August 2001, recommended feasibility phase studies to identify potential solutions to restore lost or degraded salt marshes by restoring the natural tidal exchange and ecological productivity of these areas. A second feasibility cost-sharing agreement was executed on 1 April 2005 with the Massachusetts Department of Coastal Zone Management for study of environmental restoration measures at Pilgrim Lake in Truro and Provincetown, Massachusetts. Tidal flow into Pilgrim Lake was blocked by the construction of the railroad and Route 6 Highway. Tidal exchange is now limited to a single 4-foot diameter culvert. Feasibility studies will evaluate alternatives to restore the natural tidal exchange and ecological productivity of the 490-acre lake and surrounding salt marsh.

Fiscal Year 2006 funds were used to continue the Malden River Interim Feasibility Study and to initiate the Pilgrim Lake Interim Feasibility Study.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
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SURVEYS – (Environmental)

MASSACHUSETTS

Coastal Massachusetts Ecosystem Restoration  
Massachusetts and Cape Cod Bays, MA  
New England District

Fiscal Year 2007 funds are being used to complete the Malden River Interim Feasibility Study in June 2007 and to continue the Pilgrim Lake Interim Feasibility Study, including development of various restoration plans and environmental analysis.

Fiscal Year 2008 funds will be used to continue the feasibility study of Pilgrim Lake, including cost estimating and preparation of the draft Interim Feasibility Report and Environmental Assessment. The estimated cost of the feasibility phase is \$840,000, which is to be shared on a 50-50 percent basis by the Federal and non-Federal interests. A summary of the study cost sharing is as follows:

Total Estimated Study Cost	\$982,000
Reconnaissance Phase (Federal)	142,000
Feasibility Phase (Federal)	420,000
Feasibility Phase (Non-Federal)	420,000

The reconnaissance phase was completed in October 2002. The schedule for completion of the feasibility study is to be determined.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
SURVEYS – (Environmental)							
VIRGINIA							
Dismal Swamp and Dismal Swamp Canal, VA Norfolk District	584,000	143,000	100,000	150,000	62,000 *	62,000	67,000

The Dismal Swamp and Dismal Swamp Canal are located in Chesapeake, Virginia. The swamp is maintained by fixed weirs across drainage ditches to restrict the flow of water out of the swamp and inward to Lake Drummond, which is in the middle of the swamp. Lake Drummond also feeds water through a feeder ditch to maintain the water level in the Dismal Swamp Canal. The canal is maintained as part of the Atlantic Intracoastal Waterway. During heavy storm events Lake Drummond inundated areas in the City of Chesapeake, Virginia, and the surrounding area. The remnants of Hurricanes Dennis and Floyd in September 1999 caused significant damages from flooding in the city and the surrounding area.

The Section 905 (b) analysis was certified on November 14, 2003, which found there was a Federal interest to pursue feasibility level studies for preventing or minimized the flooding by diverting the floodwaters from Lake Drummond through the navigation locks at Deep Creek, Virginia and at South Mills, North Carolina. The locks are located at each end of the Dismal Swamp Canal. In addition, the reconnaissance phase determined that flood damage reduction measures in the City of Chesapeake are warranted, as well as opportunities for ecosystem restoration. The City of Chesapeake, Virginia, is the potential study sponsor for the feasibility phase of the study, and they fully understand the cost-sharing requirements for the feasibility phase. The feasibility cost-sharing agreement was signed in September 2004.

Fiscal Year 2006 funds were used to continue the study for the Phase I investigations and execution of the cost sharing agreement for the Phase II investigations in September 2006.

Fiscal Year 2007 funds are being used to continue the Phase II investigations, including development of a detailed scope of study, data collection and evaluation, and computer modeling. Fiscal Year 2007 funds will also be used to execute the cost sharing agreement for the Phase III investigations and to complete the Phase I investigations in September 2007.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
SURVEYS – (Environmental)							
VIRGINIA							
Dismal Swamp and Dismal Swamp Canal, VA Norfolk District	584,000	143,000	100,000	150,000	62,000 *	62,000	67,000

Fiscal Year 2008 funds will be used to continue the Phase II and Phase III investigations, including additional modeling and data collection, and analysis of restoration alternatives. The estimated cost of the feasibility phase is \$968,000, which is to be cost-shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of the study cost sharing is as follows:

Total Estimated Study Cost	\$1,068,000
Reconnaissance Phase (Federal)	100,000
Feasibility Phase (Federal)	484,000
Feasibility Phase (Non-Federal)	484,000

The reconnaissance phase was completed in September 2004. The schedule for completion of the feasibility study is to be determined.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
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PRECONSTRUCTION ENGINEERING AND DESIGN ACTIVITIES (PED) – (Environmental)

VIRGINIA

Elizabeth River Basin, Environmental Restoration, Hampton Roads, VA Norfolk District	750,000	165,000	144,000	248,000	96,000 *	97,000	0
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The project area includes Scuffletown Creek, a tributary to the Southern Branch of the Elizabeth River Basin, located within the cities of Chesapeake, Norfolk, Portsmouth, and Virginia Beach. Bottom sediments within the creek have been contaminated by three hundred years of industrial and commercial development making Scuffletown Creek one of the Nation's most contaminated waterways with limited wetlands to support wildlife and filter pollution. The feasibility study, completed in July 2001, recommended an environmental restoration project to remove or clean-up 60,000 cubic yards of sediment in Scuffletown Creek. The feasibility study also recommended eight ecosystem restoration projects to restore 22 acres of marine tidal wetlands located throughout the Elizabeth River Basin to be accomplished under the Continuing Authorities Section 206 program. The estimated project cost for the Scuffletown Creek is \$8,300,000, with an estimated federal cost of \$5,000,000 and an estimated non-Federal cost of \$3,300,000. No benefit-cost ratio has been computed for this project because it is an ecosystem restoration project and benefits are not quantifiable in monetary terms. The Commonwealth of Virginia, and the Cities of Chesapeake, Norfolk, Portsmouth, and Virginia Beach, Virginia, fully understand the cost-sharing requirements for the design agreement. The design agreement was executed in November 2004. Preconstruction engineering and design will ultimately be cost-shared at the rate for the project to be constructed but is financed through the preconstruction engineering and design effort at 25 percent non-Federal. Any adjustment that may be necessary to bring the non-Federal construction in line with the project cost sharing will be accomplished in the first year of construction. This project will be implemented under the authority of Section 312(b) of WRDA 1990, as amended.

This project is authorized for construction by Section 312(b) of the Water Resources Development Act of 1990, as amended. In accordance with the cost sharing and financing concepts enacted by the Water Resources Development Act of 1986 and 1996, local interests are required to provide all lands, easements, rights-of-ways, relocations, and disposal areas, and pay 35 percent of all costs allocated to environmental protection and restoration.

Total Estimated Preconstruction Engineering and Design Effort Cost	\$1,000,000	Total Estimated Preconstruction Engineering and Design Effort Cost	\$1,000,000
Initial Federal Share	750,000	Ultimate Federal Share	650,000
Initial Non-Federal Cost	250,000	Ultimate Non-Federal Share	350,000

Fiscal Year 2007 funds will be used to continue preconstruction engineering and design, including final design plans and preparation of plans and specifications.

Fiscal Year 2008 funds will be used to complete preconstruction engineering and design, including plans and specifications in May 2008.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
SURVEYS – (Environmental)							
NEW YORK							
Hudson-Raritan Estuary, NY and NJ New York District	9,740,000	3,925,000	377,000	792,000	200,000 *	200,000	4,246,000

The study area includes the Port of New York and New Jersey and includes the Ambrose and Anchorage Channel; New York and New Jersey Channels; Newark Bay Channel; Port Jersey Channel; Claremont Channel; Bay Ridge and Red Hook Channel; and Buttermilk Channel, the Upper and Lower New York Bays, the Raritan Bay and Jamaica Bay. The Port of New York-New Jersey is the largest port on the East coast with channels ranging depths of 35 to 45 feet. These waters and the surrounding shoreline, mudflats, intertidal marshes, and adjacent upland areas provide valuable habitat for fish, plant and wildlife resources, and accommodate migrating birds along the Atlantic flyway. The area is also utilized by a number of Federally threatened/endangered species including the shortnosed sturgeon, five species of sea turtles, peregrine falcons, piping plovers and rosette terns.

The reconnaissance report for the Hudson-Raritan Estuary, approved in July 2000, found there is a Federal interest for further studies. The feasibility study is assessing the viability of restoring balance to overall ecological functions and values within the Hudson-Raritan Estuary through the development of a Comprehensive Restoration Implementation Plan (CRIP). As an interim measure the study will be assessing thirteen specific sites within the estuary for potential for ecosystem restoration measures, including contaminant reduction measures, creation of wetlands, water quality improvements, and alteration of hydrology/hydraulics to improve water movement and quality. The feasibility cost-sharing agreement was executed in July 2001 with the Port Authority of New York and New Jersey.

Fiscal Year 2006 funds were used to continue the feasibility phase, including data collection, preliminary plan formulation for a comprehensive estuary restoration improvement plan and coordination with local interests.

Fiscal Year 2007 funds are being used to continue the feasibility study, including data collection, economic, hydraulic, and environmental analyses to formulate alternatives for a comprehensive restoration improvement plan and site-specific restoration opportunities.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.



APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
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SURVEYS – (Environmental)

NEW YORK

Hudson-Raritan Estuary, NY and NJ  
New York District

Fiscal Year 2008 funds will be used to continue the feasibility phase, including data collection and coordination with local interests. The estimated cost of the feasibility phase is \$19,000,000, which is to be cost shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of the study cost sharing is as follows:

Total Estimated Study Cost	\$19,240,000
Reconnaissance Phase (Federal)	240,000
Feasibility Phase (Federal)	9,500,000
Feasibility Phase (Non-Federal)	9,500,000

The reconnaissance phase was completed in July 2001. The schedule for completion of the feasibility study is to be determined.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
SURVEYS – (Environmental)							
NEW JERSEY							
Hudson-Raritan Estuary, Hackensack Meadowlands, NJ New York District	2,600,000	623,000	278,000	545,000	200,000 *	200,000	754,000

The study area encompasses approximately 8,450 acres of tidal wetlands in the Hackensack River Basin located in Bergen Essex and Hudson Counties, New Jersey. The Hackensack Meadowlands the largest remaining brackish tidal wetland complex in the Greater New York area. The area, about five miles west of Manhattan Island, is urban to suburban and has been heavily industrialized since the mid-nineteenth century. Since the 1890's, deforesting of the cedar stands, channel modifications, levee construction, and damming of the Hackensack River and its tributaries for irrigation and water supply purposes, has changed the estuary. Furthermore, the industrial activities, effluents discharges from local sources and highway stormwater systems, and leachates from former garbage dumps within the estuary, have contaminated portions of the meadowlands and further degraded the wetlands producing an unfavorable environment for fish and wildlife, including wading birds, shorebirds, raptors, anadromous fish, estuarine fish, and terrapins.

The reconnaissance report for the Hudson-Raritan Estuary, approved in July 2000, found there is a Federal interest for further studies for the Hackensack Meadowlands. The interim feasibility study for the Hackensack Meadowlands is assessing items that have a Federal interest for ecosystem restoration, including contaminant reduction measures, enhancement of wetlands, water quality improvements, and alteration of hydrology/hydraulics to improve water movement and quality with in the Hackensack Meadowlands. The non-Federal sponsor is the New Jersey Meadowlands Commission, who executed a cost-sharing agreement in April 2003.

Fiscal Year 2006 funds were used to continue the feasibility phase, including coordination with the USFWS, environmental data analysis for sites under consideration for restorations, and coordination with local interests.

Fiscal Year 2007 funds are being used to continue the feasibility study, including geotechnical and biological baseline data collection, design development, and plan formulation for the Tier 1 sites and conceptual plans for the remaining sites.

5 February 2007

\* Assumed allocation. Final allocations yet to b determined.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
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SURVEYS – (Environmental)

NEW JERSEY

Hudson-Raritan Estuary, Hackensack Meadowlands,  
NJ  
New York District

Fiscal Year 2008 funds will be used to continue the feasibility phase, including data collection and coordination with local interests. The estimated cost of the feasibility phase is \$5,200,000, which is to be cost shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of the study cost sharing is as follows:

Total Estimated Study Cost	\$5,200,000
Reconnaissance Phase (Federal)	0
Feasibility Phase (Federal)	2,600,000
Feasibility Phase (Non-Federal)	2,600,000

The reconnaissance phase was completed in April 2003. The schedule for completion of the feasibility study is to be determined.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
SURVEYS – (Environmental)							
NEW JERSEY							
Hudson-Raritan Estuary, Lower Passaic River, NJ New York District	4,500,000	636,000	248,000	545,000	200,000 *	200,000	2,671,000

The study area is located in Essex County, New Jersey, about five miles west of Battery of New York City and encompasses the Lower Passaic River Basin from the river's confluence with Newark Bay to Dundee Dam. The area is urban to suburban and has been heavily industrialized since the mid-nineteenth century. This industrial activity has resulted in the degradation of the wetlands: discharges of effluents into the river, and dumping of refuse resulting in contaminated sediments in the river that is unfavorable for fish and wildlife habitat.

The reconnaissance report for the Hudson-Raritan Estuary, approved in July 2000, found there is a Federal interest for further studies in the Lower Passaic River Basin. The feasibility study for the Lower Passaic River Basin will assess items that have a Federal interest for ecosystem restoration, including contaminant reduction measures, creation of wetlands, water quality improvements, and alteration of hydrology/hydraulics to improve water movement and quality with in the Lower Passaic River and sections of Newark Bay. The non-Federal sponsor is the New Jersey Department of Transportation, Office of Maritime Resources, who executed cost-sharing agreement in June 2003.

Fiscal Year 2006 funds were used to continue the feasibility phase, including economic, hydraulic and environmental analyses necessary to establish baseline conditions, and formulate plan alternates.

Fiscal Year 2007 funds are being used to continue the feasibility phase, including geotechnical and biological baseline data collection, design development, and plant formulation for the Tier 1 sites and conceptual plans for the remaining sites.

Fiscal Year 2008 funds will be used to continue the feasibility phase, including data collection and coordination with local interests. The estimated cost of the feasibility phase is \$9,000,000, which is to be cost shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of the study cost sharing is as follows:

Total Estimated Study Cost	\$9,000,000
Reconnaissance Phase (Federal)	0
Feasibility Phase (Federal)	4,500,000
Feasibility Phase (Non-Federal)	4,500,000

The reconnaissance phase was completed in June 2003. The schedule for completion of the feasibility study is to be determined.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
<b>SURVEYS – (Environmental) VIRGINIA</b>							
Lynnhaven River Basin, VA Norfolk District	1,640,000	104,000	383,000	300,000	349,000 *	300,000	204,000

Lynnhaven River Basin is located in Virginia Beach, Virginia, on the south shore of the Chesapeake Bay. The river drains approximately 50 square miles of watershed in southeastern Virginia and flows northerly emptying into the Chesapeake Bay. A Federal navigation project is maintained within the upper reaches of the river. The project depth varies from 10 feet deep at the river's entrance to Chesapeake Bay, to a 6 feet deep channel at the narrows between Broad Bay and Linkhorn Bay. In addition, the river basin was once a highly productive ecosystem, producing the world famous Lynnhaven oyster. However, residential and commercial development, and the loss of wetlands and forested buffers have increased sedimentation, which degraded the ecosystem and water quality, causing the oyster population to decline to essentially no marketable production today. Only 900 acres of wetlands exist today, half of the acreage present 30 years ago.

The Section 905 (b) analysis, certified in January 2004, found there was a Federal interest for further feasibility phase studies for six areas of concern within the Lynnhaven River Basin. The feasibility study will evaluate ecosystem restoration measures to improve water quality, restore wetlands, submerged aquatic vegetation, and fish and wildlife habitats, and improve the river bottom material by dredging or other methods. The sponsor for the feasibility phase of the study is the City of Virginia Beach, Virginia, who understands the cost-sharing requirements to the feasibility phase of the study. The feasibility cost-sharing agreement was executed in September 2004.

Fiscal Year 2006 funds were used to continue the feasibility phase of the study.

Fiscal Year 2007 funds are being used to continue the feasibility phase of the study including data gathering, public involvement, preliminary plan formulation and the continued development of the hydrodynamic and water quality model of the basin.

Fiscal Year 2008 funds will be used to continue the feasibility phase of the study, including completion of the river basin modeling efforts, public involvement, economic and environmental analyses, plan formulation, and local coordination. The estimated cost of feasibility phase is \$3,080,000, which is to be cost-shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of the study cost sharing is as follows:

Total Estimated Study Cost	\$3,180,000
Reconnaissance Phase (Federal)	100,000
Feasibility Phase (Federal)	1,540,000
Feasibility Phase (Non-Federal)	1,540,000

The reconnaissance phase was completed in September 2004. The feasibility study scheduled is being determined.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
SURVEYS – (Environmental)							
MASSACHUSETTS							
Merrimack River Watershed Study, MA and NH New England District	3,750,000	903,000	198,000	198,000	200,000 *	200,000	2,051,000

The Merrimack River originates in Franklin, New Hampshire at the confluence of the Pemigewasset and Winnepesaukee Rivers and flows southerly towards the Massachusetts border then easterly towards the coast. The Merrimack River basin encompasses approximately 5,010 square miles and is the fourth largest watershed in New England. The main stem of the river is about 116 miles in length with about 74 miles in New Hampshire and 42 miles in Massachusetts. The headwaters are located in the White Mountain National Forest. The estuary includes 2,500 acres of coastal wetlands and is bordered by the Plum Island National Wildlife Refuge. Existing uses include aquatic habitat for fish and wildlife, water supply, recreation, hydropower production and commercial shell fishing. The Merrimack River supports anadromous fisheries and endangered species. Although significant improvements have been made to the overall quality of the Merrimack River, many problems exist including lack of fish passage, loss of habitat, degraded wetlands and poor water quality. The Corps study will help define the overall condition of the watershed and allow for science-based decisions on prioritized investments to improve water quality and ecosystem restoration. The Section 905(b) analysis was certified on 25 January 2002, which found there was a Federal interest to pursue comprehensive studies in the Merrimack River Watershed. A cost-sharing agreement was executed with the City of Lowell, representing the Merrimack Community Coalition, on 20 February 2002 for Phase I of the study.

Fiscal Year 2006 funds were used to continue the study, including completion of Phase I investigations in August 2006. Fiscal Year 2006 funds were also used to execute a cost-sharing agreement with the New Hampshire Department of Environmental Services on 25 August 2006 to begin Phase II investigations. Phase II of the study will involve multiple agreements, which may be executed with different communities or state agencies. Initial Phase II work includes development of a detailed scope of study, data collection and evaluation, river studies and computer modeling.

Fiscal Year 2007 are being used to continue the Phase II investigations, including water quality sampling, data collection, development of a quality assurance project plan and additional computer modeling between Manchester and Lincoln, New Hampshire. Stream flow analysis will be added to the model to analyze competing water uses during low flow conditions.

Fiscal Year 2008 funds will be used to continue the Phase II investigations, including additional watershed modeling, data collection and analysis of restoration alternatives.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
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SURVEYS – (Environmental)

MASSACHUSETTS

Merrimack River Watershed Study, MA and NH  
New England District

The estimated cost of the feasibility study is \$7,200,000, which is to be cost shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$7,350,000
Reconnaissance Phase (Federal)	150,000
Feasibility Phase (Federal)	3,600,000
Feasibility Phase (Non-Federal)	3,600,000

The reconnaissance phase was completed in February 2002. The schedule for completion of the feasibility study is to be determined.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: North Atlantic

Study	Total Estimated Federal Cost \$	Allocation Thru FY 2004 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
PRECONSTRUCTION ENGINEERING AND DESIGN ACTIVITIES (PED) – (Environmental)							
NEW YORK							
Upper Susquehanna River Basin, Cooperstown, NY Baltimore District	102,000	0	0	0	0 *	102,000	0

The Upper Susquehanna River Basin – Cooperstown watershed has a drainage area of 160 square miles, including 315 miles of stream, and is located entirely within Otsego County, New York. The watershed has experienced environmental degradation from past and present land use practices, flooding, stream bank erosion and sedimentation, loss of wetland habitats, water quality degradation, and landscape fragmentation.

A draft feasibility study and integrated environmental assessment was completed in December 2004. The final report is expected to be completed in April 2007. The recommended plan calls for the restoration of four wetland sites, totaling 26 acres. The restored wetlands are expected to provide water quality improvements and wildlife habitat for the Cooperstown watershed. More importantly, the benefits of this restoration effort will contribute to the ongoing restoration efforts by other Federal, regional, state, and local agencies and interests in this and other sub-watersheds of the Upper Susquehanna River Basin in the state of New York. The estimated construction cost is \$1,460,000, with an estimated Federal cost of \$1,095,000 and an estimated non-Federal cost of \$365,000. The New York State Department of Environmental Conservation fully understands the preconstruction engineering and design cost-sharing requirements and is expected to be the non-Federal sponsor for this effort. The design agreement is scheduled for execution in March 2008. Preconstruction engineering and design will ultimately be cost-shared at the rate for the project to be constructed but will be financed through the preconstruction engineering and design period at 25 percent non-Federal. Any adjustments that may be necessary to bring the non-Federal construction in line with the project cost-sharing will be accomplished in the first year of construction.

Total Estimated Preconstruction Engineering and Design Effort Cost	\$136,000	Total Estimated Preconstruction Engineering and Design Effort Cost	\$136,000
Initial Federal Share	102,000	Ultimate Federal Share	102,000
Initial Non-Federal Cost	34,000	Ultimate Non-Federal Share	34,000

Consistent with the cost-sharing and financing concepts enacted by the Section 567, Water Resources Development Act of 1996, as amended, local interests are required to pay 25 percent of all costs allocated to environmental restoration.

Fiscal Year 2008 funds will be used to execute the design agreement and initiate and complete the engineering and design phase of the project. The design phase is scheduled to be completed in September 2008.

5 February 2007

\* Assumed allocation. Final allocations yet to be determined.



ENVIRONMENT  
INVESTIGATIONS  
NORTHWESTERN DIVISION

APPROPRIATION TITLE: Investigations, Flood Damage Reduction, Fiscal Year 2008

Division: Northwestern

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional After FY 2008 \$
Lower Columbia River Ecosystem Restoration, OR & WA Portland District	3,191,000	332,000	138,000	148,000	100,000*	100,000	2,373,000

The Lower Columbia River extends from the mouth of the Columbia River to river mile (RM) 145 at Bonneville Lock and Dam; its estuary is classified nationally significant under the National Estuary Program (NEP). The river divides the states of Oregon and Washington throughout this area. The study area includes a 40-foot deep-draft federal navigation channel from the mouth to the Portland metropolitan area about RM 105 and a shallow draft channel upstream from that point. The Corps of Engineers' 125-year involvement with the Columbia system includes flood damage reduction, navigation, fish and wildlife, environmental restoration, hydropower, bank protection, recreation and water supply improvements.

Over time, this basin has experienced considerable changes in water resource needs and uses. In addition, significant environmental degradation has occurred within the lower Columbia system. Modification of the system by human activities has led to a marked change in the hydrologic regime, and caused pollution and substantial losses of instream, riparian and wetland habitats, and a concomitant reduction in fish and wildlife resources. Flood control, water quality, navigation, water-related infrastructure, and ecosystem restoration needs have all been evaluated on a case-by-case basis. Twelve different populations of anadromous salmonids that reproduce in the Columbia River Basin have been listed as threatened or endangered and they all use the estuary to some extent. Such listings have broad implications to existing water resource uses, and future developments. The updated proposed action for the Columbia River Federal Power System includes actions calling for planning and restoration efforts in the Columbia River estuary to help avoid jeopardy for these listed species. Historic losses of 52,000 acres of wetland/marsh habitats, 13,800 acres of riparian forest habitat and 27,000 acres of forested wetland habitat downstream of Portland have significantly impacted this ecosystem's ability to produce and sustain fish and wildlife resources. Much of this wetland loss can be attributed to the 84,000 acres encompassed by diking districts and the 20,000-acre increase in urban development that has occurred along the lower Columbia River.

The purpose of this ongoing study is to investigate and recommend appropriate solutions to accomplish a comprehensive ecosystem approach for addressing restoration and water resource opportunities in the Lower Columbia River Watershed and is not limited to the tidally influenced areas but is ecosystem-wide in scope. A comprehensive, long-range approach to address water resource problems and opportunities for the Lower Columbia River is needed. Some of the key areas to be addressed in this comprehensive study include wetland/riparian habitat restoration and stream and fisheries habitat improvement. It is imperative that reversals of these impactful trends occur now before further growth causes irreparable impairment of current water uses and ecosystem functions, and while regional interest and financial support is high. This comprehensive watershed study would serve as the catalyst to bring together and implement

current efforts by a number of governmental and private organizations including the NEP, six state agencies from Oregon and Washington, four Federal agencies, recreation, ports, industry, agriculture, labor, commercial fishing, environmental interests and citizens. The states of Washington and Oregon have jointly sponsored the study. The project has the potential to add up to 10,000 acres of Estuarine / Riverine emergent and forested wetland, consistent with the Lower

\* Assumed allocation. Final actual allocation yet to be determined.

Columbia River Estuary Partnerships Comprehensive Conservation Management Plan and Washington State recovery plans.

The reconnaissance study was completed in Aug 2001. The Portland District has completed a Project Management Plan (PMP) and is working closely with the states of OR and WA and other stakeholders. The states of Oregon and Washington are jointly sponsoring the study and understand the cost sharing provisions associated with the feasibility phase of the study. The FCSA was executed 16 December 2003. Sponsors have provided \$539,336 in work-in-kind to date.

The Fiscal Year 2007 funds will be used to continue the feasibility phase. Specific actions include development of programmatic project methodologies, benefit types and initial project screening criteria. Funds will also be use to coordinate with the sponsors on specific site selection and project development.

The Fiscal Year 2008 funds will be used to continue the feasibility phase. Specific actions include the screening and refining the potential actions and alternatives for the identified sites.

The estimated cost of the feasibility phase is \$6,000,000, which will be shared on a 50-50 percent basis by the Corps and the non-Federal sponsor. All or part of the non-Federal share may be in-kind services. Date for completion of feasibility phase is to be determined. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$6,191,000
Reconnaissance Phase (Federal)	191,000
Feasibility Phase (Federal)	3,000,000
Feasibility Phase (Non-Federal)	3,000,000

The schedule for completion of the feasibility study is to be determined.

APPROPRIATION TITLE: Investigations, Flood Damage Reduction, Fiscal Year 2008

Division: Northwestern

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional After FY 2008 \$
Puget Sound Nearshore Marine Habitat Restoration, WA Seattle District	6,123,000	1,659,000	510,000	748,000	400,000*	400,000	2,406,000

The Puget Sound Nearshore study area is located along the marine shorelines and waters of Puget Sound, WA. Over the years a significant amount of estuary wetlands, marsh, river delta, and marine shoreline habitat in Puget Sound has been destroyed or degraded through development, including a 70% loss of estuarine wetlands and 60% beach degradation. The degradation has contributed to a severe reduction in the number of fish and wildlife being produced or residing in the nearshore area. Numerous ESA listed species use the nearshore for forage, nesting, and/or migration. These include southern resident Orca whale, marble murrelet, stellar sea lion, bald eagle, Puget Sound bull trout, Puget Sound chinook, Hood Canal chinook, summer chum, and humpback whale. The study is identifying ways to restore nearshore habitat for fish and wildlife within the Puget Sound Basin, including all the major sub-basins - Hood Canal, South, Central and North Puget Sound, and the Straits of Georgia and Juan De Fuca. Twenty management measures, such as dike and seawall removal, beach restoration, and tidal marsh nutrient recycling, have been identified that address the fundamental causes of declining Puget Sound ecological health. This study is strongly supported by multiple local, state, and Federal agencies, and is part of an ongoing multi-agency effort to restore and improve habitat throughout Puget Sound. In FY06 the Governor of the State of Washington reaffirmed this project as a priority restoration initiative for the state, including naming 11 Nearshore team members to her Puget Sound partnership and science committee.

Fiscal Year 2007 funds will be used to continue a strategic needs assessment and the future without project analysis. The strategic assessment will identify potential large-scale restoration project locations and integrate smaller community based restoration.

Fiscal Year 2008 funds will be used to draft the future without project report and complete a major milestone, the Feasibility Scoping Meeting.

A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$12,123,000
Reconnaissance Phase (Federal)	123,000
Feasibility Phase (Federal)	6,000,000
Feasibility Phase (Non-Federal)	6,000,000

The reconnaissance phase was completed in July 1997. The study is currently in the feasibility phase and the completion date is to be determined.

\* Assumed allocation. Final, actual allocations yet to be determined

APPROPRIATION TITLE: Investigations, Environment, Fiscal Year 2008

Division: Northwestern

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional After FY 2008 \$
Yellowstone River Corridor, Montana Omaha District	4,759,000	524,000	215,000	396,000	200,000*	200,000	3,224,000

A comprehensive study of the Yellowstone River corridor from Gardiner, Montana, to the confluence of the Missouri River to determine the hydrologic, biological and socioeconomic cumulative impacts as authorized by Section 431 of Water Resources Development Act of 1999. The Yellowstone River corridor, defined linearly as approximately 600 river miles in Montana and North Dakota and laterally from the channel as the upper riverine terrace formed from historic fluvial processes, has been subject to natural and human interactive factors affecting sustainable use and conservation of resources. Flooding in 1996 and 1997 caused damage to private landowners and public facilities with a subsequent increase in requests for regulatory approvals under Section 10 of the Rivers and Harbors Act/Section 404 of the Clean Water Act as well as for Corps of Engineers emergency technical assistance. Given the national significance, the natural splendor, and historic heritage of this river corridor, issues regarding the long-term effects of bank stabilization and the potential for significant adverse cumulative impacts have been raised by public and private sector and environmental interests. American Rivers has placed the Yellowstone River on its list of the 10 most threatened rivers twice in the past five years. In contrast to concern for cumulative ecological impacts, issues regarding an individuals' right to protect personal property and more local control of floodplain/riverine activities have been evident from the landowner and local government interest groups. This study will develop an understanding of the river corridor environment in the context of cumulative effects of change and ecosystem response through the use of sound science. The multi-agency team will utilize the results of the cumulative effects analysis to formulate a set of publicly supported river corridor management recommendations that address effects of channel modifications, development, and land use changes on the aquatic and riparian ecosystem and the human community along the Yellowstone River corridor. The corridor study will be used to 1) inventory and forecast conditions along the corridor in a cumulative effects environment; 2) formulate management and protection objectives; 3) evaluate trade-offs among objectives; 4) assess environmental impacts as a factor in determining the acceptability of management objectives as contrasted with potential long-term aquatic and riparian deterioration. The Yellowstone Corridor Study has strong potential to lead into future ecosystem restoration projects and sustainable flood damage reduction projects that could be pursued under existing Corps authorities.

The Feasibility Cost Sharing Agreement (FCSA) was signed in January 2004. The cost share is the Custer County Conservation District, the fiscal agent for the Yellowstone River Conservation District Council (YRCDR). The sponsor has provided \$1,200,000 worth of in-kind services through Fiscal Year 2006.

Fiscal Year 2007 funds are being used to continue the feasibility study. These funds will be used to complete a comprehensive study of riparian wildlife health and diversity along the entire corridor and a cultural values inventory of public views towards the Yellowstone River, and to continue hydrologic and hydraulic modeling. The riparian wildlife study is being conducted under contract with Montana State University using abundance and richness of migratory song birds as an indicator species of overall riparian wildlife health. The cultural values inventory is being conducted under contract with Montana State University – Billings to capture the overriding themes of how people from various user groups relate to the Yellowstone River. This study is essential to laying the groundwork for what types of activities and best management practices may be acceptable for future management and

\* Assumed allocation. Final, actual allocations yet to be determined.

ecosystem restoration and conservation along the river. The continuance of hydrologic modeling will complete the analysis of the entire Yellowstone River Basin upstream from the Bighorn River confluence. The continued hydraulic modeling effort will result in development of floodplain mapping for Yellowstone and Stillwater Counties. Completion of hydraulic modeling in Yellowstone County dovetails with FEMA Flood Insurance Study revisions currently underway for Yellowstone County, and provides an opportunity to leverage the resources of that agency towards completion of products that meet the needs of both efforts.

The funds requested for Fiscal Year 2008 will be used to continue the feasibility phase of the study. The requested funds would be used to initiate a comprehensive study on the overall health and diversity of the Yellowstone River fishery. This study would be contracted to Montana State University and would investigate how the native fishery of the river has responded to cumulative effects of change. In addition, funds would be utilized to initiate a comprehensive study of wetlands, their significance in the Yellowstone River ecosystem, their distribution and abundance, and their changes over time in response to cumulative effects.

The preliminary estimated cost of the feasibility phase is \$5,800,000, which is to be shared on a 75-25 percent basis by Federal and non-Federal interests. All of part of the non-Federal share may be in-kind services. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$ 6,209,000
Reconnaissance Phase (Federal)	409,000
Feasibility Phase (Federal)	4,350,000
Feasibility Phase (Non-Federal)	1,450,000

In accordance with Section 431 of P.L. 106-53, this study is to be performed in consultation with the United States Fish and Wildlife Service (USFWS), United States Geological Survey (USGS), Natural Resources Conservation Services (NRCS) and with full participation of the State of Montana, and the tribal and local entities, and provide for public participation. Funding for the consultation efforts of the USFWS and NRCS during the study should be obtained by each respective agency.

The reconnaissance phase was completed in January 2004. The feasibility study schedule for completion is to be determined.

ENVIRONMENT  
INVESTIGATIONS  
PACIFIC OCEAN DIVISION

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Division: Pacific Ocean Division

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Ala Wai Canal, Oahu, HI Honolulu District	2,685,000	792,000	115,000	119,000	495,000 *	300,000	864,000

\* Assumed allocation. Final actual allocations are yet to be determined.

The Ala Wai Canal, located in the Waikiki area on the Island of Oahu, is a two-mile long man-made waterway constructed during the 1920's that has served as a collection and transmission point for discharged silt, pollutants and floodwaters from the Makiki, Manoa and Palolo drainage basins and surrounding areas of Waikiki. This drainage area encompasses a total land area of approximately 16.3 square miles and is considered to be the most densely populated area in the state. The two-mile long canal is approximately half a mile inland from Hawaii's major landmark and primary tourist destination Waikiki Beach. The 150-to 250-foot-wide canal was originally dredged to a depth of 25 feet. In recent years the accumulation of debris, especially at the confluence of the major stream tributaries of the Makiki and Manoa-Palolo Streams and the Ala Wai Canal, has resulted in depths of only one to two feet. With increased urbanization of the drainage basin, the potential flood risk to the Waikiki area has become a major concern to the local sponsor. During the passage of Hurricane Iniki in 1992, the Ala Wai Canal overtopped its bank near the McCully Bridge and caused some flooding of streets in the Waikiki area. Flood mitigation measures, including both non-structural and structural alternatives, will be addressed and investigated for potential implementation.

The Ala Wai Canal also serves as an important link between the freshwater ecosystems of the upper drainage basins and the marine environment along the coast. Endemic amphidromous species such as native gobies and shrimp that had once utilized the Ala Wai Canal as a migratory pathway from the mountains to the sea are nearly non-existent. The accumulation of silt and pollutants over the years has resulted in a steady decline in water quality and has affected water flow and circulation. In a cooperative effort with Federal, State and local agencies, an effective comprehensive management and restoration plan will need to be implemented to restore aquatic habitat and biological diversity once present in the canal and upstream tributaries.

The community in this highly developed urban center is very active and interested in improving the overall health of the watershed. This is evidenced by numerous community restoration activities. The community, through the local sponsor, has requested an expansion of the project to address environmental degradation and flood control throughout the entire Ala Wai watershed. The Manoa Stream flood on October 30, 2004 caused over \$100M in damages to properties and irreplaceable documents in the University of Hawaii's library, thus causing the community and agencies to seek the expansion of the project for flood mitigation in the upper stream areas and demonstrates the need for addressing watershed problems more comprehensively.

The feasibility cost sharing agreement (FCSA) was executed in April 2001 with the State Department of Land and Natural Resources and amended in December 2006 due to the increase in cost and scope of the study.

Fiscal Year 2007 funds are being used to conduct hydrologic and hydraulic studies in the upper watershed.

Fiscal Year 2008 funds will be used to complete the hydraulic study and develop alternative ecosystem restoration and flood mitigation measures.

The total estimated cost of the feasibility phase is \$5.1M, which is to be cost shared at 50 percent by Federal and non-Federal sponsors.



APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Division: Pacific Ocean Division

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
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Ala Wai Canal, Oahu, HI  
Honolulu District

A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$5,245,000
Reconnaissance Phase (Federal)	125,000
Feasibility Phase (Federal)	2,560,000
Feasibility Phase (Non-Federal)	2,560,000

The completion date of the feasibility study is yet to be determined.

5 February 2007

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Division: Pacific Ocean Division

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Kahuku Watershed, HI Honolulu District	602,000	264,000	79,000	99,000	100,000 *	60,000	0

\* Assumed allocation. Final actual allocations are yet to be determined.

The Kahuku Area is located on the northeastern coast of the island of Oahu, State of Hawaii, between Kawela and Laie along Highway 83 and covers approximately 2.525 sq kilometers. The Kahuku Village area has historically experienced repeated flooding and drainage problems. The most recent major storm occurred in March 1991, which caused substantial damage to the community, flooded the James Campbell National Wildlife Refuge as well as area aqua farms, residences, schools, and businesses. Estimated losses from this event totaled \$6.4 to \$10.3 million. Several factors can be cited: (1) Ponding in the flat, low-lying developed areas on both sides of Kamehameha Highway due to lack of an adequate drainage system; (2) The formation of sand dunes at the channel mouths which prevent floodwaters from discharging into the ocean; and, (3) Land developments that may have impeded flows to the ocean. The feasibility study is identifying and evaluating alternatives to address the flooding issues in the Ohia Stream and Hospital Ditch basins. Opportunities to address the enhancement of the adjacent wildlife refuge are being considered in the development of project alternatives.

Authority to conduct this study is provided under Section 209 of the Flood Control Act of 1962, Public Law 87-874. The Feasibility Cost Sharing Agreement was executed in December 2002. The State of Hawaii and the City and County of Honolulu equally shares local co-sponsorship. Both agencies are fully aware of the cost sharing requirements of the project.

Fiscal Year 2007 funds are being used to complete the draft report and initiate independent technical review.

Fiscal Year 2008 funds will be used to complete required technical and policy reviews and complete the feasibility phase.

The total estimated cost of the feasibility phase is \$1,004,000 and will be shared on a 50-50 percent basis by Federal and non-Federal interests with consideration for in-kind credits to the non-Federal sponsors.

A summary of cost sharing is as follows:

Total Estimated Study Cost	\$1,104,000
Reconnaissance Phase (Federal)	100,000
Feasibility Phase (Federal)	502,000
Feasibility Phase (Non-Federal)	502,000

The scheduled completion date of the feasibility study is September 2008

5 February 2007

ENVIRONMENT  
INVESTIGATIONS  
SOUTH ATLANTIC DIVISION

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008  
 Division: South Atlantic Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 2005	Allocation For FY 2005	Allocation For FY 2006	Allocation FY 2007	Tentative Allocation FY 2008	Additional to complete After FY 2008
North Carolina	\$	\$	\$	\$	\$	\$	\$
Currituck Sound Wilmington District	1,625,000	164,000	197,000	149,000	150,000*	150,000	815,000

\*Assumed allocation. Final, actual allocations yet to be determined.

The study area is located in Currituck and Dare Counties in the northeastern part of North Carolina. Currituck Sound is a 153 square mile brackish water estuary separated from the Atlantic Ocean by thin barrier islands known as the Outer Banks. The most significant freshwater inputs to Currituck Sound include North Landing River and Northwest River, both originating in the Great Dismal Swamp of North Carolina and Virginia. Back Bay, a 35 square mile estuary located in Virginia, also discharges water into the sound through shallow water channels along the eastern shore. Water level fluctuations in Currituck Sound are a function of prevailing winds from Albemarle Sound. Southerly winds force water into Currituck Sound, whereas northerly winds force water out. The cumulative effects of prevailing winds and possible point source inputs of brackish water from Federal canals influence sound salinity. The local interests are concerned about increased salinity levels which have frequently exceeded the threshold for many freshwater fisheries and have caused a severe decline in these fisheries. In addition, the increased salinity regime has contributed to the loss of extensive submerged aquatic vegetation (SAV). SAV provides a food source for various fish stocks, creates an ideal habitat for numerous migrating waterfowl species, and maintains the stability of the sound bottom. The study will address these water quality issues and explore environmental protection and restoration alternatives. The State of North Carolina is the sponsor and understands the cost share requirements on the feasibility study. The feasibility cost sharing agreement was signed on 5 February 2004. Non-Corps study participants include Elizabeth City State University, the U.S. Geological Survey, the N.C. Estuarine Research Reserve, the U.S. Fish and Wildlife Service, and the N.C. Department of Environment and Natural Resources, Division of Water Resources.

Fiscal Year 2007 funds are being used to continue the feasibility phase of the study.

Fiscal Year 2008 funds will be used to continue the feasibility phase including collecting required data and performing modeling activities to aid in determining a preferred restoration alternative. The estimated cost of the feasibility phase is \$3,000,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$3,125,000
Reconnaissance Phase (Federal)	125,000

5 February 2007

Feasibility Phase (Federal)	1,500,000
Feasibility Phase (Non-Federal)	1,500,000

The reconnaissance phase was completed in February 2004. The feasibility study completion date is to be determined.

5 February 2007

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008  
 Division: South Atlantic Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 2005	Allocation For FY 2005	Allocation For FY 2006	Allocation FY 2007	Tentative Allocation FY 2008	Additional to complete After FY 2008
	\$	\$	\$	\$	\$	\$	\$
Virginia and North Carolina							
John H. Kerr Dam and Reservoir Wilmington District	2,325,000	371,000	237,000	297,000	300,000*	300,000	820,000

\*Assumed allocation. Final, actual allocations yet to be determined.

John H. Kerr Dam and Reservoir is located in the Roanoke River Basin, which extends into north-central North Carolina and south-central Virginia. The project was completed in 1952 and provides hydropower, flood control, water supply, and recreation. Two downstream non-Federal hydropower reservoirs, Gaston and Roanoke Rapids, operated by the Dominion Power Company have minimal active storage for daily hydropower peaking. The Kerr, Gaston and Roanoke Rapids projects operate cooperatively generating power, controlling flooding, and ensuring adequate downstream flows. The lower Roanoke River basin is one of the finest remaining swamp forest ecosystems within the eastern United States. These bottomland hardwood forests, wetlands, uplands, and streams provide a high quality habitat for fish and wildlife, including waterfowl. Federal and State agencies have expressed concern that there is a probable correlation between fish kills and low dissolved oxygen in the lower Roanoke River basin and the operation of Kerr Reservoir. Resource concerns for the Lower Roanoke center on the need for restoration and enhancement of extensive swamp and flood plain forests and fisheries through improvements to the hydrologic regime. The State of North Carolina and the Commonwealth of Virginia are the sponsors and they understand the cost share requirements for the feasibility study. The reconnaissance report was approved in May 2001. The Feasibility Cost Sharing Agreement (FCSA) was signed on 17 June 2003.

Fiscal Year 2007 funds are being used to continue the feasibility phase of the study.

Fiscal year 2008 funds will be used to continue the feasibility phase including water quality, fish, wildlife, and sedimentation data collection and studies. The estimated cost of the feasibility phase is \$4,300,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$4,475,000
Reconnaissance Phase (Federal)	175,000
Feasibility Phase (Federal)	2,150,000

5 February 2007

Feasibility Phase (Non-Federal)

2,150,000

The reconnaissance phase was completed in June 2003. The feasibility study completion date is to be determined.

5 February 2007

APPROPRIATION TITLE: General Investigations, Fiscal Year 2008

Division: South Atlantic Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 2005	Allocation FY 2005	Allocation FY 2006	Allocation FY 2007	Tentative Allocation FY 2008	Additional to complete After FY 2008
Georgia	\$	\$	\$	\$	\$	\$	\$
Long Island, Marsh, Johns Creeks, GA Mobile District	1,451,000	242,750	180,250	147,000	200,000*	531,000	150,000

\*Assumed allocation. Final, actual allocations yet to be determined.

Long Island, Marsh and Johns Creeks are located within the metropolitan Atlanta watershed principally in Fulton County. Fulton County, Georgia has passed floodplain regulations, resolutions, or ordinances to restrict development in flood-prone areas; however, rapid urbanization prior to their passage resulted in the development of many areas subject to periodic flooding. Both scarcity of land and attractiveness of streamside areas contributed to encroachment on the floodplain. Local drainage patterns have also been greatly altered by the urbanization of the metropolitan area. At many locations, extensive storm drain systems have been used to substantially alter natural drainage patterns in order to remove water quickly. Rapid urbanization in the metropolitan Atlanta area over the last few decades has resulted in increases in the magnitude and frequency of severe floods; increased streambank erosion; depreciated water quality; a reduction in diversity and abundance of aquatic insects and fish; and destruction of wetlands, riparian buffers, and springs. The study will be conducted to develop portions of a comprehensive watershed plan for metropolitan Atlanta, including Long Island, Marsh and Johns Creeks. Development of portions of the master plan will be based on a thorough assessment of the changes in stream hydrology, morphology, water quality and habitat and ecology. Fulton County is the sponsor and understands the cost-share requirements of the feasibility phase. The Feasibility Cost Sharing Agreement was signed in May 2003 for Johns Creek. The Feasibility Cost Sharing Agreement was amended to include Long Island and Marsh Creeks in March 2004.

Fiscal Year 2007 funds are being used to continue the feasibility phase of the study.

Funds requested for Fiscal Year 2008 will be used to continue the feasibility phase. The preliminary estimated cost of the feasibility phase is \$2,600,000, which is to be cost-shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing follows:

Total Estimated Study Cost	\$2,751,000
Reconnaissance Phase (Federal)	151,000
Feasibility Phase (Federal)	1,300,000
Feasibility Phase (Non-Federal)	1,300,000

The original reconnaissance phase was completed in May 2003. The feasibility study completion date is to be determined.

5 February 2007



APPROPRIATION TITLE: General Investigations, Fiscal Year 2008  
 Division: South Atlantic Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 2005	Allocation For FY 2005	Allocation For FY 2006	Allocation FY 2007	Tentative Allocation FY 2008	Additional to complete After FY 2008
North Carolina	\$	\$	\$	\$	\$	\$	\$
Neuse River Basin Wilmington District	1,122,000	209,000	80,000	129,000	150,000*	554,000	0

\*Assumed allocation. Final, actual allocations yet to be determined.

The study area is located in the eastern part of North Carolina. The Neuse River basin encompasses approximately 11 percent of the State of North Carolina and consists of all or portions of 19 counties. The basin is roughly oblong in shape, approximately 180 miles long, with a maximum width of about 46 miles. The Neuse River is formed by the confluence of the Eno and Flat Rivers, about 8 miles north of the city of Durham, and has a drainage area of approximately 5,710 square miles. The basin is primarily an agricultural region, but contains many small towns and several cities, which are important commercial centers. At the City of New Bern, the Neuse River system changes from a free-flowing river to a tidal estuary (i.e., Neuse Estuary). There have been considerable problems in the basin due to increased urbanization in the Raleigh-Durham area, sediment and nutrient loading from agricultural areas in the lower half of the basin, and over-harvesting of certain fisheries in the Neuse Estuary, all of which have had adverse impacts on wetlands and submerged aquatic vegetation (SAV). Estuarine bottom is lost annually due to low dissolved oxygen (DO). Environmental restoration alternatives include stream restoration, anadromous fish habitat restoration, and oyster habitat restoration in the Neuse Estuary, part of Albemarle-Pamlico National Estuary. The secondary focus of this study is flood damage reduction. This entire area suffered significant damages as a result of Hurricane Floyd in 1999. Total flood damages were in excess of \$297,000,000. The sponsor is the North Carolina Department of Environment and Natural Resources and they understand the cost share requirements of the feasibility study. The Feasibility Cost Sharing Agreement was signed on 9 May 2002.

Fiscal Year 2007 funds are being used to continue the feasibility phase of the study.

Fiscal Year 2008 funds will be used to develop the National Ecosystem Restoration (NER) plan and complete the feasibility phase. The estimated cost of the feasibility phase is \$2,000,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$2,122,000
Reconnaissance Phase (Federal)	122,000
Feasibility Phase (Federal)	1,000,000
Feasibility Phase (Non-Federal)	1,000,000

The reconnaissance phase was completed in May 2002. The feasibility study completion is September 2008.

ENVIRONMENT  
INVESTIGATIONS  
SOUTH PACIFIC DIVISION

ILLUSTRATION A-2.2  
COST-SHARED FEASIBILITY STUDY

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: South Pacific

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
New Mexico							
Middle Rio Grande Bosque Albuquerque District	1,425,000	595,000	72,000	247,000	200,000*	311,000	0

\* Assumed allocation. Final, actual allocations yet to be determined.

The study will address ecosystem restoration and recreation needs within the Middle Rio Grande Basin. The Middle Rio Grande Basin is located in central New Mexico from Cochiti Reservoir to Elephant Butte Reservoir, approximately 180 miles south of Cochiti. The study area within the Middle Rio Grande Basin encompasses approximately 2500 acres of the Bosque along the Rio Grande, from Corrales, New Mexico, for approximately 19 miles through Albuquerque to the north boundary of the Isleta Pueblo. River flow regulation by Cochiti Dam upstream of the study area has changed the historical flow regime in the Rio Grande. Water is diverted from the river for irrigation, industrial, and residential uses. Changes in hydrology, channel configuration, land use activities, and the spread of exotic vegetation have adversely impacted the native riverine ecosystem to the extent that the Rio Grande Silvery Minnow and the Southwestern Willow Flycatcher are now listed as endangered under the provisions of the Endangered Species Act. The study will evaluate current conditions within the study area and make recommendations to improve environmental quality, reduce fire potential, and develop passive recreation opportunities. The Middle Rio Grande Conservancy District, the local sponsor, signed the Feasibility Cost Sharing Agreement in April 2004.

Fiscal Year 2007 funds are being used to continue the feasibility phase of the study to include hydrologic and hydraulic investigations, formulation, design and comparison of alternatives for environmental restoration, National Environmental Policy Act compliance activities, and continue public involvement activities.

The funds requested for Fiscal Year 2008 will be used to complete the feasibility phase of the study.

The estimated cost of the feasibility phase is \$2,050,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. Up to one hundred percent of the non-Federal share may be in-kind services. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$2,450,000
Reconnaissance Phase (Federal)	400,000
Feasibility Phase (Federal)	1,025,000
Feasibility Phase (Non-Federal)	1,025,000

The reconnaissance phase was completed in April 2004. The feasibility study is scheduled for completion in September 2008.

5 February 2007

ILLUSTRATION A-2.4  
PRECONSTRUCTION ENGINEERING AND DESIGN

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: South Pacific

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
<b>PRECONSTRUCTION ENGINEERING AND DESIGN (PED) ACTIVITIES – (CONTINUING)</b>							
Rillito River, Pima County Los Angeles District	3,150,000	0	16,000	291,000	300,000*	300,000	2,243,000

\*Assumed allocation. Final, actual allocations yet to be determined.

The Rillito River is located in Southeast Arizona within Pima County and flows through the city of Tucson, second largest city in Arizona. The project area encompasses about 500 acres along the river and between Craycroft and Campbell Ave. In Arizona, over 90 percent of riparian areas have been lost due to impacts from European settlement and urbanization. A feasibility report was completed in May 2004 and the Chief of Engineer's Report was signed in December 2004. The recommended project, estimated to cost \$75.2 million (October 2005 price levels) with an estimated Federal cost of \$48.4 million and an estimated non-Federal cost of \$26.8 million, includes: restoration of a significant ecosystem resource along the Pacific Flyway for neo-tropical birds, reconnect wildlife corridors, restore wildlife habitat for species significant to Pima County, provide potential habitat for threatened and endangered species, and restore about 391 acres of habitat, 4.8-mile reach of threatened plant communities of cottonwood/willow riparian forest, seasonal cienega, Mesquite Bosque, and five years of monitoring and adaptive management necessary to ensure success of the project. The Pima County, Arizona, Flood Control District, the local sponsor, expressed support for the project in April 2004, understands the cost-sharing requirements during preconstruction engineering and design and is prepared to execute a cost-sharing agreement scheduled for September 2007. Preconstruction engineering and design will ultimately be cost shared at the rate for the project to be constructed, but will be financed through the preconstruction engineering and design period at 25 percent non-Federal. Any adjustments that may be necessary to bring the non-Federal contribution in line with the project cost sharing will be accomplished in the first year of construction.

Total Estimated Preconstruction Engineering and Design Costs	\$4,200,000	Total Estimated Preconstruction Engineering and Design Costs	\$4,200,000
Initial Federal Share	3,150,000	Ultimate Federal Share	2,730,000
Initial Non-Federal Share	1,050,000	Ultimate Non-Federal Share	1,470,000

The project is not yet authorized for construction. Fiscal Year 2007 funds are being utilized to continue preconstruction engineering and design, execute the design agreement, conduct a Value Engineering study, and initiate the Detailed Design Report. Funds requested for Fiscal Year 2008 will be used to continue preconstruction engineering and design, complete 30% of the Detailed Design Report, and initiate plans and specifications. A completion date is to be determined for the preconstruction engineering and design phase.

5 February 2007

ILLUSTRATION A-2.4  
PRECONSTRUCTION ENGINEERING AND DESIGN

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Division: South Pacific

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
<b>PRECONSTRUCTION ENGINEERING AND DESIGN (PED) ACTIVITIES - (CONTINUING)</b>							
Va Shly-Ay Akimel Salt River Los Angeles District	3,750,000	0	110,000	385,000	200,000*	408,000	2,647,000

\*Assumed allocation. Final, actual allocations yet to be determined.

The Va Shly-Ay Akimel (pronounced va sha lay akmel) project area involves approximately 8 miles of the Salt River in Arizona. The project area encompasses about 17,435 acres of the river between the Granite Reef Dam and the Pima Freeway (SR101). Most of the project area is on the Salt River Pima Maricopa Indian Community. The City of Mesa borders the south side of the area. The area along the river is severely degraded and has sustained a very large loss of riparian habitat. A feasibility report was completed in September 2004 and the Chief of Engineer's Report was signed January 2005. The recommended project, estimated to cost \$142.9 million (October 2005 price levels) with an estimated Federal cost of \$92.7 million and an estimated non-Federal cost of \$50.2 million. The project includes restoring and improving 1,485 acres of habitat including four nationally significant habitat types; Cottonwood-Willow, Wetlands including River Bottom, Mesquite, and Sonoran Desert Shrub, one grade control structure, water delivery systems, and re-grading of the river for revegetation. The plan provides restoration benefits of 1,006 average annual functional capacity units (AAFCU), which results in an average annual cost per AAFCU of \$10,100. The project will provide benefits to the habitat for important bird species including the Yuma clapper rail, southwestern willow flycatcher, cactus ferruginous pygmy owl, California brown pelican, and bald eagle. The Salt River Pima Maricopa Indian Community and the City of Mesa, the local sponsors, signed a design agreement in September 2006. Preconstruction engineering and design will ultimately be cost shared at the rate for the project to be constructed, but will be financed through the preconstruction engineering and design period at 25 percent non-Federal. Any adjustments that may be necessary to bring the non-Federal contribution in line with the project cost sharing will be accomplished in the first year of construction.

Total Estimated Preconstruction Engineering and Design Costs	\$5,000,000	Total Estimated Preconstruction Engineering and Design Costs	\$5,000,000
Initial Federal Share	3,750,000	Ultimate Federal Share	3,250,000
Initial Non-Federal Share	1,250,000	Ultimate Non-Federal Share	1,750,000

The project is not yet authorized for construction. Fiscal Year 2007 funds are being utilized to initiate preconstruction engineering and design. Funds requested for Fiscal Year 2008 will be used to continue preconstruction engineering and design to include preparation of the first set of plans and specifications. A completion date is to be determined for the preconstruction engineering and design phase.

5 February 2007

ENVIRONMENT  
INVESTIGATIONS  
SOUTHWESTERN DIVISION

ILLUSTRATION A-2.2  
COST-SHARED FEASIBILITY STUDY

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

Southwestern Division

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Nueces River and Tributaries, Texas Fort Worth and Galveston Districts	6,001,000	202,000	397,000	495,000	300,000	250,000	4,357,000

The Nueces River basin lies in the southern part of Texas. The Nueces River basin has an overall length of approximately 235 miles, a maximum width of 115 miles, and a total drainage area of 17,075 square miles. The Nueces River flows in a southeasterly direction and enters Nueces Bay near Corpus Christi, Texas. The Frio River is a principal tributary and drains the northeast portion of the Nueces River basin. The Edwards Plateau, a major source of water for the San Antonio and Bexar County metropolitan areas, accounts for about 20 percent of the basin and is recognized to have high potential for groundwater recharge. Historic land use practices, drought and poor water resource management have resulted in significant environmental degradation. The lack of fresh-water inflows into the Nueces Bay has resulted in hyper-saline conditions that have severely diminished the habitat suitability of approximately 20,000 acres of the Nueces delta area. Additionally, existing surface and groundwater sources are not sufficient to assure an adequate water supply to fulfill future needs. Recent floods in 1998 and 2002 resulted in significant property and infrastructure damages. The 905(b) reconnaissance report, completed in December 2002, identified a Federal interest in evaluating opportunities in the study area for ecosystem restoration, water quality, water supply, flood damage reduction, recreation, and other allied purposes. The study sponsors are the Nueces River Authority, San Antonio Water System, San Antonio River Authority, Guadalupe-Blanco River Authority and the city of Corpus Christi, Texas. The Feasibility Cost Sharing Agreement was signed on 24 September 2004.

Fiscal Year 2007 funds are being used to further document existing conditions, complete updates to existing hydrologic and hydraulic models, and initiate development of new hydrologic and hydraulic models needed to document conditions in the mid and lower basin. Fiscal Year 2008 funds will be used to initiate development of new mid and lower basin hydrologic, hydraulic and ecological models. The estimated cost of the feasibility phase is \$11,602,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	\$11,802,000
Reconnaissance Phase – Federal	200,000
Feasibility Phase – Federal	5,801,000
Feasibility Phase - non-Federal	5,801,000

The completion date for the Nueces River and Tributaries, Texas, feasibility study is to be determined.

ENVIRONMENT  
INVESTIGATIONS  
MISSISSIPPI RIVER AND TRIBUTARIES



APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and TN - General Investigations, Fiscal Year 2008

Study	Total Estimated Federal Cost \$	Allocation Prior to FY 2006 \$	Anticipated Allocation FY 2007 \$	Tentative Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
1. SURVEYS – NEW:					
a. Navigation Studies: None.					
b. Flood Damage Prevention Studies: None.					
c. Shoreline Protection Studies: None.					
d. Special Studies: None.					
e. Comprehensive Studies: None.					
f. Watershed/Ecosystem Studies: The amount of \$200,000 is being requested to investigate needs and opportunities for fee and easement lands for flood plain management and aquatic ecosystem enhancement purposes beyond authorization in Supplemental Appropriation 1985 and WRDA '86.					
LOUISIANA					
Atchafalaya Basin Floodway System Land Study, Louisiana New Orleans District	300,000	0	0	200,000	0
The study area includes the Atchafalaya Basin Floodway System positioned between the West Atchafalaya Basin Levee and the East Atchafalaya Basin Levee from Simmesport, Louisiana at the north to below Morgan City, Louisiana to the south. The purpose of the study is to investigate further needs and opportunities in the acquisition of fee and easement lands for floodplain management and aquatic ecosystem restoration purposes beyond the amount of land authorized for acquisition in the Supplemental Appropriations Act of 1985, Public Law 99-88 and WRDA of 1986, Public Law 99-662, which authorized the Atchafalaya Basin Floodway System Project, Louisiana. Because land acquisition is an important component of the overall flood damage reduction plan for the watershed, this study has a high priority. The study also will explore whether the acquisition of fee title is, or is not, preferable to the acquisition of easements.					
Funds requested for Fiscal Year 2008 will be used to initiate the reconnaissance study.					
Total – Watershed/Ecosystem Studies	300,000	0	0	200,000	0
Total – SURVEYS - New	300,000	0	0	200,000	0

Mississippi River Commission

New Orleans District  
5 February 2007

Atchafalaya Basin Floodway  
System Land Study, LA

# CONSTRUCTION

ENVIRONMENT

CONSTRUCTION

GREAT LAKES AND OHIO RIVER DIVISION

APPROPRIATION TITLE: Construction - (Environmental Mitigation, Restoration and Protection)

PROJECT: Chicago Sanitary & Ship Canal Dispersal Barriers, Illinois (Continuing)

LOCATION: The Dispersal Barriers are near River Mile 296.5 in Romeoville, IL in Cook County.

DESCRIPTION: The Chicago Sanitary and Ship Canal (CSSC) is a man-made waterway that connects the Chicago River and the Des Plaines River, which creates a connection between Lake Michigan and the Mississippi River basin. A temporary Demonstration Dispersal Barrier has been operating in the CSSC since 2002. The design life is estimated at 3-5 years. This project was initiated as a demonstration project to determine what techniques may best prohibit the dispersal of aquatic nuisance species, such as Asian carp, through the CSSC. The Chicago District installed an electric Dispersal Barrier (Barrier I) that would not interfere with navigation. An array of DC electrodes was installed on the channel bottom. When power is provided, an electric field is created within the water that repels fish. A second permanent dispersal barrier is needed to provide continued protection against nuisance species. Barrier II will also be an electric field barrier, but will include design improvements identified during monitoring and testing of the Demonstration Barrier. Barrier II is being constructed in two phases, IIA and IIB. The first phase consists of construction of two underwater electrode arrays and one control house. This control house will be able to operate one of the two arrays. The second phase consists of construction of a second control house that will allow both arrays to be operated at the same time.

AUTHORIZATION: Section 1202, Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (PL 101-636, 11/29/90, as amended through 10/26/96), Section 2309, Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery 2006 (P.L. 109-234). Section 1135, Water Resources Development Act 1986 (Continuing Authority Program), Section 345, FY 2005 DC Appropriations Act (P.L. 108-335). The budget proposes legislation to increase the authorized maximum project cost for Barrier II and make Barrier I permanent. The request for appropriations assumes enactment of this proposed legislation.

REMAINING BENEFIT-REMAINING COST RATIO: N/A.

TOTAL BENEFIT-COST RATIO: N/A.

INITIAL BENEFIT-COST RATIO: N/A.

BASIS OF BENEFIT-COST RATIO: N/A.

SUMMARIZED FINANCIAL DATA

	<u>Demo Barrier I</u>	<u>Barrier II &amp; Perm. Barrier I</u>
Estimated Federal Cost	\$4,570,000	\$17,122,500
Estimated Non-Federal Cost	0	5,707,500
Cash Contributions		5,707,500
Other Costs		0
Project Cost Subtotals	\$4,570,000	\$22,830,000 <sup>1/</sup>
Total Estimated Project Cost		\$27,400,000

PHYSICAL

STATUS (1 Jan 2007)	PERCENT COMPLETE	COMPLETION SCHEDULE
Barrier I	50	To Be Determined
Barrier II	45	To Be Determined
Physical Data		
Barrier I: 12 160-ft steel cable electrodes over 54 ft of the CSSC + control house.		
Barrier II: 84 160-ft steel billet electrodes over 480 ft of the CSSC + 2 control houses		

<sup>1/</sup> \$16,000,000 for Barrier II and \$6,830,000 for making Barrier I permanent.

SUMMARIZED FINANCIAL DATA

	<u>Demo Barrier I</u>	<u>Barrier II &amp; Perm. Barrier I</u>	<u>Total</u>	ACCUM. PCT. OF EST. FED. COST
Allocations to 30 September 2004	\$3,170,000	\$ 4,653,000	\$7,823,000	
Allocations for FY 2005	500,000	2,172,000	2,672,000	
Allocations for FY 2006	400,000	0	400,000	
Conference Allowance for FY 2007		0	0	
Allocations for FY 2007		0	0	
Allocations through FY 2007	4,070,000	6,825,000 <sup>2/</sup>	10,895,000	50
Allocation Requested for FY 2008	500,000	7,150,000	7,650,000	85
Programmed Balance to Complete after FY 2008	0	3,147,500	3,147,500	
Unprogrammed Balance to Complete after FY 2008	0	0	0	

<sup>2/</sup> Includes CAP Section 1135 allocations of \$3,702,000.

JUSTIFICATION: The Chicago Sanitary and Ship Canal is the primary aquatic link between the Great Lakes and Mississippi River watersheds. The canal is heavily used by commercial and recreational crafts. This man-made canal serves as the primary corridor for the dispersal of invasive aquatic species between these two major drainage basins. The adverse economic and ecological effects of invasive species can be devastating, as has been evidenced by the Zebra mussel and Sea Lamprey infestations of the Great Lakes. Currently the Asian carp fish infestation in the Illinois Waterway is about 50 miles from the barrier location. Asian carp could have a strong negative effect on the commercial and sport fisheries in the Great Lakes, which have an estimated value to the regional economy of \$4 to \$5 billion annually. It is important to keep an operational barrier system and to ensure all possible steps are taken for the successful operation of the system. The aquatic nuisance species Dispersal Barriers protect the sustainability of aquatic habitat in the 5 Great Lakes and the 121 rivers within the Great Lakes basin and 852 rivers within the Mississippi River basin while maintaining the commercial and economic viability of the Chicago Sanitary and Ship Canal. The project provides an example of technologies that can be applied to other navigation canals where invasive species are a concern such as the Erie Canal, Lake Champlain, and the Tennessee Tombigbee Waterway.

FISCAL YEAR 2007: Not applicable.

FISCAL YEAR 2008: The requested amount of \$7,650,000 will be applied as follows:

Continue Operation of Barrier I	\$ 500,000	<sup>1/</sup>
Complete construction of Barrier IIB	3,750,000	
Construction Management of Barrier IIB	488,000	
Continue Maintenance of Barrier IIA	375,000	
Engineering, Design and initiate Construction to make Barrier I permanent	2,537,000	
Total	\$ 7,650,000	

<sup>1/</sup> Continued operation of Barrier I at full Federal cost under existing authority during completion of Barrier II.

NON-FEDERAL COST: The legislation being proposed by the budget would require 25 percent non-Federal cost sharing for the costs of making Barrier I permanent, as well as increasing the authorized project cost for Barrier II, which is cost shared. Upon enactment of the proposed legislation, non-Federal items of cooperation would be as follows:

Requirements of Local Cooperation	Payment During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Pay 25 percent of the project costs for Barrier II, and bear all costs of operation, maintenance, repair, rehabilitation and replacement.	\$4,000,000	\$500,000
Pay 25 percent of the project costs to make Barrier I permanent and bear all costs of operation, maintenance, repair rehabilitation and replacement of the completed, permanent project.	\$1,707,500	\$500,000
Total Non-Federal Costs	\$5,707,500	\$1,000,000

The non-Federal sponsor for Barrier II has agreed to make all required payments concurrently with project construction.

STATUS OF LOCAL COOPERATION: The State of Illinois is the local sponsor for the Barrier II project. No non-federal sponsor for making Barrier I permanent has been identified.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate is \$27,400,000.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Environmental Assessment was issued in August 1999. A Finding of No Significant Impact was signed 28 December 1999.

OTHER INFORMATION: Funds to initiate construction for Barrier I were appropriated in FY 1998. Barrier II was initiated under Section 1135 of the Continuing Authorities Program. After section 345 was enacted, funds specifically for Barrier II were appropriated in FY 2005. Barrier II will not become operational until safety testing is completed and approved by the Corps of Engineers and the Coast Guard. Safety testing of Barrier IIA is underway and will be completed in FY 2007.

ENVIRONMENT

CONSTRUCTION

MISSISSIPPI VALLEY DIVISION



APPROPRIATION TITLE: Construction, General – Environmental Mitigation, Restoration, and Protection

PROJECT: Upper Mississippi River Restoration, Illinois, Iowa, Minnesota, Missouri, and Wisconsin (Continuing)

LOCATION: The project is authorized for those river reaches having commercial navigation channels on the Upper Mississippi River, Illinois River, Minnesota River, St. Croix River, and Kaskaskia River in the states of Illinois, Iowa, Minnesota, Missouri, and Wisconsin. The following counties are included: (Illinois) Jo Daviess, Carroll, Whiteside, Rock Island, Mercer, Henderson, Hancock, Adams, Pike, Calhoun, Jersey, Madison, St. Clair, Monroe, Randolph, Jackson, Union, Alexander, Pulaski, Brown, Cass, Schuyler, Fulton, Mason, Peoria, Tazewell, Woodford, Marshall, Putnam, Bureau, LaSalle, Grundy, Will; (Iowa) Allamakee, Clayton, Dubuque, Jackson, Clinton, Scott, Muscatine, Louisa, Des Moines, Lee; (Wisconsin) St. Croix, Pierce, Pepin, Buffalo, Trempealeau, La Cross, Vernon, Crawford, Grant; (Minnesota) Anoka, Hennepin, Scott, Dakota, Ramsey, Washington, Goodhue, Wabasha, Winona, Houston; (Missouri) Clark, Lewis, Marion, Ralls, Pike, Lincoln, St. Charles, St. Louis, Jefferson, Ste. Genevieve, Perry, Cape Girardeau, Scott, Mississippi.

DESCRIPTION: The purpose of the Upper Mississippi River Restoration project is to address adverse impacts to the aquatic ecosystem of the Upper Mississippi River. Habitat rehabilitation and enhancement projects are effectively preserving and improving fish and wildlife habitat on the Upper Mississippi River System (UMRS). Projects completed to date have been designed to counteract the effects of backwater sedimentation through dike construction to limit sedimentation of prime habitat and dredging to restore aquatic habitat; provide water level control and optimal food growth for waterfowl; create islands to decrease wind generated disturbances, thereby reducing turbidity; alter the flow of water to side channels and backwaters to decrease flows of sediment-laden water during high water and to increase dissolved oxygen levels during low water; increase the diversity and abundance of mast (nut) producing trees and prairies to benefit wildlife. Long-Term Resource Monitoring provides scientific information for more informed management of the UMRS ecosystem. Ninety-seven percent of authorized Upper Mississippi River Restoration appropriations have been used to design and construct habitat rehabilitation and enhancement projects and for Long-Term Resource Monitoring. Recreation development is an authorized program element. All work is programmed.

AUTHORIZATION: Fiscal Year 1985 Supplemental Appropriations Act, P.L. 99-88; Water Resources Development Act of 1986, PL 99-662, Section 1103; Water Resources Development Act of 1990, P.L. 101-640, Section 405; Water Resources Development Act of 1992, P.L. 102-580, Section 107; and the Water Resources Development Act of 1999, P.L. 106-53, Section 509.

REMAINING BENEFIT-REMAINING COST: Not applicable.

TOTAL BENEFIT-COST RATIO: Not applicable.

INITIAL BENEFIT-COST RATIO: Not applicable.

SUMMARIZED FINANCIAL DATA		ACCUM	PCT OF EST	FED COST
Estimated Federal Cost		\$ 766,195,000		
Estimated Non-Federal Cost		8,204,000		
Cash Contribution	\$ 8,204,000			
Other Costs	0			
Total Estimated Project Cost		\$ 774,399,000		
Allocations to 30 September 2004		\$ 261,821,000		
Allocation for FY 2005		15,547,000		
Allocation for FY2006		19,799,000		
Conference Allowance for FY 2007		TBD		
Allocation for FY 2007		26,800,000 *		
Allocations to 30 September 2007		323,967,000	42	
Allocation Requested for FY 2008		\$ 23,464,000	45	
Programmed Balance to Complete After FY 2008		\$418,764,000		
Unprogrammed Balance to Complete After FY 2008		0		

\* Assumed allocation. Final, actual allocations yet to be determined.

STATUS: (1 January 2007)

PERCENT COMPLETE      PHYSICAL COMPLETION SCHEDULE <sup>1/</sup>

Long Term Resource Monitoring		NA	NA
Economic Impacts of Recreation Study		100	(Sep 92)
Traffic Monitoring		100	(Sep 90)
Habitat Rehabilitation and Enhancement Projects (Construction)			
Angle Blackburn, MO	ST. LOUIS DISTRICT	0	Deferred
Batchtown Mgt. Area, IL	ST. LOUIS DISTRICT	75	TBD
Calhoun Point, IL	ST. LOUIS DISTRICT	85	Dec 07
Clarksville Refuge, MO	ST. LOUIS DISTRICT	100	(Apr 90)
Cuivre Island, MO	ST. LOUIS DISTRICT	100	(Jul 99)
Dresser Island, MO	ST. LOUIS DISTRICT	100	(Sep 91)
Establishment Chute, MO	ST. LOUIS DISTRICT	0	Deferred
Godar, IL	ST. LOUIS DISTRICT	1	TBD
Jefferson Barracks Side Channel	ST. LOUIS DISTRICT	0	Deferred
Least Tern, MO	ST. LOUIS DISTRICT	22	Deferred
Norton Woods, MO	ST. LOUIS DISTRICT	0	TBD
Pharrs Island, Phase I, MO	ST. LOUIS DISTRICT	100	(Jun 92)
Pools 25 and 26, MO	ST. LOUIS DISTRICT	26	Nov 08
Reds Landing, IL	ST. LOUIS DISTRICT	0	Deferred
Salt Lake/Ft Chartres S.C., IL	ST. LOUIS DISTRICT	7	TBD
Stag & Keaton Is., MO	ST. LOUIS DISTRICT	100	(Sep 98)
Stump Lake, IL	ST. LOUIS DISTRICT	100	(Nov 98)
Schenimann, MO	ST. LOUIS DISTRICT	15	TBD
Stone Dike Alteration, IL/MO	ST. LOUIS DISTRICT	10	Deferred
Swan Lake, IL	ST. LOUIS DISTRICT	99	Dec 08
Ted Shanks, MO	ST. LOUIS DISTRICT	1	TBD
Wilkinson Island, IL	ST. LOUIS DISTRICT	1	TBD
Andalusia Refuge, IL	ROCK ISLAND DISTRICT	100	(Dec 94)
Banner Marsh, IL	ROCK ISLAND DISTRICT	100	(Dec 03)
Bay Island, MO	ROCK ISLAND DISTRICT	100	(Nov 94)
Beaver Island, IA	ROCK ISLAND DISTRICT	2	TBD
Bertom Lake, WI	ROCK ISLAND DISTRICT	100	(Jun 92)
Big Timber, IA	ROCK ISLAND DISTRICT	100	(Jun 95)
Brown's Lake, IA	ROCK ISLAND DISTRICT	100	(Sep 94)

Mississippi Valley Division

Rock Island District  
5 February 2007

Upper Mississippi River Restoration,  
Illinois, Iowa, Minnesota,  
Missouri, and Wisconsin

STATUS: (1 January 2007) (Continued)

		PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE <sup>1/</sup>
Chautauqua Refuge, IL	ROCK ISLAND DISTRICT	100	(Dec 03)
Cottonwood Island, MO	ROCK ISLAND DISTRICT	100	(Dec 99)
Fox Island, MO	ROCK ISLAND DISTRICT	20	TBD
Gardner Div., IL	ROCK ISLAND DISTRICT	100	Sep 06
Huron Island, IA	ROCK ISLAND DISTRICT	5	TBD
Lake Odessa, IA	ROCK ISLAND DISTRICT	40	TBD
Pool 11 Islands, WI/IA	ROCK ISLAND DISTRICT	99	Sep 07
Pleasant Creek, IA	ROCK ISLAND DISTRICT	100	(Jan 03)
Monkey Chute, MO	ROCK ISLAND DISTRICT	100	(Aug 89)
Peoria Lake, IL	ROCK ISLAND DISTRICT	100	(Sep 97)
Peosta Channel, IA	ROCK ISLAND DISTRICT	0	Deferred
Pool 12 Overwintering IA/IL	ROCK ISLAND DISTRICT	20	TBD
Potters Marsh, IL	ROCK ISLAND DISTRICT	100	(Jun 96)
Princeton, IA	ROCK ISLAND DISTRICT	100	(Dec 01)
Rice Lake, IL	ROCK ISLAND DISTRICT	18	TBD
Smith's Creek, IA	ROCK ISLAND DISTRICT	9	Deferred
Spring Lake, IL	ROCK ISLAND DISTRICT	100	(Sep 01)
Ambrough Slough, WI	ST. PAUL DISTRICT	100	(Sep 04)
Blackbird Slough, MN	ST. PAUL DISTRICT	0	Deferred
Blackhawk Park, WI	ST. PAUL DISTRICT	100	(Nov 90)
Bussey Lake, IA	ST. PAUL DISTRICT	100	(Jun 96)
Capoli Slough, WI	ST. PAUL DISTRICT	20	TBD
Cold Springs, WI	ST. PAUL DISTRICT	100	(Aug 94)
Conway Lake, IA	ST. PAUL DISTRICT	10	TBD
East Channel, WI, MN	ST. PAUL DISTRICT	100	(Jun 97)
Finger Lakes, MN	ST. PAUL DISTRICT	100	(Jul 94)
Guttenberg Fish Ponds, IA	ST. PAUL DISTRICT	100	(Oct 90)
Harpers Slough, IA	ST. PAUL DISTRICT	20	TBD
Indian Slough, WI	ST. PAUL DISTRICT	100	(Jun 94)
Island 42, MN	ST. PAUL DISTRICT	100	(May 87)
Lake Onalaska, WI	ST. PAUL DISTRICT	100	(Jul 90)
Lake Winneshiek, WI	ST. PAUL DISTRICT	5	TBD
Lansing Big Lake, IA	ST. PAUL DISTRICT	100	(Nov 94)
Long Lake, WI	ST. PAUL DISTRICT	100	(May 00)

Mississippi Valley Division

Rock Island District  
5 February 2007

Upper Mississippi River Restoration,  
Illinois, Iowa, Minnesota,  
Missouri, and Wisconsin

STATUS: (1 January 2007) (Continued)		PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE <sup>1</sup>
Long Meadow Lake, MN	ST. PAUL DISTRICT	100	(Nov 06)
McGregor Lake, WI	ST. PAUL DISTRICT	1	TBD
Miss. River Bank Stabilization, MN/WI	ST. PAUL DISTRICT	100	(Sep 99)
Peterson Lake, MN	ST. PAUL DISTRICT	100	(Jun 96)
Polander Lake, MN	ST. PAUL DISTRICT	100	(Nov 00)
Pool 8 Isl, Phase I, WI	ST. PAUL DISTRICT	100	(Jun 93)
Pool 8 Isl, Phase II, WI	ST. PAUL DISTRICT	100	(Sep 99)
Pool 9 Isl Protection, WI	ST. PAUL DISTRICT	100	(Jun 95)
Pool 8 Isl, Phase III, WI	ST. PAUL DISTRICT	35	TBD
Pool Slough, IA	ST. PAUL DISTRICT	95	Apr 07
Rice Lake, MN	ST. PAUL DISTRICT	100	(Nov 98)
Small Scale Drawdown, WI	ST. PAUL DISTRICT	100	(Sep 97)
Spring Lake Peninsula, WI	ST. PAUL DISTRICT	100	(Nov 94)
Spring Lake Islands, WI	ST. PAUL DISTRICT	100	(Jul 06)
Trempealeau NWR, WI	ST. PAUL DISTRICT	100	(Sep 99)
Whitewater River, MN	ST. PAUL DISTRICT	2	Deferred
Zumbro River, WI Recreation	ST. PAUL DISTRICT	0	Deferred
Habitat Needs Assessment		0	Unscheduled
		100	(Sep 00)

JUSTIFICATION: Implementation of the Upper Mississippi River Restoration project is important to the continued viability of the ecosystem of the Upper Mississippi River. Habitat rehabilitation and enhancement projects help reduce the negative effects of navigation features on the system's backwater and side channels. Projects are selected for design and construction based on continued assessment of habitat restoration and enhancement opportunities as determined by the involved Federal and non-Federal partners. Long-Term Resource Monitoring provides data to indicate trends in key environmental parameters, analyzing sedimentation and other UMRS resource problems, and producing a spatial information database. An Economic Impacts of Recreation Study has been conducted to enable Federal and non-Federal management decisions to better consider impacts on recreation and the consequent changes in recreation-related expenditures in the local and regional economies.

<sup>1</sup> Parentheses indicate actual date.

FISCAL YEAR 2007: The requested amount will be used to continue projects under way in FY 2006 and to continue monitoring and other restoration-related activities, as follows (all contracts below \$10,000,000 are fully funded):

PROJECT	DISTRICT	AMOUNT	STATUS
Batchtown Mgmt Area III, IL	ST. LOUIS DISTRICT	\$ 2,997,000	Initiate Construction
Pool 25 and 26, MO	ST. LOUIS DISTRICT	500,000	Initiate Design
Swan Lake, IL	ST. LOUIS DISTRICT	500,000	Continue Construction
Wilkinson Island, IL	ST. LOUIS DISTRICT	84,000	Continue Design
Beaver Island, IA	ROCK ISLAND DISTRICT	300,000	Continue Design
Fox Island, MO	ROCK ISLAND DISTRICT	260,000	Continue Design
Huron Island, IA	ROCK ISLAND DISTRICT	300,000	Continue Design
Lake Odessa Stg 1, IA (Options)	ROCK ISLAND DISTRICT	2,000,000	Continue Construction
Lake Odessa Stg 2, IA	ROCK ISLAND DISTRICT	1,372,000	Initiate Construction
Rice Lake, IL	ROCK ISLAND DISTRICT	1,800,000	Continue Design
Capoli Slough, WI	ST. PAUL DISTRICT	207,000	Initiate Construction
Conway Lake, IA	ST. PAUL DISTRICT	100,000	Continue Design
Harpers Slough, WI	ST. PAUL DISTRICT	566,000	Continue Design
Lake Winneshiek, WI	ST. PAUL DISTRICT	100,000	Continue Design
McGregor, IA	ST. PAUL DISTRICT	150,000	Continue Design
Pool 8 Phase III, Stg 2B, WI	ST. PAUL DISTRICT	3,992,000	Initiate Construction
Pool Slough, IA	ST. PAUL DISTRICT	25,000	Complete Construction
Spring Lake Islands, WI	ST. PAUL DISTRICT	25,000	Initiate/Complete Construction
Zumbro River, WI	ST. PAUL DISTRICT	50,000	Continue Design
Habitat Evaluation/Monitoring		600,000	
Public Involvement		25,000	
Long Term Resource Monitoring		7,287,000	
Independent Technical Review Committee		75,000	
Aquatic Ecosystem Planning		3,000,000	
Program Management		485,000	
TOTAL		\$ 26,800,000	

FISCAL YEAR 2008: The requested amount will be used to continue projects under way in FY 2007 and to continue monitoring and other restoration-related activities, as follows (all contracts below \$15,000,000 are fully funded):

PROJECT	DISTRICT	AMOUNT	STATUS
Batchtown Mgmt Area III, IL	ST. LOUIS DISTRICT	\$ 2,000,000	Continue Construction
Pool 25 and 26, MO	ST. LOUIS DISTRICT	100,000	Continue Design
Swan Lake, IL	ST. LOUIS DISTRICT	500,000	Continue Construction
Ted Shanks, MO	ST. LOUIS DISTRICT	250,000	Continue Design
Wilkinson Island, IL	ST. LOUIS DISTRICT	84,000	Continue Design
Beaver Island, IA	ROCK ISLAND DISTRICT	250,000	Continue Design
Fox Island	ROCK ISLAND DISTRICT	3,500,000	Initiate Construction
Huron Island, IA	ROCK ISLAND DISTRICT	300,000	Continue Design
Lake Odessa Stg 2, IA	ROCK ISLAND DISTRICT	1,150,000	Complete Construction
Rice Lake, IL	ROCK ISLAND DISTRICT	300,000	Continue Design
Rice Lake, IL	ROCK ISLAND DISTRICT	1,750,000	Initiate Construction
Capoli Slough, WI	ST. PAUL DISTRICT	500,000	Continue Construction
Conway Lake, IA	ST. PAUL DISTRICT	150,000	Continue Design
Harpers Slough, IA	ST. PAUL DISTRICT	1,600,000	Initiate Construction
Lake Winneshiek, WI	ST. PAUL DISTRICT	150,000	Continue Design
McGregor, IA	ST. PAUL DISTRICT	200,000	Continue Design
Pool 8 Phase III, Stg II, WI	ST. PAUL DISTRICT	1,700,000	Continue Construction
Zumbro River, WI	ST. PAUL DISTRICT	100,000	Continue Design
Habitat Evaluation/Monitoring		600,000	
Public Involvement		75,000	
Long Term Resource Monitoring		7,089,000	
Independent Technical Review Committee		300,000	
Program Management		816,000	
TOTAL		\$ 23,464,000	

NON-FEDERAL COSTS: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986 and amended by Section 107(b) of the Water Resources Development Act of 1999, the non-Federal sponsor must comply with the requirements listed below.

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Pay 25 percent of the first costs allocated to fish and wildlife enhancement for the following projects:		
Baldwin Backwater, IL	\$ 624,000	
Banner Marsh, IL	1,780,000	
Batchtown, IL	146,000	
Blackhawk Park, WI	77,000	
Bussey Lake, IA	162,000	
Cuivre Island, MO	498,000	
Osborne Channel, IL	190,000	
Peoria Lake, IL	42,000	
Princeton, IA	54,000	
Swan Lake, IL	262,000	
Subtotal	\$ 3,835,000	\$ 0
Pay 35 percent of the first costs allocated to fish and wildlife enhancement for the following projects:		
Ambrough Slough, WI	\$ 166,000	
Pool Slough, IA, MN	175,000	
Rice Lake, IL	3,378,000	
Smith Creek, IA	300,000	
Kaskaskia Oxbow	350,000	
Subtotal	\$ 4,369,000	\$ 0
Pay 50 percent of the first costs allocated to recreation projects.	0 <sup>1</sup>	
Total Non-Federal Construction Costs	\$ 8,204,000	\$ 0

<sup>1</sup> No recreation projects scheduled.



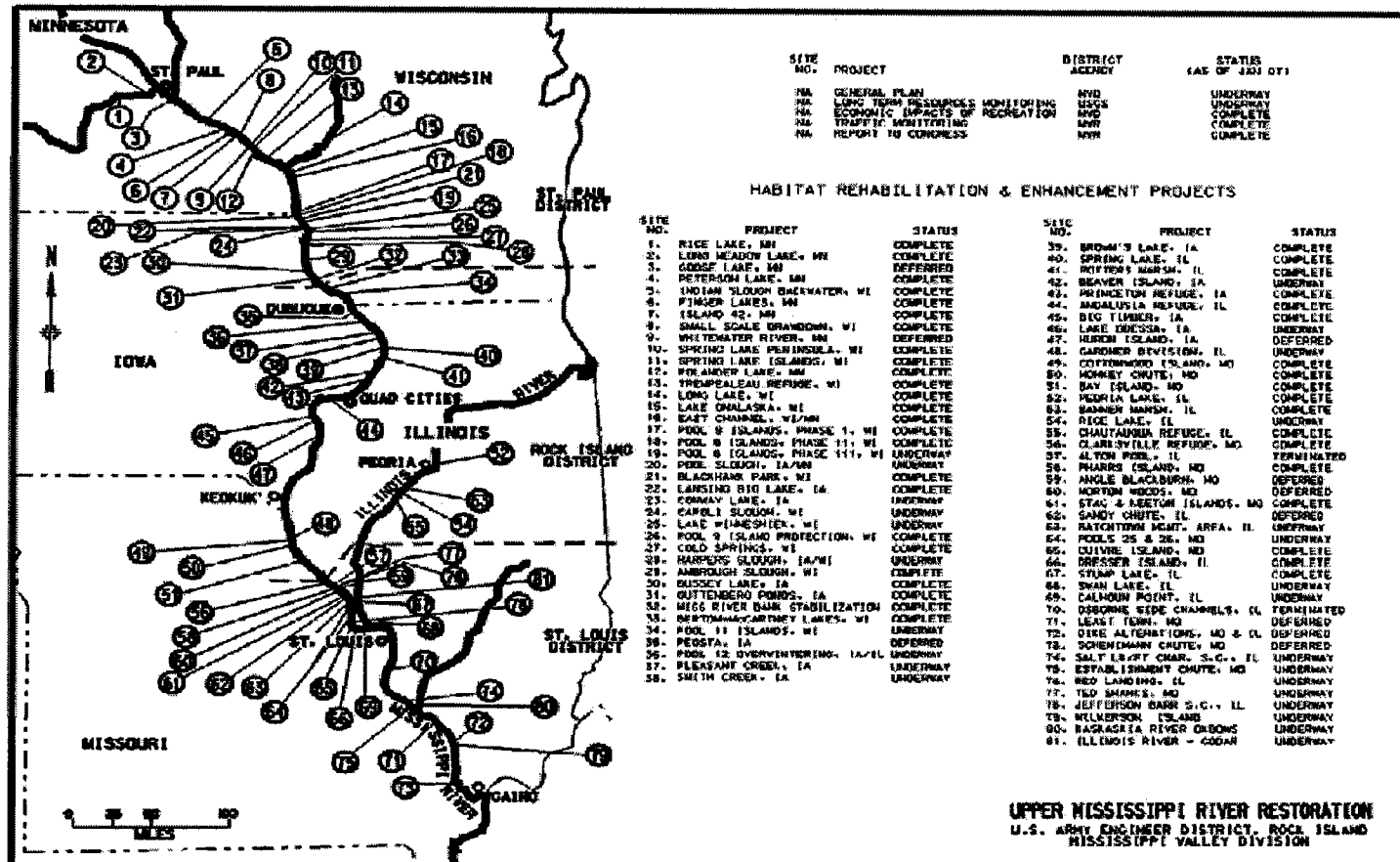
The non-Federal sponsors have agreed to make all required payments concurrently with project construction.

STATUS OF LOCAL COOPERATION: A Project Cooperation Agreement is required only for projects that are not located on lands managed as a national wildlife refuge.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of \$766,195,000 is the same as the latest estimate presented to Congress (FY 2007).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: National Environmental Policy Act compliance is accomplished prior to implementation of each individual project.

OTHER INFORMATION: Funds to initiate construction were appropriated in FY 1985. The Water Resources Development Act of 1999, P.L. 106-53, amends the previous authority to increase annual appropriation limits available to the project; requires submission of a report to Congress on a 6 year cycle which began in December 2004 to evaluate projects, accomplishments, systemic habitat needs, and identifies any needed changes to the project authorization; and authorizes an independent technical review committee.



ENVIRONMENT

CONSTRUCTION

NORTHWESTERN DIVISION

APPROPRIATION TITLE: Construction, Environment, Fiscal Year 2008

PROJECT: Lower Columbia River Ecosystem Restoration, Oregon and Washington – (Continuing)

LOCATION: The Lower Columbia River extends from the mouth of the Columbia River to river mile (RM) 145 at Bonneville Lock and Dam. The river divides the states of Oregon and Washington throughout this area.

DESCRIPTION: The study areas include the estuary of the Columbia River and all of the tributaries of the Columbia River that are tidally influenced, which includes the Willamette River up to Willamette Falls. Justification for the project is based on non-monetary quantitative change in fish and wildlife habitat units and other biological benefits. Since benefits are non-monetary, a benefit-to-cost ratio has not been prepared. A comprehensive conservation and management plan was developed for the Lower Columbia River under Section 320 of the Federal Water Pollution Control Act (33 U.S.C. 1330).

AUTHORIZATION: Section 536 of the Water Resources Development Act of 2000 (P. L. 106-541, dated 11 December 2000)

REMAINING BENEFIT - REMAINING COST RATIO: N/A (Environmental restoration project costs are not subject to formal benefit calculations.)

TOTAL BENEFIT-COST RATIO: N/A

BASIS OF BENEFIT-COST RATIO: N/A

SUMMARIZED FINANCIAL DATA:

		ACCUM % OF EST FED COST	STATUS (1 Jan 2007)	PERCENT COMPLETE	COMPLETION SCHEDULE
Estimated Federal Cost	\$20,000,000		Entire Project	26%	To be determined
Estimated Non-Federal Cost	4,000,000				
Cash Contributions	TBD				
Other Costs	TBD				
Total Estimated Project Cost	\$24,000,000				
Allocations to 30 September 2004	1,762,000				
Allocation for FY 2005	1,452,000				
Allocation for FY 2006	1,978,000				
Conference Allowance for FY 2007					
Allocation for FY 2007	2,200,000 *				
Allocations through FY 2007	7,392,000	37%			
Allocation Requested for FY 2008	1,000,000	42%			
Programmed Balance to Complete after FY 2008	11,608,000				
Unprogrammed Balance to Complete after FY 2008	0				

PHYSICAL DATA:

Types of projects will include, but not be limited to:  
a) creation and restoration of shallow water habitat;  
b) restoration of wetlands;  
c) improvements to fish passage;  
d) restoration of floodplain functions and other actions to restore the estuary ecosystem.

\* Assumed allocation. Final, actual allocation yet to be determined.

JUSTIFICATION: NOAA Fisheries has identified the Columbia River Estuary as playing a vital role in rebuilding the productivity of Columbia River Basin salmon and steelhead listed under the Endangered Species Act. Over time, this basin has experienced considerable changes in water resource needs and uses. In addition, significant environmental degradation has occurred within the lower Columbia system. Modification of the system by human activities has led to a marked change in the hydrologic regime, and caused pollution and substantial losses of in-stream, riparian and wetland habitats, and a concomitant reduction in fish and wildlife resources. Flood control, water quality, navigation, water-related infrastructure, and ecosystem restoration needs have all been evaluated on a case-by-case basis. Twelve different populations of anadromous salmonids that reproduce in the Columbia River Basin have been listed as threatened or endangered and they all use the estuary to some extent. Such listings have broad implications to existing water resource uses, and future developments. The updated proposed action for the Federal Columbia River Power System (FCRPS) includes actions calling for planning and restoration efforts in the Columbia River estuary to help avoid jeopardy for these listed species. Historic losses of 52,000 acres of wetland/marsh habitats, 13,800 acres of riparian forest habitat and 27,000 acres of forested wetland habitat downstream of Portland have significantly impacted this ecosystem's ability to produce and sustain fish and wildlife resources. Much of this wetland loss can be attributed to the 84,000 acres encompassed by diking districts and the 20,000-acre increase in urban development that has occurred along the lower Columbia River.

The implementation of the Lower Columbia River element of this section 536 legislation will serve as the catalyst to bring together and implement current efforts by a number of governmental and private organizations including the National Estuary Program, six state agencies from Oregon and Washington, four Federal agencies, recreation, ports, industry, agriculture, labor, commercial fishing, environmental interests and citizens to identify and cost share restoration projects.

NON-FEDERAL COSTS: The authorization provides that studies shall be subject to cost sharing in accordance with Section 105 of WRDA 1986 and that restoration projects shall be cost shared at 35% by non-Federal interests, that nonfederal interests shall provide all lands, easements, rights-of-way, dredged material disposal areas, and relocations necessary for the projects to be carried out and that in-kind contributions can not exceed 50% of the non-Federal share. However, the Federal share of projects carried out on Federal lands shall be 100%.

STATUS OF LOCAL COOPERATION: Project Cooperation Agreements for individual restoration sites are prepared/executed as they are identified.

Crims Island Site: A Memorandum of Agreement was executed in May 2004 with U.S. Fish and Wildlife Service.

Columbia River Riparian Site: A Memorandum of Understanding was executed in February 2006 with U.S. Dept. of Agriculture (Forest Service).

Julia Butler Hanson Site: A Memorandum of Agreement is scheduled to be executed in August 2007 with U.S. Fish and Wildlife Service.

Fort Columbia Site: A Memorandum of Agreement is scheduled to be executed in August 2007 with Washington Dept. of Transportation.

FISCAL YEAR 2007: The allocated amount of \$2,200,000 will be applied in the Columbia River as follows:

Planning, engineering and design.....	\$ 700,000
Award and fully fund Phase I construction for the Julia Butler Hanson Site.....	\$1,500,000

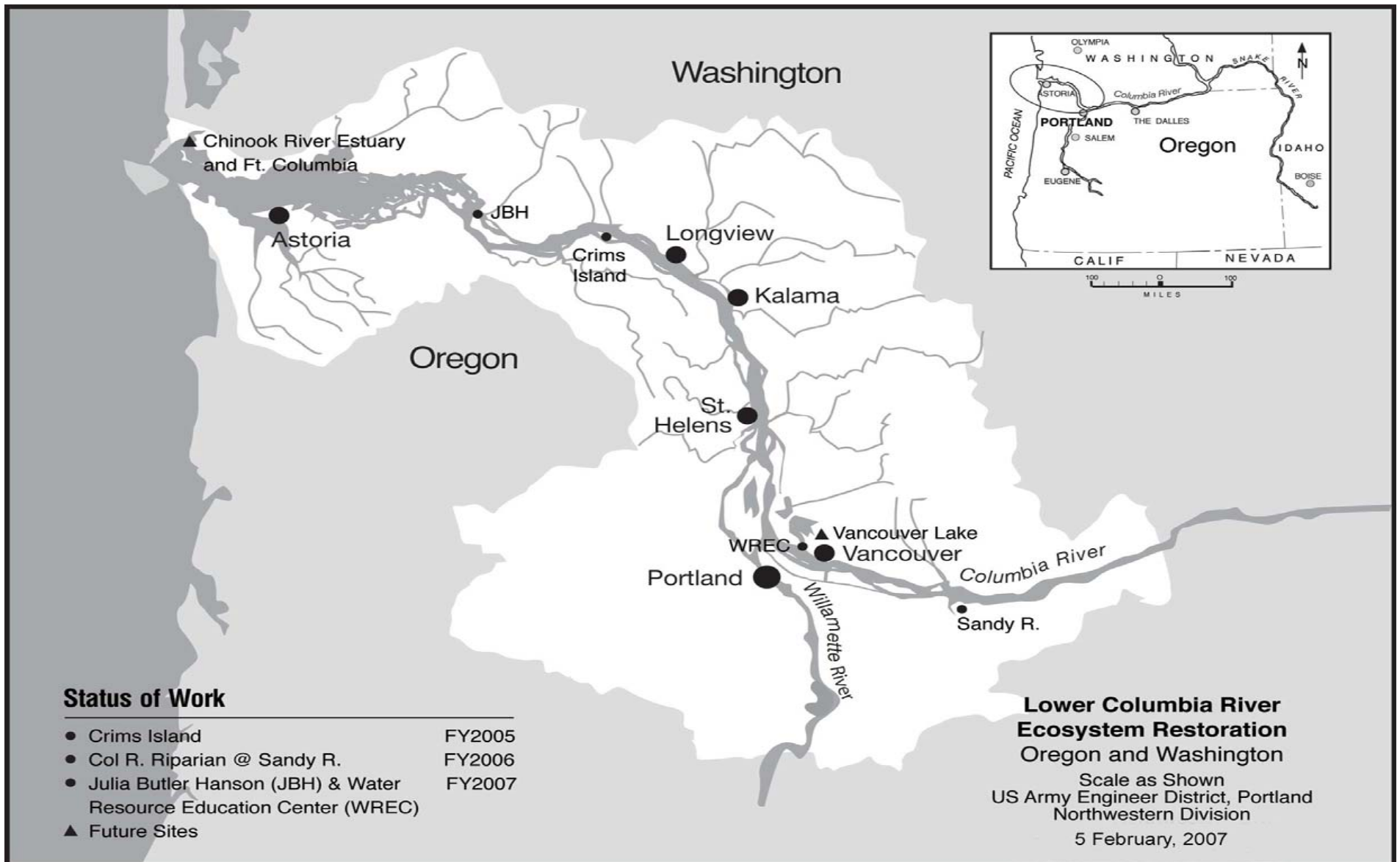
FISCAL YEAR 2008: The requested amount of \$1,000,000 will be applied in the Columbia River as follows:

Planning, engineering and design.....	\$ 200,000
Award and fully fund construction for the Fort Columbia Site.....	\$ 800,000

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of \$20,000,000 is unchanged from last presented to Congress (FY 2007).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: An Environmental Impact Statement has not been prepared. NEPA documentation for individual restoration sites are prepared as they are identified.

OTHER INFORMATION: The Lower Columbia River and Tillamook Bay Ecosystem Restoration, Oregon and Washington authority (Section 536 of WRDA 2000) was created in part to help the Corps meet the needs of listed salmon and steelhead using the Columbia River estuary and is one of the primary authorities for meeting Biological Opinion (BiOp) requirements. Estuary habitat improvement continues to be an important element of the draft proposed action being discussed in the remand process to develop a new BiOp for the FCRPS. Types of projects will include, but not limited to, creation and restoration of shallow water habitat, restoration of wetlands, improvements to fish passage, and restoration of floodplain functions and other actions to restore the estuary ecosystem. Also, the Corps is undertaking a feasibility study, Lower Columbia River Ecosystem Restoration, WA & OR, with a broader geographical scope than this project, and addressing ecosystem issues in addition to salmon recovery.



ENVIRONMENT  
CONSTRUCTION  
SOUTH ATLANTIC DIVISION



APPROPRIATION TITLE: Construction, General – Environmental Restoration

PROJECT: South Florida Everglades Ecosystem Restoration, Florida (Continuing)

LOCATION: The South Florida Everglades Ecosystem Restoration Program stretches from the Southern Orlando area southward across the Everglades, the Florida Keys and the contiguous and near-shore waters of South Florida. This project encompasses an area of approximately 18,000 square miles, which includes all or part of 18 counties in the southeast part of the State of Florida. Principle areas are the Kissimmee River Basin, Lake Okeechobee, Everglades Agricultural Area, Upper East Coast, Lower East Coast, Big Cypress Basin, Water Conservation Areas, Everglades National Park, Southwest Florida, Florida Bay and the Florida Keys.

DESCRIPTION: The South Florida Everglades Ecosystem Restoration Program includes the Central and Southern Florida Project (C&SF), the Kissimmee River Restoration Project, and the Everglades and South Florida Restoration Projects, which were previously budgeted separately. In addition, this request incorporates a share of the federal costs of the Modified Water Deliveries Project. The consolidated budget request herein includes the following separable elements: West Palm Beach Canal, South Dade County, Comprehensive Everglades Restoration Plan, and Manatee Pass Thru Gates (previously separable elements under the C&SF Project); East Coast Canal Structures, Western C-11 Basin, Seminole Big Cypress, Ten Mile Creek, Tamiami Trail (Western Segment), Florida Keys Carrying Capacity, Lake Okeechobee Water Retention, Southern CREW, and Lake Trafford (previously separable elements under the Everglades and South Florida Ecosystem Restoration Project); Kissimmee River Project; and the Modified Water Deliveries to Everglades National Park Project. The objective of the South Florida Everglades Ecosystem Restoration Program is to restore, protect and preserve the south Florida ecosystem including the Everglades, while providing for other water related needs of the regions.

The C&SF Project includes 1,000 miles of canals, 720 miles of levees and several hundred water control structures, while providing water supply, flood protection, water management and other benefits to south Florida.

The Everglades and South Florida Ecosystem Restoration Project separable elements must meet the following criteria: be within the C&SF Project and its near shore waters; provide immediate, independent, and substantial ecosystem restoration, protection, and preservation benefits; cost less than \$25 million in Federal funds, be consistent with the Governor's Commission's Conceptual Plan; and have a local sponsor to contribute a minimum of 50% of the total project cost.

The Kissimmee River basin is approximately 3,000 square miles in size and has two component parts; the upper basin, referred to as the Headwaters Revitalization, and the lower basin, referred to as the Kissimmee River Restoration. The upper basin portion of the project consists of water regulation schedule modifications, canal and structure improvements, and land acquisition. This will result in environmental benefits in the upper chain of lakes and in the lower basin. More natural fluctuations of water levels will enhance the peripheral marshes of the lakes. Reestablishing a more natural timing of flows to the lower basin will result in restoration of the Kissimmee River ecosystem. Structural improvements will include enlargements of existing canals and existing water control structures. The Kissimmee River project is addressing restoration of natural flooding of the floodplain to reestablish historic wetland conditions. Construction will include backfilling approximately 22 miles of the C-38 canal, excavating approximately 9 miles of new river channel, and removing 2 water control structures and locks in the backfilled sections. The project also includes acquisition of fee title for lands within the 5-year-floodplain and acquisition of flowage easements for lands between the five-year-flood line and the 100-year-flood line.

Division: South Atlantic

District: Jacksonville

South Florida Everglades Ecosystem Restoration

03 January 2007

DESCRIPTION CONT:

The Modified Water Deliveries to Everglades National Park (MWD) involves construction of modifications to the C&SF Project water management system and related operational changes to provide improved water deliveries to Everglades National Park (ENP). The project consists of structural features with the intended purpose of restoring conveyance between Water Conservation Areas (WCA) north of ENP and the Shark River Slough within the Park. It will also provide flood mitigation to the 8.5 Square Mile Area (SMA), a residential area adjacent to the Park expansion boundary in East Everglades. For management purposes, the project is described in four categories: 8.5 SMA, Conveyance and Seepage Control, Tamiami Trail (Eastern Segment), and Project Implementation Support (ENP requirements, Experimental Program, Cape Sable Seaside Sparrow Emergency, Combined Structural and Operational Plan, Environmental Monitoring, and Osceola Camp).

AUTHORIZATION: Flood Control Acts of 1948, 1954, 1960, 1962, 1965, and 1968; Authorization in 1970 under Section 201 of the Flood Control Act of 1965, and the Water Resources Development Acts of 1986, 1988, 1990, 1992, 1996, 1999, and 2000. The Modified Water Deliveries to Everglades National Park was authorized under the Everglades Expansion Act of 1989 (PL 101-229). PL 101-229 specifically directs the Secretary of the Army, in consultation with the Secretary of Interior, to construct modifications to the C&SF Project to improve water deliveries to ENP.

REMAINING BENEFIT - REMAINING COST RATIO: NA

TOTAL BENEFIT - COST RATIO: NA

INITIAL BENEFIT - COST RATIO: NA

BASIS OF BENEFIT - COST RATIO: NA

SUMMARIZED FINANCIAL DATA			ACCUM PCT OF EST FED COST	STATUS (1 Jan 2007)	PCT CMPL	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost (CoE)		3,749,163,000		Misc. Completed Works	100	Oct 1992
Programmed Construction	3,130,766,000			Everglades Restoration	25	Indefinite
Unprogrammed Construction	618,397,000			West Palm Beach	98	TBD
Estimated Federal Cost (OFA)		298,155,000		South Dade County	45	TBD
Programmed Construction	298,155,000			Manatee Pass Gates	75	TBD
				E Coast Canal	100	Sep 2004
				Western C-11	100	Sep 2005
Estimated Non-Federal Cost		2,949,100,000		Seminole Big Cypress	30	TBD
Programmed Construction	2,620,784,000			Ten Mile Creek	100	Dec 2005
Cash Contributions	272,098,000			Tamiami Trail (Western)		NA
Other Costs	2,348,686,000			Florida Keys Carrying	100	Dec 2004
Unprogrammed Construction	328,316,000			Lake Okeechobee	100	Apr 2006
Cash Contributions	176,860,000			Southern CREW		NA
Other Costs	151,456,000			Lake Trafford		NA
Estimated Unallocated Cost		15,000,000		Kissimmee	43	TBD
Programmed Construction	15,000,000			Mod Water Del	42	TBD
Total Estimated Programmed Construction Cost		6,064,705,000				
Total Estimated Unprogrammed Construction Cost		946,713,000				
Total Estimated Project Cost		7,011,418,000	1/			
Allocations to 30 September 2004		852,623,000		Entire Project		
Allocations for 2005		96,678,000				
Allocations for 2006		130,840,000			27	Indefinite
Conference Allowance for 2007		164,000,000				
Allocation for 2007 *		163,326,000	2/			
Allocations through 2007		1,243,467,000	33%			
Allocation Requested for 2008		162,400,000	37%			
Programmed Balance to Complete after 2008		1,724,899,000				
Unprogrammed Balance to Complete after 2008		618,397,000				

\* Assumed allocation. Final, actual allocations yet to be determined.

1/ Includes only authorized features for CERP.

2/ Reflects a decrease in allocation in the amount of \$674,000 of FY 2007 funding to the Upper St Johns River Project.

Division: South Atlantic

District: Jacksonville

South Florida Everglades Ecosystem Restoration

03 January 2007

PHYSICAL DATA

Pumping Plants (Number)	38	Locks (Number)	25
Floodway Control & Diversion Structures (Number)	235	Canals (Miles)	999
Relocations-Highways (Bridges)	2	Levees (Miles)	720
Relocations-Railroads (Bridges)	58	Bridge	7
Canals - New River Channel	9		
Water Control Structures Removal	2		

JUSTIFICATION:

The Central and Southern Florida Project: The Central and Southern Florida project was originally authorized and designed as a flood control project in response to the maximum flood of record in 1947. Existing damages, without the project, were \$59,693,000 (\$366,903,000 at 1 October 1989 price levels). The 1947 flood frequency averages 1 in 25 years over the project area, with an average duration of 70 days. Minor floods occur almost yearly in the project area and major floods occur frequently. This situation is aggravated by wet antecedent conditions followed by heavy seasonal rainfall. The average degree of protection provided by the completed project is about a 10-year flood frequency protection. Approximately 2,853,700 acres are protected. This encompasses 2,765,100 agricultural acres and 88,600 urban acres. The present value of property subject to flood damages is about \$12.3 billion. Property types include residential, commercial, industrial, public, and agricultural.

Average annual damages without the project would be \$110,580,000 and \$22,536,000 with the project. Damages attributable to urban property are 16.7 percent and 83.3 percent are attributable to rural property. The proportion of average annual damages prevented is 36.8 percent to existing development and 63.2 percent to future development.

Under Public Law 90-483 (River and Harbor Act of 1968), additional project features for the purpose of water supply were added to the Central and Southern Florida project. The storage capacity of the entire project is 2,953,000 average annual acre-feet divided into approximately 1,600,000 acre-feet for urban use by 2020 and 740,000 acre-feet for agricultural use by 2020. The Everglades National Park receives virtually its entire source of water (other than direct rainfall) from the Central and Southern Florida Project. The pumping rate for irrigation of 590 square miles would yield approximately 917,850 acre-feet per year for agricultural use. Recurrent drought conditions with resultant low flows require supplemental irrigation to ensure adequate crops yields.

JUSTIFICATION CONT':

Average annual benefits are as follows:

Annual Benefits	Amount
Flood Control	235,213,000
Municipal and Industrial Water Supply	25,664,000
Agricultural Water Supply	27,614,000
Recreation	11,109,000
Fish and Wildlife	238,000
Area Redevelopment	3,012,000
Total	302,850,000

The Modified Water Deliveries to Everglades National Park and South Dade County (C-111) Projects: Public Law 90-483 and Public Law 101-229 (Everglades National Park Protection and Expansion Act) has authorized modifications to the project for environmental restoration in the C-111 basin and NE Shark River Slough. The South Dade County effort will restore natural hydrologic conditions in Taylor Slough within Everglades National Park for the purpose of restoring the historic diversity and abundance of the native flora and fauna. Modified Water Deliveries will restore natural hydrological flows to Shark River Slough at the northeastern corner of the Park.

Everglades and South Florida Ecosystem Restoration Project: WRDA 1996 authorized implementation of the Everglades and South Florida Ecosystem Restoration Project in order to provide immediate, independent, and substantial ecosystem restoration, protection and preservation benefits. The projects were justified on the basis of those benefits. Florida Keys Carrying Capacity Study, East Coast Canal Structure and Western C-11, Ten Mile Creek and Lake Okeechobee Water Retention and Phosphorus Removal projects have been completed.

Kissimmee River Restoration Project: Local water resource development of the Kissimmee River began in the late 1800's. In the 1960's, the river was channelized as part of the comprehensive Central and Southern Florida Project. Although the project has provided continuing navigation and effective flood control, it also resulted in long-term degradation of the natural ecosystem. The 103-mile river that historically meandered across and inundated about 35,000 acres of wetlands over a broad flood plain was reduced to a 56-mile canal that has successfully contained almost all flows since its completion. The channelization coupled with the modifications of the Lower Basin tributary watersheds and efficient control of floodwaters and regulation of inflows from the Upper Basin significantly altered hydrologic characteristics of the ecosystem. Project formulation and scoping was based on the most cost effective plan which would meet fish and wildlife resources objectives for restoring ecological integrity. Completion of the project will result in the restoration of 52 miles of river; 27,000 acres of wetlands; improved water quality characteristics for the Kissimmee River; and restored conditions for over 300 fish and wildlife species. A Reevaluation Study will be initiated in FY08 to determine the Federal interest in expanding the geographic scope of the Kissimmee River Restoration Project authorized under Water Resources Development Act (WRDA) of 1992 (section 101) to achieve additional aquatic ecosystem benefits and reduce peak flows to Lake Okeechobee. The features to be reevaluated are authorized as part of the project, but are currently authorized to be carried out at 100 percent non-Federal expense.

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FISCAL YEAR 2007: Fiscal Year 2007 funds for Kissimmee River will be used to complete construction on the first contract for the Reach 4 backfill and Spillway S-65, continue construction on Istokpoga Canal, continue construction on Spillway S-68, award second backfill contract for Reach 4, and continue plans and specifications on future construction.

Funding for the Everglades & South Florida program will be used to continue construction on the Seminole Big Cypress construction contract.

Funding for the Central and Southern Florida project include: Comprehensive Everglades Restoration Plan (CERP): Continue Project Management Plans (PMP); Project Implementation Reports (PIR); plans and specifications on Indian River Lagoon South, Picayune Strand, Site 1 Impoundment, Everglades Agricultural Area Part 1; continue installation, testing and design on the Pilot projects; continue system wide monitoring. West Palm Beach Canal: continue Periphyton Stormwater Treatment Area (PSTA) contract and design for L-40. South Dade County: continue the design and construction for S-331 Command Building and design of buffer levee. Manatee Pass Thru Gates: Complete construction on acoustic devices at S-78 (Ortona Lock).

Funding for the Modified Water Deliveries to Everglades National Park will be used for ongoing work on the 8.5 Square Mile Area, continue design of Tamiami Trail (Eastern Segment), and continue design on Conveyance and Seepage features.

FISCAL YEAR 2008: The requested amount will be applied as follows:

Central and Southern Florida

Continue Construction for PSTA monitoring for West Palm Beach Canal	1,548,000
Complete West End Improvement Construction Contract for West Palm Beach Canal	2,000,000
Complete Grading Construction Contract for West Palm Beach Canal	3,947,000
Continue Construction of locks, channels, and canals for Manatee Pass-Through Gates	1,991,000
Continue Construction of L-31W Borrow Canal Backfill and Tie back Levee, S-332D Tie Back Levee for South Dade County	9,941,000
Continue Construction of Pump Station S-332C for South Dade County	2,000,000
Feasibility phase of the Central and Southern Florida Project (CERP)	1,656,000
Engineering and Design, to include installation and Testing of Pilot Projects (CERP)	8,000,000
Engineering and Design for Comprehensive Everglades Restoration Plan (CERP), includes Adaptive Assessment and Monitoring	54,344,000
Engineering and Design for South Dade County	3,000,000
Engineering and Design for Manatee Pass-Through Gates	350,000
Construction Management	1,811,000
 Subtotal	 \$ 90,588,000

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FISCAL YEAR 2008 CON'T

Kissimmee

Continue Construction on Reach 4 backfill contract	\$ 8,690,000
Complete Construction on the Istokpoga Canal	2,796,000
Complete Construction of Spillway S-68	2,391,000
Continue Construction of Pool D Flood Mitigation	8,178,000
Initiate Reevaluation Study	750,000
Planning, Engineering, and Design/Monitoring	7,194,000
Construction Management	2,503,000
 Subtotal	 \$32,502,000

Everglades and South Florida Ecosystem Restoration

Complete construction of channels and canals	\$ 3,918,000
Planning, Engineering and Design	59,000
Construction Management	333,000
 Subtotal	 \$4,310,000

Modified Water Deliveries to Everglades National Park

Award Construction Contract on Tamiami Trail (Eastern Segment)	26,703,000
Engineering and Design	4,670,000
Project Implementation Support	1,109,000
Construction Management	2,518,000

Subtotal \$35,000,000

Total \$162,400,000

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NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in specific authorizing legislation and the Water Resources Development Act of 1986, 1996 and 2000 as applicable, the non-Federal sponsor must comply with the requirements listed below:

	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Requirements of Local Cooperation		
West Palm Beach Canal		
Provide lands, easements, rights of way, and dredged material disposal areas.	11,129,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	1,400,000	
Pay 12.8 percent of the separable costs allocated to flood control and bear all costs of operation, maintenance, repair, rehabilitation, and replacement of facilities.	20,171,000	289,800
<b>Total Non-Federal Costs</b>	<b>32,700,000</b>	<b>289,800</b>
South Dade County		
Provide lands, easements, rights of way, and dredged material disposal areas.	122,120,000	
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	330,000	
Pay one-half of the cost of the project assigned to flood control and bear all costs of operation, maintenance, repair, rehabilitation, and replacement of flood control facilities.	62,550,000	845,000
<b>Total Non-Federal Costs</b>	<b>185,000,000</b>	<b>845,000</b>



NON-FEDERAL COST CON'T:

Manatee Pass-Through Gates	
Pay applicable percentage based upon authorized cost share for each particular project.	2,200,000
Total Non-Federal Costs	2,200,000

Requirements of local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation, and Replacement Costs
Comprehensive Everglades Restoration Plan (CERP)		
Provide lands, easements, rights of way, and dredged material disposal areas.	639,100,000	
Pay one-half of the cost of the project assigned to flood control and bear one half of the cost of operation, maintenance, repair, rehabilitation, and replacement of (CERP) facilities.	1,241,100,000	
Total Non-Federal Costs	1,880,200,000	

Completed C&SF Works	
Provide lands, easements, rights of way, and modify or relocate buildings, utilities, roads, bridges and other facilities.	176,459,000
Cash Contribution/WIK	232,241,000
Total Non-Federal Costs Total	408,700,000

NON-FEDERAL COST CON'T

	Payments During Construction, and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation, and Replacement Costs
Kissimmee		
Provide; with credit toward the non-Federal 50 percent share of project costs; all lands, easements, rights of way, and excavated or dredged material disposal areas.	\$ 197,896,000	
Modify or relocate; with credit toward the non-Federal 50 percent share of project costs; utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	7,042,000	
Pay 50 percent of the costs allocated to environmental restoration, and pay all costs of operation, maintenance, repair, rehabilitation, and replacement.	86,562,000	
<b>Total Non-Federal Costs</b>	<b>291,500,000</b>	

	Payments During Construction, and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation, and Replacement Costs
East Coast Canal Structures		
Provide; with credit toward the non-Federal 50 percent share of project costs; all lands, easements, rights of way, and excavated or dredged material disposal areas.	0	
Modify or relocate; with credit toward the non-Federal 50 percent share of project costs; utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	0	
Pay 50 percent of the costs allocated to environmental restoration, and pay all costs of operation, maintenance, repair, rehabilitation, and replacement.	1,796,000	150,000
<b>Total Non-Federal Costs</b>	<b>1,796,000</b>	<b>150,000</b>

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	Payments During Construction, and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation, and Replacement Costs
Western C-11 Basin		
Provide; with credit toward the non-Federal 50 percent share of project costs; all lands, easements, rights of way, and excavated or dredged material disposal areas.	0	
Modify or relocate; with credit toward the non-Federal 50 percent share of project costs; utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	0	
Pay 50 percent of the costs allocated to environmental restoration, and pay all costs of operation, maintenance, repair, rehabilitation, and replacement.	8,992,000	310,000
<b>Total Non-Federal Costs</b>	<b>8,992,000</b>	<b>310,000</b>

	Payments During Construction, and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation, and Replacement Costs
Seminole Big Cypress		
Provide; with credit toward the non-Federal 50 percent share of project costs; all lands, easements, rights of way, and excavated or dredged material disposal areas.	7,500,000	
Modify or relocate; with credit toward the non-Federal 50 percent share of project costs; utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	0	
Pay 50 percent of the costs allocated to environmental restoration, and pay 50% costs of operation, maintenance, repair, rehabilitation, and replacement.	20,369,000	600,000
<b>Total Non-Federal Costs</b>	<b>27,869,000</b>	<b>600,000</b>

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NON-FEDERAL COST CON'T

	Payments During Construction, and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation, and Replacement Costs
Ten Mile Creek		
Provide; with credit toward the non-Federal 50 percent share of project costs; all lands, easements, rights of way, and excavated or dredged material disposal areas.	5,074,000	
Modify or relocate; with credit toward the non-Federal 50 percent share of project costs; utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	0	
Pay 50 percent of the costs allocated to environmental restoration, and pay all costs of operation, maintenance, repair, rehabilitation, and replacement.	15,507,000	660,000
<b>Total Non-Federal Costs</b>	<b>20,581,000</b>	<b>660,000</b>

	Payments During Construction, and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation, and Replacement Costs
Tamiami Trail (Western Segment)		
Provide; with credit toward the non-Federal 84 percent share of project costs; all lands, easements, rights of way, and excavated or dredged material disposal areas.	0	
Modify or relocate; with credit toward the non-Federal 84 percent share of project costs; utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	0	
Pay 84 percent of the costs allocated to environmental restoration, and pay all costs of operation, maintenance, repair, rehabilitation, and replacement.	13,884,000	250,000
<b>Total Non-Federal Costs</b>	<b>13,884,000</b>	<b>250,000</b>

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NON-FEDERAL COST CON'T

	Payments During Construction, and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation, and Replacement Costs
Florida Keys Carrying Capacity		
Provide; with credit toward the non-Federal 50 percent share of project costs; all lands, easements, rights of way, and excavated or dredged material disposal areas.	0	
Modify or relocate; with credit toward the non-Federal 50 percent share of project costs; utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	0	
Pay 50 percent of the costs allocated to environmental restoration, and pay all costs of operation, maintenance, repair, rehabilitation, and replacement.	3,000,000	
<b>Total Non-Federal Costs</b>	<b>3,000,000</b>	

	Payments During Construction, and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation, and Replacement Costs
Lake Okeechobee Water retention & Phosphorus Removal		
Provide; with credit toward the non-Federal 50 percent share of project costs; all lands, easements, rights of way, and excavated or dredged material disposal areas.	3,077,000	
Modify or relocate; with credit toward the non-Federal 50 percent share of project costs; utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	0	
Pay 50 percent of the costs allocated to environmental restoration, and pay all costs of operation, maintenance, repair, rehabilitation, and replacement.	8,120,000	364,000
<b>Total Non-Federal Costs</b>	<b>11,197,000</b>	<b>364,000</b>

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NON-FEDERAL COST CON'T

	Payments During Construction, and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation, and Replacement Costs
<b>Southern CREW</b>		
Provide; with credit toward the non-Federal 50 percent share of project costs; all lands, easements, rights of way, and excavated or dredged material disposal areas.	29,000,000	
Modify or relocate; with credit toward the non-Federal 50 percent share of project costs; utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	0	
Pay 50 percent of the costs allocated to environmental restoration, and pay all costs of operation, maintenance, repair, rehabilitation, and replacement.	4,040,000	175,000
<b>Total Non-Federal Costs</b>	<b>33,040,000</b>	<b>175,000</b>

	Payments During Construction, and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation, and Replacement Costs
<b>Lake Trafford</b>		
Provide; with credit toward the non-Federal 95 percent share of project costs; all lands, easements, rights of way, and excavated or dredged material disposal areas.	1,342,000	
Modify or relocate; with credit toward the non-Federal 95 percent share of project costs; utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	0	
Pay 95 percent of the costs allocated to environmental restoration, and pay all costs of operation, maintenance, repair, rehabilitation, and replacement.	27,099,000	70,000
<b>Total Non-Federal Costs</b>	<b>28,441,000</b>	<b>70,000</b>

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OTHER FEDERAL AGENCIES (OFA)

	Payments During Construction, and Reimbursements	Annual Operation, Maintenance, Repair Rehabilitation, and Replacement Costs
Modified Water Deliveries to Everglades National Park		
Provide; with credit toward Dol's share of the project costs; all lands, easements, rights of way, and excavated or dredged material disposal areas.	\$ 108,295,000	
Pay share of project costs.	TBD	
Total OFA Costs	TBD	

\*\* Due to escalation of construction prices for labor and materials, costs on this project are currently being revised with the expectation of a significant increase to the total project cost. Future cost share of this project beyond FY 2008 is TBD.

STATUS OF LOCAL COOPERATION: Assurances of local cooperation have been accepted from the local sponsor, the South Florida Water Management District, for all works authorized under the Central and Southern Florida project. The Project Cooperation Agreement for the South Dade County separable element was executed with the South Florida Water Management District in January 1995. The Design Agreement for the South Florida Water Management District segment of the Comprehensive Everglades Restoration Plan (CERP) was signed on 12 May 2000. The design agreement for Lake Park was signed on 17 January 2003 with Lee County and for Winsberg Farm on 03 January 2002 with Palm Beach County. Additional Design Agreements for CERP features are scheduled to be executed with Seminole Tribe of Florida, the Miccosukee Tribe of Florida, the Florida Department of Environmental Protection and Miami-Dade County.

The Kissimmee Project Cooperation Agreement reflects the cost sharing outlined in House Document 102-286 dated April 7, 1992 was executed with the South Florida Water Management District (SFWMD) in March 1994. The local sponsor will be required to provide a cash contribution of 11.4% (reflecting credit for lands, easements, rights of way, relocations, and disposal areas) of construction costs.

A Design Agreement for a Reevaluation Study is scheduled to be executed September 2007 with the South Florida Water Management District as part of the Kissimmee element of the Everglades Program.

PCA's were executed 07 January 2000 for East Coast Canal Structures, Tamiami Trail Culverts, Western C-11, Seminole Big Cypress, Southern Crew, Lake Okeechobee Water Retention, 10-Mile Creek, and Lake Trafford. A PCA was executed Dec 1998 for Florida Keys Carrying Capacity. Local sponsors include: South Florida Water Management District (SFWMD), Seminole Tribe of Florida, and the Florida Department of Community Affairs (DCA).

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PCA's were executed with the South Florida Water Management District September 1994 and July 2001 for the Modified Water Deliveries Project to implement modifications to the C&SF Project to improve water deliveries into Everglades National Park.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps cost estimate for the Corps' share of the overall restoration effort) cost estimate of \$3,749,163,000 is an increase of \$537,120,000 from the latest estimate (\$3,212,043,000) submitted to Congress (FY 2007). The changes include the following items:

Item	Amount
Price Escalation on Construction Features	\$9,350,000
Design Changes	129,414,000
Schedule Changes	59,519,000
Additional Functions Added under General Authority (CERP AA&M and Programmatic Activities as addressed in the 2005 Report to Congress)	338,837,000
Total	537,120,000

#### STATUS OF ENVIRONMENTAL IMPACT STATEMENT:

The latest Programmatic Environmental Impact Statement for Central and Southern Florida project was the Comprehensive Review Study in April 1999. NEPA documents have also been completed for Indian River Lagoon South, Picayune Strand and Site 1.

The final Environmental Impact Statement for the Kissimmee project was filed with CEQ on April 5, 1992. A supplement to the Environmental Impact Statement was integrated into the Upper Basin project modification report.

Appropriate NEPA documents were prepared and finalized prior to execution of the PCA for East Coast Canal Structures, Tamiami Trail Culverts (Western Segment) , Western C-11, Seminole Big Cypress, Southern Crew, Lake Okeechobee Water Retention, 10-Mile Creek, and Lake Trafford. A PCA was executed Dec 1998 for the Florida Keys Carrying Capacity Study.



OTHER INFORMATION: Funds to initiate preconstruction planning and construction on the original Central and Southern Florida project were appropriated in FY 1950.

The Everglades National Park Protection and Expansion Act, signed 13 December 1989, authorized construction of structural works required for improved water deliveries to Shark River Slough in Everglades National Park, construction of flood mitigation works for the residential area in the East Everglades, and acquisition of 107,600 acres of privately owned wetlands in the East Everglades. The Department of the Interior and the State of Florida acquired the lands included in the ENP expansion area and the Secretary of the Army has responsibility for constructing all project modifications. Under the initial implementation plan, funds were appropriated to the National Park Service and transferred to the Corps of Engineers for this purpose. In FY2006, Congress provided funding for implementation of this project to both the National Park Service and the Corps of Engineers.

Modifications to the C&SF, South Dade County separable element to improve the natural resources in Taylor Slough in Everglades National Park have been funded through the Corps Central and Southern Florida project appropriation.

The Kissimmee Restoration Project was authorized by the Water Resources Development Act of 1992. The project cooperation agreement was executed in March 1994. Engineering and design and construction are underway. Construction was initiated in Fiscal Year 1997.

The Water Resources Development Act of 1992 authorizes the Chief of Engineers to review the Central and Southern Florida project to determine whether modifications to the existing project are advisable at the present time due to significantly changed physical, biological, demographic, or economic conditions, with particular reference to modifying the project or its operation for improving the quality of the environment, improving protection of the aquifer, and improving the integrity, capability, and conservation of urban water supplies affected by the project or its operation. The central organizing theme of the Comprehensive Restudy was the restoration of the South Florida ecosystem while accommodating other demands for water and related land resources in south Florida. Recognizing the complexity of ecological restoration and the extensive interaction between the ecosystem and other uses of water and related land resources, oversight of the reconnaissance level study effort was provided by the interagency South Florida Ecosystem Restoration Task Force, which continues to provide policy guidance, study coordination, and appropriate agency participation. The Water Resources Development Act of 1996 (Section 528) required that the Comprehensive Restudy feasibility report be submitted to Congress, along with a Programmatic Environmental Impact Statement, in July 1999. The Final Integrated Feasibility Report and Programmatic Environmental Impact Statement was submitted to Congress on 01 July 1999. The Comprehensive Plan was a frame work for restoring the South Florida Everglades in WRDA 2000. The Energy and Water Appropriations Act of FY 2000, Public Law 106-50 authorized funds for the Government to initiate design of elements of the Comprehensive Plan for the Everglades and South Florida Ecosystem Restoration Project.

The Water Resources Development Act of 1996 also legislatively established the Task Force and expanded its membership to include State and local agency representatives. The Task Force is providing assistance to the Comprehensive Restoration Plan Program.

The Indian River Lagoon South Feasibility Study was initiated in 1996. This study evaluated potential modifications to the Central and South Florida Project for ecological restoration of Indian River Lagoon system. A final feasibility report, which included components of the Comprehensive Plan, was submitted to

HQUSACE in FY02. The Project Implementation Report (PIR), required by WRDA 2000, for Indian River Lagoon South was completed August 2004. A Chief's Report on the PIR was signed 04 August 2004 and has been transmitted to Congress for authorization.

OTHER INFORMATION CON'T:

The Picayune Strand Project Implementation Report, which is a component of the Comprehensive Plan, was completed in December 2004. A Chief's Report on the PIR was signed on 15 September 2005.

The Site 1 Impoundment Project Implementation Report, which is a component of the Comprehensive Plan, was completed in August 2006. A Chief's Report on the PIR was signed on 19 December 2006.

The Water Resources Development Act 2000 authorized the Comprehensive Everglades Restoration Plan as the framework for modifications and operational changes to the Central & Southern Florida Project. In addition, specific authorization was provided for 10 projects totaling \$1.1 billion (including \$100 million for adaptive assessment and monitoring programs) and 4 pilot projects totaling \$69 million, and to allow for implementation of projects under a programmatic authority, not to exceed \$206 million. Two additional pilot projects and part of the Comprehensive Everglades Restoration Plan were authorized in the Water Resources Development Act of 1999 for \$29 million.

The Everglades and South Florida Ecosystem Restoration project authorization limits total federal funding to \$75 million, however local sponsors have elected, on some projects, to fund more than 50% of project costs to complete those projects.

SUMMARIZED FINANCIAL DATA

C&SF Miscellaneous Completed Work

Estimate Federal Cost		934,900,000
Estimated Non-Federal Cost		408,700,000
Cash Contributions	232,241,000	
Other Costs	176,459,000	
Total Estimated Project Cost		1,343,600,000

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SUMMARIZED FINANCIAL DATA (Continued)

Modified Water Deliveries to Everglades National Park \*\*

Estimated Federal Cost (COE)		131,263,000
Programmed Construction	131,263,000	
Unprogrammed Construction	0	
Estimated Federal Cost (OFA)		252,155,000
Programmed Construction	252,155,000	
Unprogrammed Construction	0	
Estimated Unallocated Cost		15,000,000
Programmed Construction	15,000,000	
Unprogrammed Construction	0	

Total Estimated Programmed Construction Cost		398,418,000
Total Estimated Unprogrammed Construction Cost		0
Total Estimated Project Cost		398,418,000

REMAINING BENEFIT-REMAINING COST RATIO: Not applicable

TOTAL BENEFIT-COST RATIO: Not applicable

\*\* Due to escalation of construction prices for labor and materials, costs on this project are currently being revised with the expectation of a significant increase to the total project cost. Future cost share of this project beyond FY 2008 is TBD.

SUMMARIZED FINANCIAL DATA (Continued)

South Dade County

Estimated Federal Cost		185,000,000
Programmed Construction	185,000,000	
Unprogrammed Construction	0	
Estimated Non-Federal Cost		185,000,000
Programmed Construction	185,000,000	
Cash Contributions	62,550,000	
Other Costs	122,450,000	
Estimated Non-Federal Cost		0
Unprogrammed Construction		0
Cash Contributions	0	
Other Costs	0	
Total Estimated Programmed Construction Cost		370,000,000
Total Estimated Unprogrammed Construction Cost		0
Total Estimated Project Cost		370,000,000

REMAINING BENEFIT-REMAINING COST RATIO: Not applicable

TOTAL BENEFIT-COST RATIO: Not applicable

SUMMARIZED FINANCIAL DATA (Continued)

West Palm Beach Canal

Estimated Federal Cost (COE)		230,400,000
Programmed Construction	230,400,000	
Unprogrammed Construction	0	
Estimated Federal Cost (OFA)		46,000,000
Programmed Construction	46,000,000	
Unprogrammed Construction	0	
Estimated Non-Federal Cost		32,700,000
Programmed Construction	32,700,000	
Cash Contributions	19,108,000	
Other Costs	13,592,000	
Estimated Non-Federal Cost		0
Unprogrammed Construction		0
Cash Contributions	0	
Other Costs	0	
Total Estimated Programmed Construction Cost		309,100,000
Total Estimated Unprogrammed Construction Cost		0
Total Estimated Project Cost		309,100,000

REMAINING BENEFIT-REMAINING COST RATIO: Not applicable

TOTAL BENEFIT-COST RATIO: Not applicable

SUMMARIZED FINANCIAL DATA (Continued)

Manatee Pass-Through Gates

Estimated Federal Cost			13,600,000
Programmed Construction		13,600,000	
Unprogrammed Construction		0	
Estimated Non-Federal Cost			2,200,000
Programmed Construction		2,200,000	
Cash Contributions	2,200,000		
Other Costs	0		
Estimated Non-Federal Cost			
Unprogrammed Construction		0	
Cash Contributions	0		
Other Costs	0		
Total Estimated Programmed Construction Cost			15,800,000
Total Estimated Unprogrammed Construction Cost			0
Total Estimated Project Cost			15,800,000

REMAINING BENEFIT-REMAINING COST RATIO: Not applicable

TOTAL BENEFIT-COST RATIO: Not applicable

SUMMARIZED FINANCIAL DATA (Continued)

Comprehensive Everglades Restoration Plan

Estimated Federal Cost		1,887,500,000
Programmed Construction	1,887,500,000	
Unprogrammed Construction	0	
Estimated Non-Federal Cost		1,880,200,000
Programmed Construction	1,880,200,000	
Cash Contributions	14,872,000	
Other Costs	1,865,328,000	
Estimated Non-Federal Cost		
Unprogrammed Construction		0
Cash Contributions	0	
Other Costs	0	
Total Estimated Programmed Construction Cost		3,767,700,000
Total Estimated Unprogrammed Construction Cost		0
Total Estimated Project Cost		3,767,700,000

REMAINING BENEFIT-REMAINING COST RATIO: Not applicable

TOTAL BENEFIT-COST RATIO: Not applicable

SUMMARIZED FINANCIAL DATA (Continued)

Lake Okeechobee

Estimate Federal Cost		11,150,000
Estimated Non-Federal Cost		11,197,000
Cash Contributions	5,970,000	
Other Costs	5,227,000	
Total Estimated Project Cost		22,347,000

Southern CREW

Estimate Federal Cost		281,000
Estimated Non-Federal Cost	1/	33,040,000
Cash Contributions	3,462,000	
Other Costs	29,578,000	
Total Estimated Project Cost		33,321,000

East Coast Canal Structures

Estimate Federal Cost		1,902,000
Estimated Non-Federal Cost		1,796,000
Cash Contributions	1,571,000	
Other Costs	225,000	
Total Estimated Project Cost		3,698,000

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SUMMARIZED FINANCIAL DATA (Continued):

Western C-11 Basin

Estimate Federal Cost		9,100,000
Estimated Non-Federal Cost		8,992,000
Cash Contributions	8,389,000	
Other Costs	603,000	
Total Estimated Project Cost		18,092,000

Seminole Big Cypress

Estimate Federal Cost		24,309,000
Estimated Non-Federal Cost 1/		27,869,000
Cash Contributions	11,870,000	
Other Costs	15,999,000	
Total Estimated Project Cost		52,178,000

Ten-Mile Creek

Estimate Federal Cost		19,995,000
Estimated Non-Federal Cost		20,581,000
Cash Contributions	14,305,000	
Other Costs	6,276,000	
Total Estimated Project Cost		40,576,000

Division: South Atlantic

District: Jacksonville

South Florida Everglades Ecosystem Restoration

03 January 2007

SUMMARIZED FINANCIAL DATA (Continued):

Tamiami Trail (Western Segment)

Estimate Federal Cost		2,622,000
Estimated Non-Federal Cost 1/		13,884,000
Cash Contributions	0	
Other Costs	13,884,000	
Total Estimated Project Cost		16,506,000

Lake Trafford

Estimate Federal Cost		1,602,000
Estimated Non-Federal Cost 1/		28,441,000
Cash Contributions	0	
Other Costs	28,441,000	
Total Estimated Project Cost		30,043,000

Keys Carrying Capacity

Estimate Federal Cost		3,000,000
Estimated Non-Federal Cost		3,000,000
Cash Contributions	1,500,000	
Other Costs	1,500,000	
Total Estimated Project Cost		6,000,000

Division: South Atlantic

District: Jacksonville

South Florida Everglades Ecosystem Restoration

03 January 2007

SUMMARIZED FINANCIAL DATA (Continued)

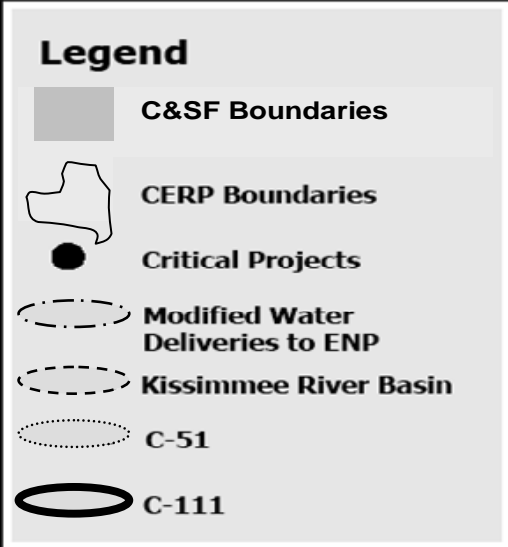
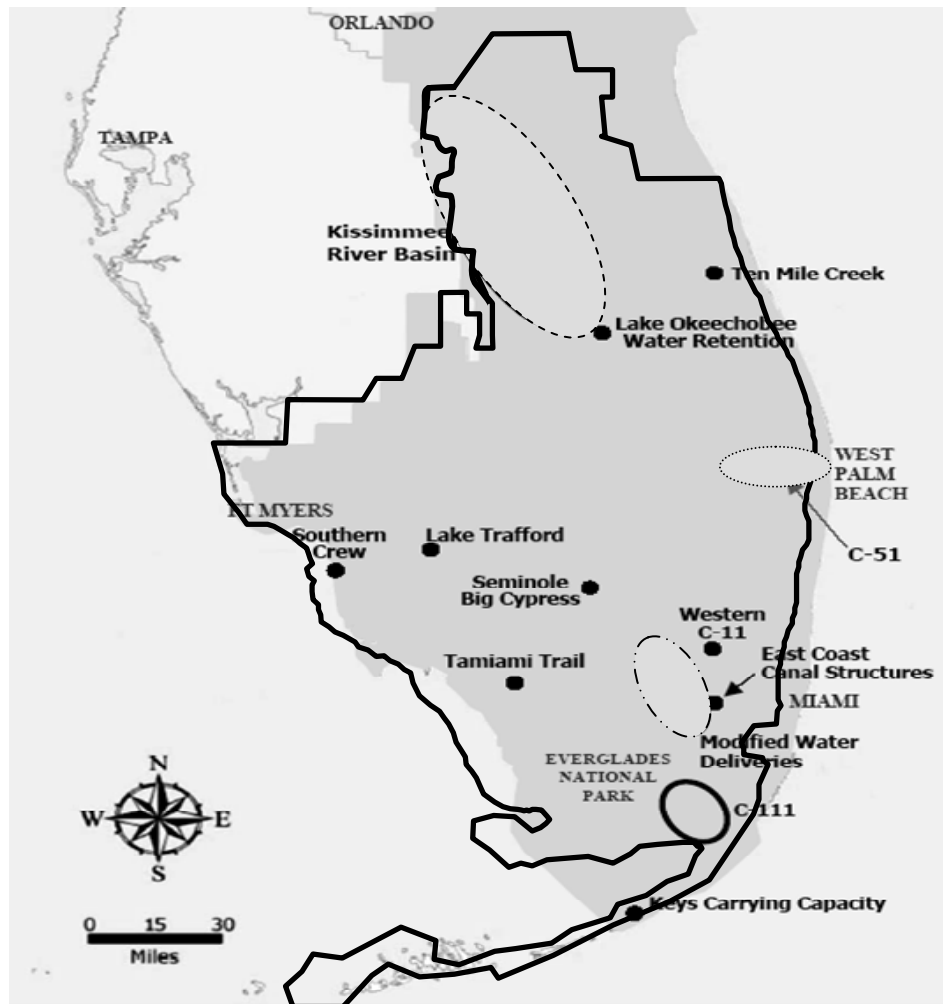
Kissimmee River

Estimated Federal Cost		291,500,000
Programmed Construction	291,500,000	
Unprogrammed Construction	0	
Estimated Non-Federal Cost		291,500,000
Programmed Construction	291,500,000	
Cash Contributions	70,920,000	
Other Costs	220,580,000	
Estimated Non-Federal Cost		0
Unprogrammed Construction		0
Cash Contributions	0	
Other Costs	0	
Total Estimated Programmed Construction Cost		583,000,000
Total Estimated Unprogrammed Construction Cost		0
Total Estimated Project Cost		583,000,000

REMAINING BENEFIT-REMAINING COST RATIO: Not applicable

TOTAL BENEFIT-COST RATIO: Not applicable

1/ Construction assigned to sponsor due to Federal funding cap on Everglades and South Florida program.



# South Florida Everglades Ecosystem Restoration

ENVIRONMENT  
CONSTRUCTION  
SOUTH PACIFIC DIVISION

APPROPRIATION TITLE: Construction, General – Environmental Restoration

PROJECT: Hamilton Airfield Wetlands Restoration, California (Continuing)

LOCATION: Hamilton Airfield Wetland Restoration Project is located 4 miles east of the city of Novato, on San Pablo Bay, Marin County, California.

DESCRIPTION: The project includes a 988-acre parcel consisting of a former military runway and adjacent California State Lands Commission areas. The site, currently protected by levees, has subsided below the elevation of surrounding properties including the tidal wetlands immediately adjacent to San Pablo Bay. This condition has resulted in the loss of valuable habitat for various waterfowl, fish and other wetland dependent species of plants and animals including at least two threatened and endangered species. The project allows for the beneficial reuse of 10.6 million cubic yards of dredged material, including approximately 2.6 million cubic yards from the Oakland Harbor, CA (50-ft) deepening project to restore nearly 1,000 acres of wetland habitat. The project promotes the long term management strategy for placement of dredged material in the San Francisco Bay region.

AUTHORIZATION: Water Resources Development Act of 1999

REMAINING BENEFIT - REMAINING COST RATIO: Not applicable.

TOTAL BENEFIT - COST RATIO: Not applicable.

INITIAL BENEFIT – COST RATIO: Not applicable

BASIS OF BENEFIT - COST RATIO: Project justification is based on nonmonetary benefits for aquatic ecosystem restoration.

SUMMARIZED FINANCIAL DATA		STATUS (1 Jan 2007)	PERCENT COMPLETE	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$ 48,900,000	Entire Project	40	To be determined
Estimated Non-Federal Cost	\$ 16,290,000	PHYSICAL DATA  Placement of 10.6 million cubic yards of dredged material; Breach tidal levee; Construction of 9,400 ft of perimeter levee; and Wetland Restoration of 988 acres		
Cash Contribution	\$ 13,390,000			
Other Costs	2,900,000			
Total Estimated Project Cost	\$ 65,190,000			

Division: South Pacific

District: San Francisco  
5 February 2007

Hamilton Airfield Wetlands  
Restoration, California

SUMMARIZED FINANCIAL DATA (Continued)

		ACCUM PCT OF EST FED COST
Allocation to 30 September 2004	9,796,000	
Allocation for FY 2005	5,208,000	
Allocation for FY 2006	10,870,000	
Conference Allowance for FY 2007	11,700,000	
Allocation for FY 2007	11,700,000 *	
Allocation through FY 2007	37,574,000	77
Allocation Requested for FY 2008	4,900,000	87
Programmed Balance to Complete after FY 2008	\$ 6,426,000	
Unprogrammed Balance to Complete after FY 2008	0	

\* Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: The Hamilton Airfield Wetland Restoration project area, currently protected by levees, has subsided below the elevation of surrounding properties, including the tidal wetlands immediately adjacent to San Pablo Bay. This condition has resulted in the loss of valuable habitat for various waterfowl, fish and other wetland dependent species of plants and animals including at least two threatened and endangered species. The principal purpose of the project is restoration of wetland habitat via beneficial use of dredged material from San Francisco Bay dredging projects. The project is also consistent with the local reuse plan for the airfield that was closed in 1974.

FISCAL YEAR 2007: Current year funds will be used to:

Award and Complete Contract for N2, South Levee and Intertidal Berms	\$6,400,000
Complete Tidal Panne Berm Contract	1,900,000
Award and Complete Incremental Dredge Placement cost	400,000
Award and Complete Building Demo Contract	300,000
Award and Complete Southern containment Berm	500,000
Construction Management	700,000
Planning, Engineering and Design	1,500,000
Total	11,700,000

FISCAL YEAR 2008: The requested amount of \$4,900,000 will be applied as follows:

Award and Complete Aquatic Transfer Facility and Incremental Placement Cost	\$3,750,000
Planning, Engineering and Design	750,000
Construction Management	400,000
Total	\$4,900,000

Division: South Pacific

District: San Francisco  
5 February 2007

Hamilton Airfield Wetlands  
Restoration, California

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below:

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repairs, Rehabilitation, and Replacement Costs
Provide lands, easements, rights of way, and dredged material disposal areas.	\$ 300,000	N/A
Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary for the construction of the project.	2,600,000	N/A
Pay 21 percent of the construction costs allocated to fish and wildlife restoration/beneficial use of dredged material in cash to bring the non-Federal share of the project to 25 percent in accordance with Section 101(b) of the Water Resources Development Act of 1999.	13,390,000	\$ 228,000
Total Non-Federal Costs	\$ 16,290,000	\$ 228,000

The non-Federal sponsor has also agreed to make all required payments concurrently with project construction.

STATUS OF LOCAL COOPERATION: The California Coastal Conservancy, the local sponsor, supports the project. The Project Design Agreement was executed in September 1999. The current non-Federal cost estimate of \$16,290,000, which includes a cash contribution of \$13,390,000, is an increase of \$2,290,000 from the estimate reflected in the Project Cooperation Agreement, which was signed in April 2002. The non-Federal sponsor has indicated it is financially capable and willing to contribute the non-Federal share. Our analysis of the non-Federal sponsor's financial capability to participate in the project affirms that the sponsor has a reasonable and implementable plan for meeting its financial commitment. The Project Cost Agreement amendment to accept advanced funds from the local sponsor was approved by the Assistant Secretary of the Army (Civil Works) on 21 January 2005.



COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$48,900,000 is an increase of \$1,000,000 from the latest estimate (\$47,900,000) presented to Congress (FY 2007):

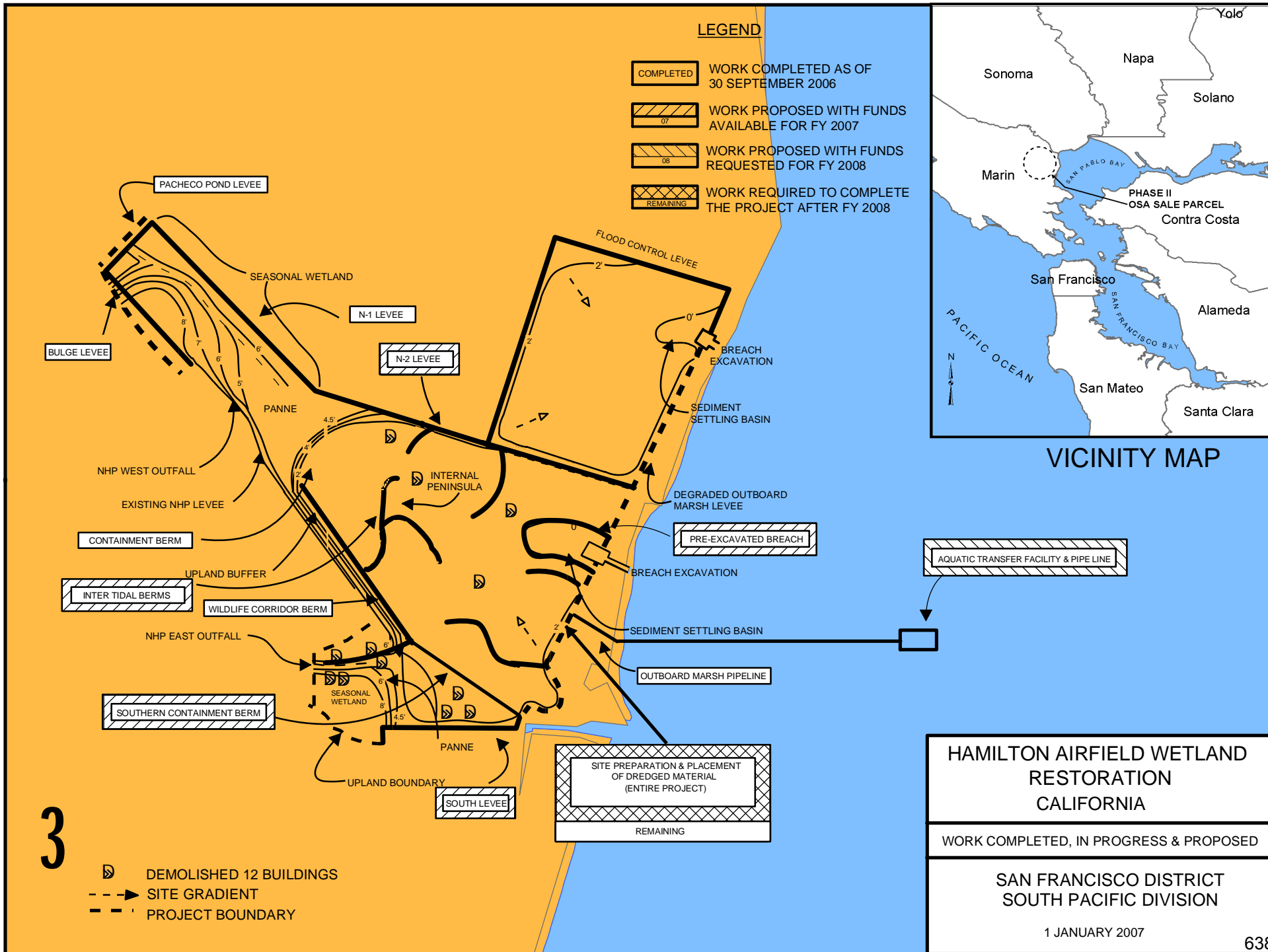
Item	Amount
Price Escalation on Construction Features	\$1,000,000
Total	\$1,000,000

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Final Environmental Impact Statement was filed with EPA in February 1999.

OTHER INFORMATION: Funds to initiate preconstruction engineering and design were reprogrammed to the project with Congressional approval in Fiscal Year 1999. Funds to initiate construction were appropriated in Fiscal Year 2001.

A General Reevaluation Report (GRR) and Supplemental Environmental Impact Report/Environmental Impact Statement for Bel Marin Keys Unit V Expansion of the Hamilton Wetland Restoration Project were completed in April 2003. The GRR recommends the inclusion of the Bel Marin Keys and also provides a new estimate for the costs of the authorized Hamilton Wetlands Restoration Project. Total project first cost (October 2003 prices) reflected in the GRR, including the Bel Marin Keys increment, is estimated at \$192,900,000. The Chief's Report was signed 19 July 2004. Inclusion of the Bel Marin increment and the new overall project cost would require congressional authorization. The Hamilton PCA amendment package for acceptance of additional local funds was executed February 2005. The local sponsor has contributed additional funds to the project in FY 2005 to maintain the schedule.

Army Base Realignment And Closure (BRAC) transfer of the Hamilton Airfield parcel to the State of California occurred in September 2003.



3

- DEMOLISHED 12 BUILDINGS
- SITE GRADIENT
- PROJECT BOUNDARY

ENVIRONMENT

CONSTRUCTION

MISSISSIPPI RIVER AND TRIBUTARIES

APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and TN - Construction

PROJECT: Atchafalaya Basin Floodway System, Louisiana (Continuing)

LOCATION: The project is located in south-central Louisiana and encompasses approximately 595,000 acres in an area bounded on the north by south right-of-way line of the Union Pacific Railroad (just south of US Hwy 190); on the south by Morgan City; and on the east and west by the East and West Atchafalaya Basin Protection Levees.

DESCRIPTION: The plan of improvement consists of acquisition of real estate interest, excluding minerals, in the Lower Atchafalaya Floodway for flood control purposes, environmental protection purposes, developmental control purposes, and public access; acquisition of real estate interest, excluding minerals, in the Lower Atchafalaya Floodway, for recreation developmental purposes and construction of several campgrounds, boat launching ramps, visitor's center, other recreational facilities and initial construction of two pilot water management units, including construction of miscellaneous canal closures and water circulation improvements, and implementation of future units at the discretion of the Chief of Engineers. These project features will be implemented in accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986. All work is programmed.

AUTHORIZATION: Supplemental Appropriations Act, 1985; Water Resources Development Act, 1986; Energy and Water Development Appropriations Act, 1988; Energy and Water Development Appropriations Act, 1991; Energy and Water Development Appropriations Act, 1997; and Water Resources Development Act, 2000.

REMAINING BENEFIT-REMAINING COST RATIO: 44.4 to 1 at 7 percent.

TOTAL BENEFIT-COST RATIO: 3.8 to 1 at 7 percent. The benefit-cost ratio is based on all features that comprise the Main Stem system of the Mississippi River and Tributaries project.

INITIAL BENEFIT-COST RATIO: This project is a feature of the Main Stem system that was authorized in Fiscal Year 1928. Initial funds for the acquisition of real estate interests for flood control, developmental control, environmental protection, and public access were provided in 1985. The authorized comprehensive review of the Mississippi River and Tributaries project, contained in House Document 308/88/2, as updated to reflect 1965 conditions and price levels, is considered to be the base estimate for the Main Stem system. The benefit-cost ratio for the Main Stem components computed for the base estimate was 7.9 to 1.

BASIS OF BENEFIT-COST RATIO: Benefits are from the latest available evaluation approved in October 1979 at 1979 price levels. The latest comprehensive analysis was conducted in 1974. The 1979 analysis is the same as the 1974 analysis except that certain undocumented benefit categories were eliminated and 1979 prices were used.

SUMMARIZED FINANCIAL DATA		ACCUM PCT OF EST FED COST	STATUS (1 January 2007)	PCT Cmpl	PHYSICAL COMPLETION SCHEDULE
Estimated Federal Cost	\$202,000,000		Land Acquisition	60	TBD
Estimated Non-Federal Cost	\$ 30,134,000		Recreation	4	TBD
Cash Contribution	\$27,000,000		Management Units	5	TBD
Other Costs	3,134,000		Entire Project	48	TBD
 Total Estimated Project Cost	 \$232,134,000				
					PHYSICAL DATA
Allocations to 30 September 2004	\$111,207,000				
Allocations for 2005	\$5,019,000				Lands and Damages: 388,000 Acres
Allocations for 2006	\$4,257,000				Recreational Facilities
Conference Allowance for FY 2007	\$4,840,000				3 campgrounds – developed
Allocation for FY 2007	\$4,840,000 *				7 campgrounds – primitive
Allocations through FY 2007	\$125,323,000	62			15 2-lane boat launching ramps
Allocation Requested for FY 2008	\$1,800,000	65			Trails
 Programmed Balance to Complete after FY 2008	 \$74,877,000				Water Management Units
Unprogrammed Balance to Complete after FY 2008	0				Miscellaneous canal closures and water circulation channels

\* Assumed allocation. Final, actual allocations yet to be determined.

JUSTIFICATION: The Atchafalaya Basin Floodway System features result from a comprehensive study with a view to developing a plan for the enhancement, management, and preservation of the water quality and related land resources of the Atchafalaya River Basin, Louisiana, which would include provisions for reductions of siltation, improvement of water quality, and possible improvements of the area for commercial and sport fishing. The features of the Atchafalaya Basin Floodway System are compatible with the current flood control plan, and include real estate acquisition of lands, flowage easements, and developmental control easements in the floodway south of Krotz Springs, Louisiana, to ensure unhampered use of the floodway during major floods; and environmental protection easements to protect the basin's environmental resources. Provision of additional public access and several campgrounds, boat launching ramps, visitors' center, and other recreational facilities are also authorized. The water management units' feature involves making use of distinct and unique hydrologic units within the floodway to improve historical (where practical) overflow conditions and thereby enhance aquatic ecosystem productivity.

The Atchafalaya Basin Floodway System Project has two major, mutually supporting goals: to preserve the environmental values of the nation's largest river, cypress and tupelo swamps, their bayous and abundant water and land species, and to insure that the Lower Atchafalaya Basin can pass a flood of 1.5 million cubic feet per second as required by the Mississippi River and Tributaries Project.

The ABFS Project as authorized by the WRDA 1986 Section 906e and f as a fish and wildlife enhancement project of national significance. The ABFS contains the largest expanse of cypress tupelo swamp in the nation supporting the migratory flyways of ducks and neotropical birds, estuarine gradient of the gulf coast, and nitrogen uptake reducing gulf hypoxia, and three (3) National Wildlife Refuges. The ABFS also supports habitat for the Louisiana Black Bear and the American Bald Eagle.

The Atchafalaya Basin Floodway System is one of several Main Stem components, which together comprise the plan of improvement for the control of floods on the Mississippi River. The components are: Mississippi River Levees, Channel Improvement, South Bank Arkansas and South Bank Red River Levees, the Atchafalaya Basin, Atchafalaya Basin Floodway System, Old River, and a few miscellaneous items. The benefits of the Atchafalaya Basin Floodway System are derived from the way in which they operate together with all other Main Stem components when the Mississippi River floods, the benefit-cost ratio is a composite one that covers the entire plan.

The value of lands and improvements protected by authorized works against the design flood is \$159.4 billion in 2005 dollars. This consists of 226,000 residential acres that include the City of New Orleans, 45,000 acres of commercial lands, 10 million acres of agricultural lands, and 6.5 million acres of woodland and marshland. The area subject to flooding by project flood assuming no protective works is 22.7 million acres. The area that will be provided complete protection by the completed project is 15.1 million acres.

The maximum flood of record was the 1927 flood that overflowed approximately 26,000 square miles (16.64 million acres), caused the deaths of 214 people, rendered 637,000 people temporarily homeless, and caused property damages of \$347.0 million. This would be equivalent to \$12.0 billion damages in 2006 prices.

The next flood of magnitude was the 1973 flood that overflowed 16,875 square miles (10.8 million acres), caused the death of 28 people, and displaced approximately 45,300 persons. The deaths and displacements of persons would have been significantly higher without the project in place. Without Federal projects, approximately 19.8 million acres would have been inundated. Total damages with existing projects in operation were \$643 million (1973 price levels). Damages without projects would have been \$12.1 billion and total damages prevented by projects amounted to \$11.3 billion. Expressed in 2006 prices, damages without the projects would have been \$43.5 billion and damages prevented would have been \$40.8 billion.

Measuring the total benefits credited to those Main Stem components against their total cost derived the benefit-cost ratio. Average annual benefits for the composite of Main Stem features are as follows:

Annual Benefits	Amount @ 2.5%	Amount @ 7%
Flood Control	\$ 1,372,231,000	\$ 470,224,000
Navigation	291,680,000	132,965,000
Area Redevelopment	2,480,000	1,208,000
Recreation	3,433,000	3,234,000
Total	\$ 1,669,824,000	\$ 607,631,000

FISCAL YEAR 2007: Current year funds are being used as follows:

Buffalo Cove (Management Unit Construction)	\$691,000
Supplemental Environmental Studies	\$892,000
Lands and Damages	\$1,257,000
Myette Pt. Construction	\$900,000
Planning, Engineering and Design:	
Lands Acquisition	\$100,000
Recreation Feature	\$300,000
Management Units	\$500,000
Construction Management	\$200,000
Total	\$ 4,840,000

FISCAL YEAR 2008: The requested amount will be applied as follows:

Continue:	
Lands and Damages	\$1,500,000
Continue:	
Flood Damage Reduction	
Planning, Engineering and Design	\$300,000
Total	\$1,800,000

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the non-Federal sponsor must comply with the requirements listed below.

Requirements of Local Cooperation	Payments During Construction and Reimbursements	Annual Operation, Maintenance, Repair, Rehabilitation and Replacement Costs
Pay one-half of the separable cost allocated to recreation and bear all costs of operation, maintenance, and replacement of recreation facilities.	\$ 27,000,000	\$ 520,500
Provide lands, easements, rights-of-way, and dredged material disposal areas for recreation.	3,134,000	0
Pay 25 percent of operation and maintenance of Water Management Units.	0	200,000
<b>Total Non-Federal Costs</b>	<b>\$ 30,134,000</b>	<b>\$ 720,500</b>

The non-Federal sponsor has also agreed to pay 25 percent of construction costs for Water Management Units. Buffalo Cove Water Management Unit has been exempted from non-Federal sponsor cost sharing.

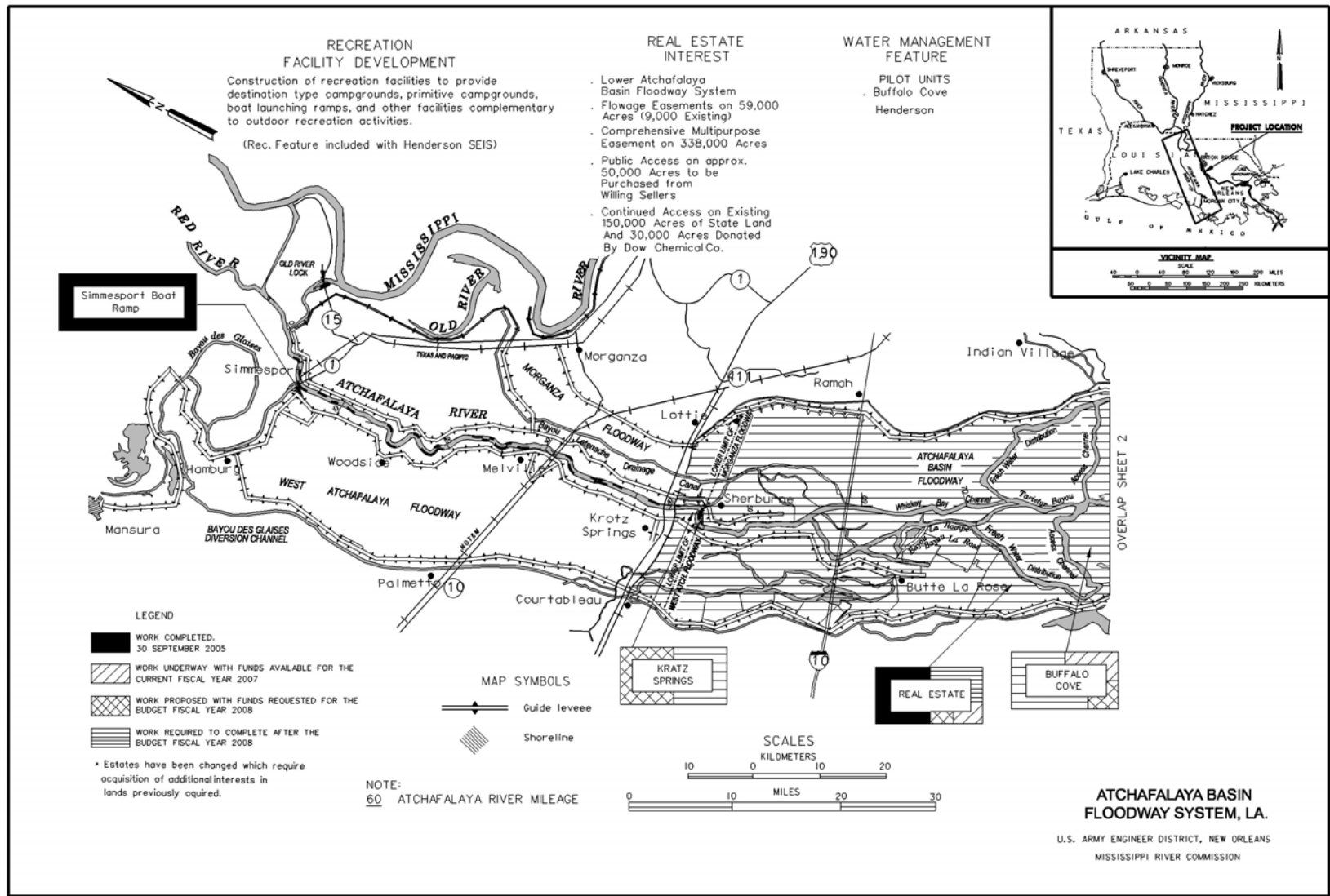
STATUS OF LOCAL COOPERATION: The Avoyelles Parish Police Jury is the non-Federal sponsor for the Simmesport Boat Ramp and the PCA was executed on 18 April 2001. The State of Louisiana has provided a letter of intent supporting the recreation feature of the project and agrees to its cost sharing requirements. The State designated the Department of Natural Resources to be the lead State agency to represent the State in the implementation of the project. Additional sponsors, St. Mary Parish, serves as local sponsor for Myette Point Boat Landing and the PCA was executed on 18 May 2004. The State of Louisiana, Department of Natural Resources, is also serving as the sponsor for the management units. The PCA for the Buffalo Cove management unit was executed on 16 May 2005.

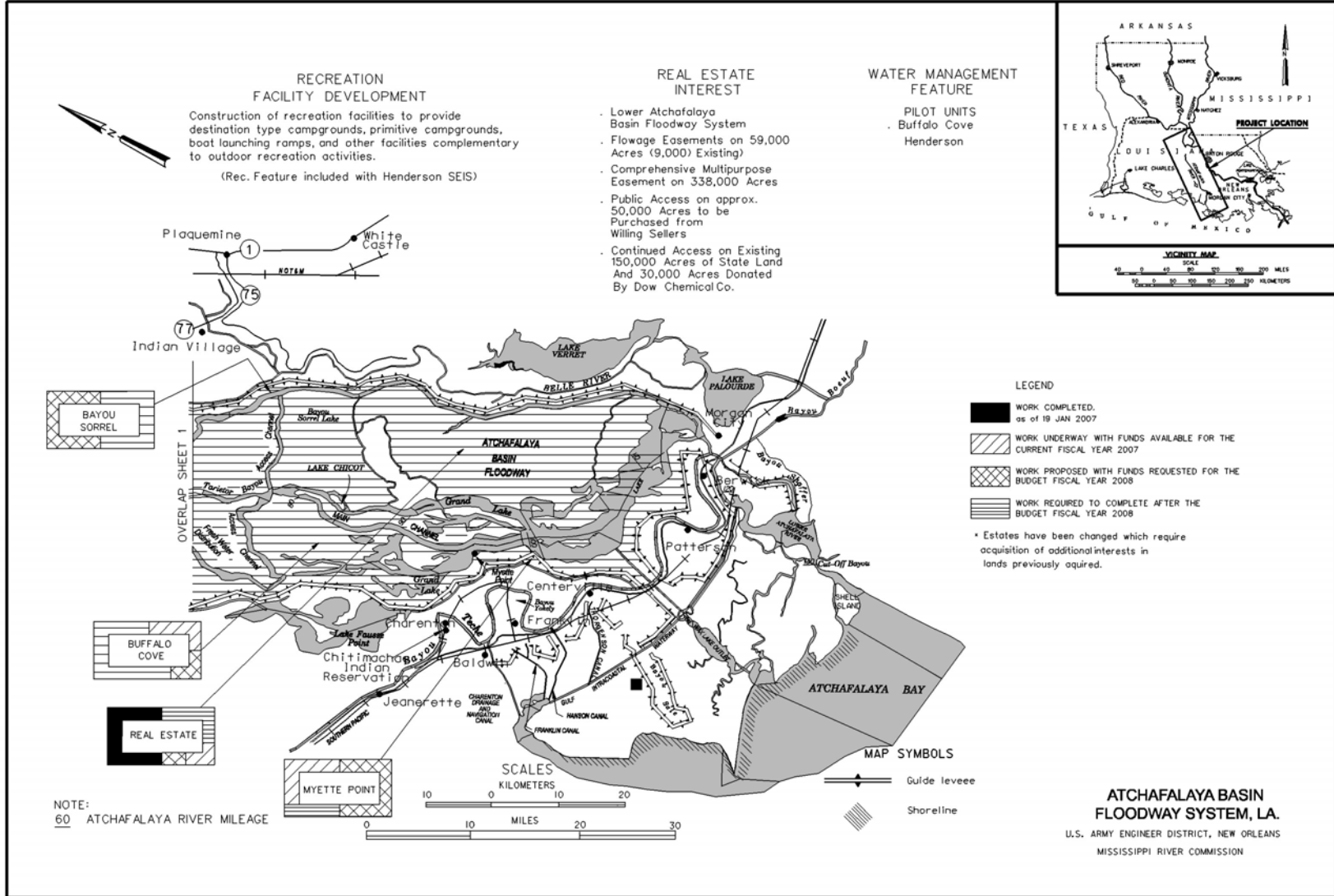
COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of \$202,000,000 is the same as last presented to Congress (Fiscal Year 2007).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The final Environmental Impact Statement was filed with the Environmental Protection Agency on 20 August 1982. A Supplemental Environmental Impact Statement (SEIS) for Henderson Lake Management Unit and Recreation Feature (combined) has been initiated in April 2006. A Supplemental Environmental Impact Statement (SEIS) for Buffalo Cove, Flat Lake, Beau Bayou, Cocodrie Swamp will be initiated in early Fiscal Year 2007.

OTHER INFORMATION: Funds to initiate construction were appropriated in Fiscal Year 1985.







ENVIRONMENT

FORMERLY USED SITES REMEDIAL ACTION PROGRAM

(FUSRAP)

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EXPECT FEDERAL PROGRAMS TO PERFORM WELL, AND BETTER EVERY YEAR.



## Program Assessment

### Formerly Utilized Sites Remedial Action Program

Program

[View Similar Programs](#)

The purpose of this program is to clean up contamination resulting from the Nation's early atomic weapons program -- the Manhattan Project, for example -- at 22 sites in nine States. The Army Corps of Engineers determines what needs to be cleaned up and how, in consultation with the affected communities and regulators.

Rating

[What This Rating Means](#)

#### PERFORMING

☆☆ Moderately Effective

- **The program has a clear purpose.** However, stakeholders at individual project sites in some cases have different views of what the goals of the program are.
- **The Corps has significantly reduced cleanup costs.** It has done this by increasing competition among contractors and by selecting disposal methods based on the risk posed by the actual materials being disposed of rather than high theoretical risks that more concentrated materials might pose.

## Improvement Plan

About Improvement Plans

Learn More

We are taking the following actions to improve the performance of the program:

- Working with stakeholders to better document and clarify program goals and commitments.
  - Identifying ways to increase the program's efficiency while protecting the health and safety of the public and the environment, increasing competition where warranted.
- **Assessment Details, Funding, and Improvement Plan.**
  - How all Federal programs are assessed.
  - Learn more about Formerly Utilized Sites Remedial Action Program.

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APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008  
(\$000)

State	Allocated	FY 2008	Remaining Requirement	
Project Name	through FY 2007	Request	Low Estimate	High Estimate
<b>Connecticut</b>				
CE, Windsor, CT	9,477	250	19,723	32,813
<b>Iowa</b>				
Iowa Army Ammunition Plant, Middletown, IA	2,025	700	TBD	TBD
<b>Maryland</b>				
W. R. Grace, Baltimore, MD	12,143	1,200	28,627	42,617
<b>Massachusetts</b>				
Shpack Landfill, Norton, MA	19,019	8,500	9,680	9,680
<b>Missouri</b>				
Downtown, St. Louis, MO	167,777	17,000	40,340	40,340
Latty Avenue, St. Louis, MO	81,128	15,000	90,708	90,708
St. Louis Airport Vicinity Properties, St. Louis, MO	46,273	7,000	53,685	53,685
St. Louis Airport, St. Louis, MO	309,936	500	528	528
<b>New Jersey</b>				
Dupont Chambers Works, Deepwater, NJ	17,590	1,000	3,620	11,040
Maywood, NJ	337,163	30,000	79,067	130,067
Middlesex, NJ	99,608	7,300	0	5,982
<b>New York</b>				
Ashland 1, Tonawanda, NY	106,708	150	300	300
Colonie, NY	185,134	2,500	5,800	14,696
Guterl, Lockport, NY	3,185	2,500	TBD	TBD
Linde Air Products, Tonawanda, NY	197,200	24,950	23,750	23,750
Niagara Falls Storage Site, NY	47,443	3,500	268,277	374,677
Seaway Industrial Park, Tonawanda, NY	9,065	400	27,732	70,945
Sylvania Corning, Hicksville, NY	2,970	1,500	TBD	TBD
<b>Ohio</b>				
Former Harshaw Chemical Company, Cleveland, OH	12,095	1,450	25,425	38,405
Luckey, OH	15,466	400	43,063	43,063
Painesville, OH	21,600	200	1,000	1,000
<b>Pennsylvania</b>				
Shallow Land Disposal Area, Parks Township, PA	9,840	4,000	39,000	39,000
<b>Potential Sites</b>				
	<b>1,713,095</b>	<b>130,000</b>		

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

North Atlantic Division

CONNECTICUT

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Combustion Engineering Windsor, CT New England District	29,700,000- 42,790,000*	8,717,000	460,000	300,000	250,000	250,000	19,723,000- 32,813,000*

The Combustion Engineering (CE) site is a 600-acre area in Windsor, Connecticut. CE, under contract to the Atomic Energy Commission (AEC), fabricated nuclear fuel assemblies using highly enriched uranium (HEU) from 1958 to 1961. CE also conducted licensed commercial nuclear activity on the site from the early 1960's to 1993. Although the commercial nuclear fuel fabrication ceased in 1993, CE is still licensed by the Nuclear Regulatory Commission (NRC) for other commercial nuclear activities and the facility is still operating today. HEU is the primary radiological contaminant of concern at the site, which may be addressed by Formerly Utilized Sites Remedial Action Program (FUSRAP). Only limited site characterization work had been performed when FUSRAP was transferred from the Department of Energy (DOE) to the Corps for execution. Since then, the Corps has performed a gamma survey of the site, completed site characterization (SI), completed an investigation action at the "Rapaport Building" and completed a Remedial Investigation Report.

In FY 2006, the Corps continued work on the Feasibility Study and started revisions to address comments.

In FY 2007, the Corps completes the Feasibility Study, initiates work on a proposed plan and Record of Decision, and continues potentially responsible party discussions.

FY 2008 funds will be used to complete a Record of Decision and to support potentially responsible party discussions.

The schedule for completion of site remediation is to be determined.\*\*

\*The total cost will depend upon the specific cleanup standards established for this site, taking into account input from Federal, state and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive cost estimate.

\*\*The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

Mississippi Valley Division

IOWA

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY2005 \$	Allocation FY2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Iowa Army Ammunition Plant Middletown, IA St. Louis District	TBD*	425,000	500,000	400,000	700,000	700,000	TBD*

The Iowa Army Ammunition Plant (IAAAP) is a secured, operational, Army-owned facility located on approximately 19,100 acres near Burlington in Des Moines County, in southeastern Iowa. During its use as an Army facility, portions of the IAAAP were occupied by tenant organizations including the Atomic Energy Commission (AEC). From 1947 to 1975, the AEC operated areas of the plant as the Burlington Atomic Energy Commission Plant (BAECP). In 2002 a Preliminary Assessment was completed for the BAECP and the IAAAP was included in FUSRAP. The Preliminary Assessment included a review of AEC historical documents, site visits, examination of the results of an indoor radiological survey, and performance of a limited radiological walkover survey at two firing site areas. Evidence of a release was found and additional investigation to determine the nature and extent of AEC associated contamination was recommended. It is believed that approximately 1,600 acres within the IAAAP may have been potentially impacted by AEC operations. Limited survey data and existing sampling data (from other Army activities) indicate radiological (primarily depleted uranium), chemical, and explosives contamination exists. The nature and extent of this contamination will be investigated and defined during the Remedial Investigation (RI), which is the next step in the planning process. The primary regulators/stakeholders include the Environmental Protection Agency Region VII, Iowa Department of Public Health, Iowa Army Ammunition Plant (Army) and the IAAAP Restoration Advisory Board. The site was placed on the National Priority List in 1990.

In FY 2006, the Corps finalized the Federal Facilities Agreement with the primary regulators/stakeholders, performed additional walkover surveys to gather data to better scope the Remedial Investigation, developed the Remedial Investigation work plan and began sampling several areas at the plant.

In FY 2007, the Corps is completing the fieldwork required for the Remedial Investigation.

FY 2008 funds will be used to finalize the Remedial Investigation report and to initiate the Feasibility Study of the Site.

The schedule for completion of site remediation is to be determined.\*\*

\*A preliminary cost estimate for site remediation will be determined during the Feasibility Study phase.

\*\*The completion schedule will depend on the cleanup standards established for this site and on overall funding constraints.



APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

North Atlantic Division

MARYLAND

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
W.R. Grace Site Baltimore, MD Baltimore District	41,970,000– 55,960,000*	9,247,000	1,700,000	496,000	700,000	1,200,000	28,627,000- 42,617,000*

The W.R. GRACE site is situated within a 260-acre property owned by W.R. Grace-Davidson Chemical Manufacturing Company (GRACE) and located in south Baltimore City on an industrialized peninsula. Currently, GRACE manufactures and produces specialty chemicals at this facility. Contamination at the site is located in two separate and distinct areas. The first, the southwestern corner of Building 23 which housed the thorium extraction process and has contaminated surfaces which was impacted by this process. The second area is the approximately 7-acre Radioactive Waste Disposal Area (RWDA) located east of the plant proper. This area received the process byproducts and spent monazite sand and gangue from the thorium extraction process. The Department of Energy (DOE) conducted radiological surveys at the site; however, no characterization or remediation had been performed. The Corps has finalized the remedial investigation/feasibility study (RI/FS) and Record of Decision (ROD) for Building 23.

In FY 2006 the funds were used to complete the Supplemental Remedial Investigation at RWDA.

In FY 2007, funds are being used to complete the RWDA Feasibility Study.

FY 2008, funds will be used to complete the Proposed Plan and Record of Decision for RWDA.

The schedule for completion of site remediation is to be determined.\*\*

\* The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site is approved in a Record of Decision, it will be possible to provide a more definitive estimate.

\*\* The completion schedule will depend on the cleanup standards established for this site and on overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

North Atlantic Division

MASSACHUSETTS

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Shpack Landfill Norton/Attleboro, MA New England District	37,199,000	5,470,000	4,790,000	5,759,000	3,000,000	8,500,000	9,680,000

The Shpack site is an 8-acre abandoned domestic and industrial landfill, which operated from 1946 to 1965. It is located along the Norton/Attleboro town boundary line with approximately 5.5 acres in Norton and 2.5 acres in Attleboro. The Town of Norton and Attleboro Landfill, Inc. owns the property. FUSRAP-related radioactive contamination is believed to have come from Metals and Controls, Inc. (now Texas Instruments), which had used the landfill to dispose of trash and other materials from 1957-1965. The General Plate Division of Metals and Controls began to fabricate enriched uranium foils at their Attleboro plant in 1952. In 1959 it merged with Texas Instruments, which continued the operations until 1981, using enriched and natural uranium for the fabrication of nuclear fuel for the U.S. Navy and commercial customers. The site was also listed on the National Priority List (NPL) in 1986, primarily to address other contaminants on site. The Environmental Protection Agency (EPA) has signed an Administrative Order by Consent with a group of Settling Parties (which includes Texas Instruments) for the performance of a remedial investigation/feasibility study (RI/FS). This study was completed in FY04 and a Record of Decision (which addressed the radiological contamination) was signed on 30 September 2004. The Corps has completed a gamma walk-over survey, site characterization, and potentially responsible party (PRP) investigations and completed a draft Engineering Evaluation/Cost Analysis (EE/CA). In FY 2005, the Corps initiated the remedial action in accordance with EPA's Record of Decision.

In FY 2006 the Corps continued remedial activities through July 2006. Quantities of contaminated soil have increased significantly over those in the Record of Decision requiring a significant increase in funding to complete the project

In FY 2007 funds are being used to continue the remedial action.

In FY 2008 funds will be used to continue the remedial action which is now scheduled for completion in FY 2010 depending upon the availability of funds.

MISSOURI

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
St. Louis Downtown Site St. Louis, MO St. Louis District	225,117,000	127,077,000	11,300,000	13,300,000	16,100,000	17,000,000	40,340,000

The St. Louis Downtown Site and vicinity properties are located in St. Louis, Missouri. The site is comprised of an operational chemical manufacturing facility (Mallinckrodt Inc.) and 36 surrounding properties used by a variety of interests for industrial and commercial purposes. The primary contaminants of concern are radium-226, thorium-230, uranium-238, progeny, metals, and organic compounds. The extent of contamination includes 17 acres where contaminated soils are accessible for remediation (17 buildings, subsurface soil, and vicinity properties). The primary regulators/stakeholders include the U.S. Environmental Protection Agency Region VII, Missouri Department of Natural Resources, and the St. Louis Oversight Committee. In 1998, a Record of Decision (ROD) for Accessible Soils was signed to allow the removal of approximately 87,000 cubic yards of contaminated soils. The total estimated Federal cost shown above does not reflect possible costs of addressing contamination in inaccessible soils.

In FY 2006, in accordance with the Record of Decision, the Corps completed the response action for two Mallinckrodt plant areas and thirteen vicinity properties and completed design for the PSC Metals vicinity property. A total of 10,125 cubic yards of contaminated soils were removed. In addition, the Corps initiated the Remedial Investigation process for the inaccessible areas at the St. Louis Downtown Site.

In FY 2007, the Corps is initiating the Remedial Investigation field work for inaccessible soils, completing the remedial design for the Plant 6 West area, and remediating approximately 15,000 cubic yards from a vicinity property.

FY 2008 funds will be used to remediate approximately 20,000 cubic yards from the Plant 6 West and a vicinity property and to continue work on the Feasibility Study for inaccessible soils.

The completion schedule will depend on the overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

Mississippi Valley Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Latty Avenue Properties/Hazelwood Interim Storage Site, Berkeley, MO St. Louis District	186,836,323	63,955,000	2,300,000	1,873,000	13,000,000	15,000,000	90,708,323

The Latty Avenue Properties site is comprised of several different tracts of land in North St. Louis County, Missouri. The project includes an 11-acre site, encompassing the Hazelwood Interim Storage Site (HISS) and FUTURA Coatings on Latty Avenue, and the Latty Avenue Vicinity Properties, which are at various nearby locations. The Hazelwood Interim Storage Site and FUTURA Coatings were placed on the National Priority List in 1989. The primary contaminants of concern are radium-226, thorium-230, and uranium-238. Surface and subsurface soils are known to be contaminated at levels, which pose an unacceptable human health risk based on projected future land use scenarios. The primary regulators/stakeholders include the Environmental Protection Agency Region VII, Missouri Department of Natural Resources, and the St. Louis Oversight Committee.

In FY 2006, the Corps completed the design investigation of the HISS/Futura area and began design for four vicinity properties.

In FY 2007, the Corps is completing design work for and beginning remedial action/excavation on three vicinity properties, and beginning design on an additional vicinity property. Approximately 10,000 cubic yards of contaminated soil is being remediated.

FY 2008 funds will be used to excavate and ship approximately 20,000 cubic yards of contaminated soil. Remedial action will be completed on three vicinity properties.

The completion schedule will depend on overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

Mississippi Valley Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
St. Louis Airport Site, Vicinity Properties, St. Louis, MO St. Louis District	106,957,504	39,739,000	1,900,000	1,634,000	3,000,000	7,000,000	53,684,504

The St. Louis Airport Site (SLAPS) Vicinity Properties consists of 78 properties in North St. Louis County, Missouri. The contaminated sites include former ball fields (located directly north of SLAPS), areas along haul roads, and Coldwater Creek. The primary contaminants of concern are radium-226, thorium-230, and uranium-238. Dispersion of radioactive material occurred by direct migration from SLAPS via air or water, or through vehicular distribution along the roadways. (This is the case for most of the roadway, shoulder, and ditch contamination.) The properties are used for residential, commercial, industrial, recreational and transportation (road easement) purposes. The primary regulators/stakeholders include the Environmental Protection Agency, Region VII, Missouri Department of Natural Resources, and the St. Louis Oversight Committee. The Record of Decision for this site was finalized in FY 2005. A Potentially Responsible Party investigation is underway.

In FY 2006, funds were used to finalize the assessment of properties previously addressed by the Department of Energy to ensure compliance with the Record of Decision, initiate design investigation for three vicinity properties and to complete the final status survey and release one vicinity property.

In FY 2007, the Corps is beginning design work on three properties, completing final status surveys on five vicinity properties and remediating approximately 1,000 cubic yards.

FY 2008 funds will be used to complete three designs and initiate removal of contaminated material on one vicinity property. Approximately 8,000 cubic yards will be remediated.

The completion schedule will depend on overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

Mississippi Valley Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
St. Louis Airport Site, St. Louis, MO St. Louis District	310,964,000	229,756,000	38,300,000	30,180,000	11,700,000	500,000	528,000

The St. Louis Airport Site (SLAPS) consists of 21.7 acres north of Lambert International Airport in North St. Louis County, Missouri. The site contamination is bordered by McDonnell Boulevard on the north and east, Coldwater Creek on the west, Banshee Road and Norfolk and Western Railway on the south. The ditches immediately adjacent to the north and south of SLAPS are considered part of this location. The primary contaminants of concern are radium-226, thorium-230, and uranium-238. The St. Louis Airport Authority owns the property. The primary regulators/stakeholders include the U.S. Environmental Protection Agency Region VII, Missouri Department of Natural Resources, and the St. Louis Oversight Committee. A Potentially Responsible Party Investigation is underway. The site was placed on the National Priority List in 1989.

In FY 2006, in accordance with the 2005 Record of Decision, the Corps performed design work, removed and shipped approximately 78,000 cubic yards.

In FY 2007, the Corps is removing and shipping approximately 18,000 cubic yards of contaminated soil. This will complete the excavation required at the project in accordance with the Record of Decision. A report documenting the remedial action for closeout is being drafted and circulated with the State of Missouri and US EPA for review.

FY 2008 funds will be used to perform groundwater monitoring and long term management activities in accordance with the Record of Decision.

The completion schedule will depend on overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

North Atlantic Division

NEW JERSEY

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
DuPont Chambers Works Deepwater, NJ Philadelphia District	22,210,000 – 29,630,000*	11,203,000	3,400,000	1,487,000	1,500,000	1,000,000	3,620,000 – 11,040,000*

The DuPont Chambers Works site is a 700-acre active chemical plant located in Pennsville and Carneys Point Townships on the southeastern shore of the Delaware River, north of the I-295 Delaware Memorial Bridge, and adjacent to the residential community of Deepwater, N.J. The plant is owned and operated by E.I. DuPont de Nemours & Company. Operations involving uranium at the Chambers Works site began in 1942. As part of its work on the Manhattan Engineer District (MED) Program, DuPont worked on developing a process for converting uranium oxide to produce uranium tetrafluoride and small quantities of uranium metal. The major contaminant is U-238 found in both soil and water samples. Through FY2004, the Corps continued site characterization and Remedial Investigation / Feasibility Study (RI/FS) activities for soil contamination and investigation of possible groundwater contamination, conducted Technical Project Planning sessions with the stakeholders including the New Jersey Department of Environmental Protection, held Restoration Advisory Board Meetings, conducted extensive coordination with the landowner, and completed work-plans for on-site investigations and completed soil sampling and well installation.

In FY 2005 and 2006, the Corps completed the final Intrusive Site Soil Contamination Investigation and analysis (on Operable Unit #3). The Corps began incorporating this data into the Site-Wide remedial investigation and risk assessment. The groundwater investigation was continued.

In FY 2007, the Corps completes the Draft RI and Risk Assessment reports for Regulator review and comment and initiates the Site-Wide Feasibility Study.

Requested funds for FY 2008 shall be used to finalize the draft RI and Risk Assessment (RA) reports and continue the Site-wide Feasibility Study. Groundwater contamination investigation and analysis shall be incorporated into the final RI/FS reports.

The schedule for completion of site remediation is to be determined.\*\*

\*The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate. Current project completion schedules and cost estimates do not include any remedial design or remediation action for potential ground-water contamination.

\*\* The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

North Atlantic Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Maywood Site Maywood, N.J. New York District	450,000,000- 500,000,000*	243,739,591	33,893,409	29,530,000	30,000,000	30,000,000	79,067,000- 130,067,000*

The Maywood site is included on the Environmental Protection Agency Superfund National Priorities List. The Corps is currently working under the Federal Facilities Agreement (FFA) signed by DOE and EPA, while we negotiate a Corps/EPA FFA. Site consists of 140 acres of residential, commercial and industrial property totaling 88 commercial and residential properties, located 20 miles north of Newark adjacent to Interstate 80 and State Route 17. There are approximately 281,000 cubic yards of subsurface contaminated material containing thorium-232, radium-226, and uranium-238. The United States owns 11.7 acres of the site, which is being used as a staging area during cleanup operations. The Stepan Company occupies part of the site and operates a chemical factory processing a patented product. Sears operates a large central distribution warehouse (leased) on the site. In the mid-1980's, 25 residential vicinity properties were remediated. In 1994 an Engineering Evaluation/Cost Analysis (EE/CA) by the Department of Energy approved a further interim removal action to remediate an additional 39 vicinity properties. As of the end of FY 00, all of the 39 vicinity properties included in the 1994 EE/CA have been remediated, including 23 completed by the Corps (15 in FY 98, 7 in FY99, and 1 in FY00). Additionally, the Corps has completed a Remedial Investigation/Feasibility Study/Proposed Plan, Record of Decision, Remedial Design (RI/FS/PP/ROD/RD) for soils and buildings on the remainder of the site, prepared an EE/CA for an interim removal action involving 10 commercial properties impacted by New Jersey Department of Transportation projects, initiated remedial action for the remainder of soils and completed potentially responsible party (PRP) negotiations through the Department of Justice with the Stepan Company.

In FY 2006, funds were used to continue remedial action for the remainder of the soils. In addition, the Corps continued to develop the groundwater feasibility study and proposed plan.

In FY 2007, the Corps continues the remedial action under the soils ROD, completes the feasibility study and proposed plan and initiates the groundwater ROD.

In FY 2008, funds will be used to continue the remedial action under the soils ROD and to complete the groundwater ROD.

The schedule for completion of site remediation is to be determined.\*\*

\*The total cost will depend upon the specific groundwater cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a groundwater Record of Decision, it will be possible to provide a more definitive estimate.

\*\*The completion schedule will depend on the groundwater cleanup standards established for this site and overall funding constraints.



APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

North Atlantic Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Middlesex Sampling Plant Middlesex, NJ New York District	84,660,000- 112,890,000*	77,598,000	2,110,000	4,900,000	15,000,000	7,300,000	0- 5,982,000*

The Middlesex site is a Federal government-owned site located in Middlesex, NJ. There are also 36 Vicinity Properties (VPs). Primary contaminants are Uranium-232, Radium-226, and Thorium-232. The Manhattan Engineer District (MED) established the Middlesex Sampling Plant (MSP) in 1943 for use in sampling, storage, and shipment of uranium, thorium, and beryllium ores. MED operations ended in 1955, and the Atomic Energy Commission (AEC) later used the site for storage and performed limited sampling of thorium residues. In 1967, the AEC terminated activities at the MSP and decontaminated onsite structures to meet criteria then in effect. From 1969 to 1979, the site served as a US Marine Corps training center. In 1980, the MSP was returned to the Department of Energy (as AEC's successor), which designated it for clean up under FUSRAP. MSP was used for interim storage of two piles of radioactively contaminated soils removed from the vicinity properties (VPs) and from the Middlesex Municipal Landfill (MML). The Middlesex site was added to the Environmental Protection Agency Superfund National Priorities List (NPL) in FY 1999. Through the end of FY 2001, the Corps has removed and disposed of the MML pile and the VP pile. Additionally, the Corps has completed a Remedial Investigation/Feasibility Study/Proposed Plan, Record of Decision, Remedial Design (RI/FS/PP,ROD/RD) for soils on the remainder of the site. Coordination with Federal and state agencies, and local communities is continuing.

In FY 2006, the Corps continued the soils remediation and the Groundwater Feasibility Study and Proposed Plan.

In FY 2007, the Corps continues the soils remediation and completes the Groundwater Feasibility Study and Proposed Plan and initiates a Groundwater ROD. Additionally, the Corps continues to work with USEPA Region 2 to develop a Federal Facilities Agreement.

FY 2008 funds will be used to complete the soils remediation and complete the Groundwater ROD.

The schedule for completion of site remediation is to be determined.\*\*

\* The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate.

\*\* The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

Great Lakes and Ohio River Division

NEW YORK

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Ashland 1 Tonawanda, NY Buffalo District	107,158,383	89,180,915	14,477,468	2,550,000	500,000	150,000	300,000*

The Ashland 1 Site is a privately-owned 10.8-acre site in the Town of Tonawanda that was contaminated with radiological waste, including thorium, uranium and radium. The radiological waste disposed of at this site originated at the nearby Linde plant, where uranium ore was processed. The Record of Decision (ROD) for this site, which included the Ashland 2 Site (remediation completed in 1999), was signed in April 1998 and called for excavation and off-site disposal of radiologically-contaminated wastes. The Corps excavated, transported and disposed of about 173,000 tons out of state from the Ashland 1 Site, and backfill of the site was completed in December 2003. Additional contamination was found in Rattlesnake Creek that originated from the Ashland 1 and 2 Sites. An Explanation of Significant Differences (ESD) was prepared and coordinated with regulators prior to remediation of the Rattlesnake Creek Site. The Corps excavated, transported and disposed of a total of about 33,000 tons out of state from the Rattlesnake Creek Site and site restoration was completed in FY 2006. All told about 258,400 tons were excavated and disposed of out of state from the Ashland Sites. The completed Ashland Sites remediation returns 25 acres of land to unrestricted use. The Ashland project is being coordinated with the New York State Department of Environmental Conservation, New York State Department of Health, and U.S. Environmental Protection Agency.

FY 2006 funds were used to complete the Rattlesnake Creek site restoration work and the Construction Report.

In FY 2007, the Corps continues the closeout of the Ashland Record of Decision, turns the site over to the Department of Energy for long-term stewardship and supports Department of Justice (DOJ) in Potentially Responsible Party (PRP) cost recovery activities.

FY 2008 funds will be used to continue to support DOJ PRP cost recovery activities.

\*These additional funds are to support DOJ activities if necessary.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

North Atlantic Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Colonie Site Colonie, NY New York District	193,434,000 – 202,330,000*	160,229,000	12,350,000	10,525,000	2,030,000	2,500,000	5,800,000- 14,696,000*

The Colonie site consists of a total area of 11.2 acres plus 56 vicinity properties (VPs). The primary site was owned and operated by National Lead Industries (NL) from 1937-1984. The facility was used for electroplating and manufacturing various components from uranium and thorium. Radioactive materials released from the plant exhaust stacks spread to site buildings, portions of the grounds, and the 56 commercial and residential VPs. NL also dumped contaminated casting sand into the former Patroon Lake. By order of a New York State Court the NL plant shut down in 1984. Coordination is ongoing with the New York State Department of Environmental Conservation, and local leaders. The transfer of the property from NL to the Federal government in 1984 contained "hold harmless" language, which precludes holding NL as a PRP. At the time of transfer of FUSRAP execution to the Corps, the Department of Energy (DOE) had completed remediation of the vicinity properties; and in 1995 finalized an Engineering Evaluation/ Cost Analysis (EE/CA), authorizing a removal action to address soils contamination at the former NL property itself. Through FY 2002, the Corps disposed, off-site, stockpiled materials and excavated contaminated soils, in accordance with the DOE EE/CA; completed a reevaluation of the DOE EE/CA and issued an amended EE/CA and revised action memorandum; and continued the groundwater investigations. Additionally, the Corps has continued the removal action under the revised Action Memorandum and prepared a risk assessment and an EE/CA for the adjacent CSX vicinity property.

In FY 2006, funds were used to continue the removal action under the revised Action Memorandum.

In FY 2007, the Corps completes the removal action on the last adjacent VP (CSX parcel) and develops a draft groundwater Feasibility Study/Proposed Plan for the main site. An increased volume of contaminated soils encountered in FY06 was not able to be removed from the site. Currently contaminated soils are staged and covered on a concrete storage pad and pending additional funds will be shipped off site and sent to an approved disposal facility.

FY 2008 funds will be used to ship some contaminated soils off site and prepare a combined Soil and Groundwater ROD and decision document for the main site.

The schedule for completion of site remediation is to be determined.\*\*

\* Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate.

\*\* The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

Great Lakes and Ohio River Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Guterl Specialty Steel Lockport, NY Buffalo District	TBD*	315,000	250,000	300,000	2,320,000	2,500,000	TBD*

The former Guterl Specialty Steel site, a.k.a. Simmonds Saw and Steel Corporation, comprises about 70 acres in the City of Lockport, New York, approximately 20 miles north of Buffalo, New York. The site is bordered by residential and commercial properties to the north, State Route 93 to the west, and the New York State Barge Canal to the south. An active steel plant adjacent to the site is currently in operation. The site was used to perform rolling mill operations on about 35-million pounds of uranium metals and 40-thousand pounds of thorium metals between 1948 and 1955 under contracts issued by the Atomic Energy Commission (AEC). The buildings used to support the process encompass about 9 acres, and are abandoned. The site also includes a 9-acre landfill. The Guterl project is being coordinated with the New York State Department of Environmental Conservation, the New York State Department of Health, and the U.S. Environmental Protection Agency.

FY 2006 funds were used to continue Remedial Investigation activities.

In FY 2007, the Corps continues Remedial Investigation activities.

FY2008 funds will be used to complete the Remedial Investigation and initiate a Feasibility Study.

The schedule for completion of site remediation is to be determined.\*\*

\*A preliminary cost estimate for site remediation will be developed during the Feasibility Study phase.

\*\* The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

Great Lakes and Ohio River Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Linde Air Products Tonawanda, NY Buffalo District	245,900,000	134,648,857	25,321,143	20,280,000	16,950,000	24,950,000	23,750,000

The Linde site is located in the Town of Tonawanda, a suburb north of Buffalo, NY.

The project consists of two distinct areas: the original Linde site that is now owned and occupied by Praxair, Inc.; and a designated vicinity property, the Tonawanda Landfill and Mudflats area that is located about 1.5 miles north of Praxair. The Linde site is a former industrial complex in an urban area that now serves as the worldwide research and development facility for Praxair. Currently, employment is approximately 1,000 people. A public elementary school and numerous residential properties adjoin the property. Radioactive contamination generated by former Manhattan Engineering District activities, in the soils, buildings, and groundwater at the Linde site are being evaluated and remediated, as required under CERCLA. The principal radionuclides of concern are radium, thorium, uranium, and their decay products. Project activities are coordinated with the New York State Department of Environmental Conservation, the New York State Department of Health, and the U.S. Environmental Protection Agency. Since last reported project costs have increased (\$23,700,000) due to the discovery of additional contaminated materials in previously inaccessible and uncharacterized areas.

The Tonawanda Landfill and the Mudflats Area is a separately designated vicinity property located about 1.5 mile north of the Linde site. Remedial investigations of this property have been completed.

FY 2006 funds were used to continue soils remedial action and complete the Proposed Plan on the Groundwater operable unit and to initiate the draft Tonawanda Landfill and Mudflats Area Proposed Plan.

In FY 2007, the Corps continues the Linde soils remedial action, completes the Record of Decision on the Groundwater operable unit, and issues a Proposed Plan for the Tonawanda Landfill and Mudflats Vicinity Property.

FY 2008 funds will be used to continue Linde soils remedial action and complete the Record of Decision for the Tonawanda Landfill and Mudflats Vicinity Property.

\* Total estimated Federal cost is adjusted to include \$25,051,000 of DOE costs not previously included, and \$23,700,000 in increased projects cost as explained above.

\*\*The completion schedule will depend on overall funding constraints, and the results of the groundwater operable unit investigation and Record of Decision.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

Great Lakes and Ohio River Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional To Complete After FY 2008 \$
Niagara Falls Storage Site Lewiston, NY Buffalo District	319,220,000 – 425,620,000	39,176,915	2,616,085	3,150,000	2,500,000	3,500,000	268,277,000 - 374,677,000

The Niagara Falls Storage Site (NFSS) is a 191-acre Federally-owned site with: a below ground interim waste containment structure (IWCS) for radioactive residues and waste; several buildings, one of which contains isolated areas of fixed, low activity radioactive contamination; and several vicinity properties (VPs). It is located in Lewiston Township, 19 miles northwest of Buffalo, NY. Material stored in the IWCS includes 234,770 cy of low activity radioactive waste and 14,390 cy of high activity radioactive residues. The IWCS is covered with an interim cap designed to retard radon emissions and rainwater infiltration. The Corps is performing the Remedial Investigation (RI) and Feasibility Study (FS) to: determine the nature and extent of contamination; determine risk and develop cleanup criteria; and develop alternatives to remediate the site. Yearly fixed costs cover cap maintenance and site monitoring and security. The NFSS project is being coordinated with the New York State Department of Environmental Conservation, New York State Department of Health, and U.S. Environmental Protection Agency.

FY 2006 accomplishments include continued progress on the RI report and FS, completion of the draft RI report, and continuation of yearly site maintenance, monitoring and surveillance activities. The Corps also continued its community outreach.

In FY 2007, the Corps finalizes the RI, releases the final RI report, and continues the FS. Maintenance, monitoring and surveillance activities continue to assure integrity of the waste containment structure, and community outreach continues.

FY 2008 funds will be used to conclude the FS study and release the final FS Report; initiate work on the Proposed Plan (PP); continue maintenance, monitoring, and surveillance activities; and community outreach.

\*The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate. The current cost estimate assumes that some action will be taken to address the entire site. The Feasibility Study will also evaluate a number of options, including the feasibility of leaving the containment structure intact for transfer to DOE for Long-term Stewardship under the MOU between the Corps and DOE. Selection of this alternative would likely result in a lower overall cost for the FUSRAP completion.

\*\* The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

Great Lakes and Ohio River Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional To Complete After FY 2008 \$
Seaway Site Tonawanda, NY Buffalo District	37,197,500 – 80,410,000	7,995,000	285,000	385,000	400,000	400,000	27,732,500 – 70,945,000

The Seaway Site, a closed sanitary landfill, is a privately owned 93-acre site in the Town of Tonawanda, 3 miles north of Buffalo, New York. The Seaway Site is contaminated, principally on 16 acres, with radiological waste, including thorium, uranium and radium. The waste that was disposed of at the site originated from the Linde Air Products plant, where uranium ore was processed. There are four areas associated with the Seaway Site; Areas A, B, C and D. Cleanup of accessible (i.e., outside of the landfill) Area D soils was included in the Record of Decision for the remediation of the Ashland 1 and Ashland 2 Sites. During remediation of the Ashland 1 and 2 Sites contamination was identified that extends beyond the fence line into the north and south sides of the Seaway Site that will be considered as part of the Seaway Site. The Seaway project is being coordinated with the New York State Department of Environmental Conservation, the New York State Department of Health, and the U.S. Environmental Protection Agency.

FY 2006 funds were used to continue preparation of the Feasibility Study Addendum (FSA), and begin preparation of the Proposed Plan.

In FY 2007, the Corps completes the Feasibility Study Addendum, and completes the draft Proposed Plan.

FY 2008 funds will be used to complete the Record of Decision.

\*The total cost will depend upon the specific cleanup standards established for this site, taking into account input from Federal, state, and local regulators, the general public and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate. The increase in the low end of the range is based on a containment alternative (closing the landfill), while the upper limit is based on a better estimate for partial alternative. Total estimated costs increases are based on draft FSA estimates.

\*\* The completion schedule will depend on the cleanup standards for the site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

North Atlantic Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Sylvania Corning Plant Hicksville, NY New York District	TBD*	0	220,000	1,250,000	1,500,000	1,500,000	TBD*

The Hicksville site consists of a total area of 10.5 acres divided into three separate properties located at 70, 100, and 140 Cantiague Rock Road. The Verizon entities, current owners of the 140 and 70 properties and lessees of the 100 property, are the corporate successors to the Atomic Energy Commission's (AEC) contract operator. The facility was used for two distinct but similar operations. The first operation (1952-1965) was under contracts with the AEC for research, development and production primarily in support of the Government's nuclear weapons program. The other operation (1952-1967) was AEC licensed work primarily for the production of reactor fuel, and other reactor core components. Radioactive materials, metals and volatile organic compounds were discharged to the plant sumps, which contaminated site soils and groundwater. Coordination is ongoing with the New York State Department of Environmental Conservation, and Verizon entities.

In FY 2006, funds were used to initiate a Remedial Investigation and Baseline Risk Assessment and to coordinate with stakeholders.

In FY 2007, the Corps continues a Remedial Investigation and Baseline Risk Assessment and stakeholder coordination.

FY 2008 funds will be used to complete the Remedial Investigation and Baseline Risk Assessment.

\*A preliminary cost estimate for site remediation, if necessary, will be determined during the development of the Feasibility Study.



OHIO

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY 2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional to Complete After FY 2008 \$
Former Harshaw Chemical Company Cleveland, OH Buffalo District	38,970,000 – 51,950,000 *	6,945,000	1,300,000	1,900,000	1,950,000	1,450,000	25,425,000 – 38,405,000

The former Harshaw Chemical Company is a privately owned, 40-acre site located approximately 5 miles southwest of downtown Cleveland, Ohio. The area is predominately an industrial setting bordering the on Cuyahoga River. From 1944 through 1959, the Manhattan Engineering District (MED) and the Atomic Energy Commission (AEC) contracted Harshaw for the purpose of supporting the Nation's early atomic energy program. Various forms of uranium were produced for shipment to Oak Ridge, Tennessee, for isotopic separation and enrichment. In 1960, the site was released for unrestricted use by the AEC, following decontamination efforts by Harshaw, under the guidance of the AEC. The Harshaw project is being coordinated with the Ohio Environmental Protection Agency, the Ohio Department of Health, and the U.S. Environmental Protection Agency.

FY 2006 funds were used to complete the Remedial Investigation (RI) Report and Historic Aerial Photograph Analysis and to award the Potentially Responsible Party (PRP) Analysis contract.

In FY 2007, the Corps completes a technical addendum to the RI Report and PRP Analysis, disposes of Investigative Derived Waste from the RI field activities, and initiates the Feasibility Study (FS).

FY 2008 funds will be used to complete the FS.

The schedule for completion of the site remediation is to be determined.\*\*

\*The total cost will depend upon the specific cleanup standards established for this site, taking into account input from federal, state, and local regulators, the general public, and other stakeholders. Once a final cleanup plan for the site has been approved in a Record of Decision, it will be possible to provide a more definitive estimate.

\*\* The completion schedule will depend on the cleanup standards established for this site and overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

Great Lakes and Ohio River Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional To Complete After FY 2008 \$
Luckey Site Luckey, OH Buffalo District	58,929,700	14,211,000	255,000	500,000	500,000	400,000	43,063,700

The Luckey Site is a privately owned 40-acre site located approximately 22 miles southeast of Toledo, Ohio. FUSRAP contamination on site consists of both radiological and chemical wastes. The primary radiological contaminants at the site include radium, uranium and thorium. The primary chemical contaminants at the site are beryllium and lead. In 1949, the Atomic Energy Commission constructed a beryllium production facility at the site. The waste solutions and sludge from the beryllium production operations were stored in lagoons on the plant property. Waste solutions were also discharged into Toussaint Creek. In 1951 and 1952, the site operator purchased 1,000 tons of radiologically contaminated scrap steel from the Lake Ontario Storage Area. The scrap steel is believed to be the source of the radiological contamination. In 1958, beryllium production operations ceased. The Luckey project is being coordinated with the Ohio Environmental Protection Agency, Ohio Department of Health, and the U.S. Environmental Protection Agency.

FY 2006 funds were used to complete the Record of Decision (ROD) for the Soils Operable Unit, and conduct annual groundwater sampling.

In FY 2007, the Corps completes the Record of Decision for the Groundwater Operable Unit, conducts annual groundwater sampling, and begins remedial design.

FY 2008 funds will be used to continue remedial design and conduct annual groundwater sampling.

The total estimate Federal cost is reduced from the prior ranges due to a ROD-based cost estimate.

The schedule for completion of the site remediation is to be determined.\*\*

\*\* The completion schedule will depend on overall funding constraints.

APPROPRIATION TITLE: Formerly Utilized Sites Remedial Action Program, Fiscal Year 2008

Great Lakes and Ohio River Division

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional To Complete After FY 2008 \$
Painesville Site Painesville, OH Buffalo District	22,800,000	9,000,000	1,250,000	5,950,000	5,400,000	200,000	1,000,000

The Painesville Site is a privately owned 30-acre site located approximately 22 miles northeast of Cleveland, Ohio. In the early 1940's, the Defense Plant Corporation financed construction of a magnesium production facility on property acquired by the Federal Government. The Diamond Magnesium Company received approximately 1,650 tons of FUSRAP-related radiologically contaminated scrap steel from the Lake Ontario Storage Area, which resulted in contamination of the site. The site is contaminated with radiological waste, including uranium, radium, thorium, and their natural decay products. This site is currently owned by Chemtura, Inc. Uniroyal Rubber Co., Inc., a predecessor to Chemtura, closed this facility in July 1999. The plant has been demolished and the owner is performing environmental remediation for chemical contamination. 1,330 cubic yards of contaminated soils were removed from the site in the fall of 1998 under an Engineering Evaluation/Cost Analysis (EE/CA) and Action Memorandum. Circumstances did not permit complete removal of radiological contamination under the EE/CA so the Corps initiated a focused Remedial Investigation/Feasibility Study (RI/FS) to determine the extent of additional contamination and establish the final cleanup criteria. The Corps completed the Proposed Plan in 2005, and the Record of Decision was signed in 2006 establishing the remedy of excavation and off site disposal of radiological contaminants exceeding the cleanup criteria. The Painesville site is being coordinated with the Ohio Environmental Protection Agency, the Ohio Department of Health, and the U.S. Environmental Protection Agency.

FY 2006 funds were used to complete the Record of Decision, perform pre-remediation sampling, award remediation contracts, and begin remedial design.

In FY 2007, the Corps completes the remedial design, and initiates the site remediation.

FY 2008 funds will be used to complete the site remediation, prepare closure reports, and begin transition of the site to the Department of Energy.

The completion schedule will depend on the overall funding constraints.

PENNSYLVANIA

Site	Total Estimated Federal Cost \$	Allocation Prior to FY 2005 \$	Allocation FY 2005 \$	Allocation FY2006 \$	Allocation FY 2007 \$	Requested Allocation FY 2008 \$	Additional To Complete After FY 2008 \$
Shallow Land Disposal Area (SLDA) Parks Township, PA Pittsburgh District	52,840,000	6,210,000	1,220,000	1,410,000	1,000,000	4,000,000	39,000,000

The Shallow Land Disposal Area (SLDA) site encompasses 44-acres of land located in Parks Township, Pennsylvania located about 23 miles northeast of Pittsburgh, Pennsylvania. A nuclear fuel production facility located in Apollo, Pennsylvania generated wastes that were emplaced into a series of 10 trenches at the SLDA from the period 1960 to 1970. The contamination is believed to consist primarily of uranium and thorium associated with production of nuclear materials at the Apollo facility. The 10 trenches occupy an area of about 1.2 acres of the 44-acre SLDA. The site is currently owned by BWX Technologies and operates under a Nuclear Regulatory Commission (NRC) license. Any future Corps activities at the site will be consistent with the Memorandum of Understanding (MOU) between the Corps and the NRC for coordination on cleanup and decommissioning of the FUSRAP sites with NRC-licensed facilities, dated July 5, 2001. This project is being coordinated with the Pennsylvania Department of Environmental Protection, the Pennsylvania Department of Health, and the U.S. Environmental Protection Agency.

FY 2006, the Corps completed the Feasibility Study (FS), the draft Proposed Plan (PP) and developed the scope of work for the remediation work plans.

In FY 2007, the Corps completes the Proposed Plan (PP) and the Record of Decision (ROD), and initiates remediation work plans.

FY 2008 funds will be used to complete the remediation work plans and initiate site remediation.

A feasibility study level, preliminary cost estimate for site remediation has been determined.

ENVIRONMENT  
CONSTRUCTION  
CONTINUING AUTHORITIES PROGRAM

APPROPRIATION TITLE: Construction, FY 2008

**Aquatic Ecosystem Restoration (CAP Section 206)**

Appropriation for FY 2007	\$29,700,000*
Allocation Requested for FY 2008	\$11,278,000

GENERAL: Section 206 of the Water Resources Development Act of 1996 (PL 104-303), as amended, authorizes up to \$25,000,000 annually to carry out aquatic ecosystem restoration projects that will improve the quality of the environment, are in the public interest and are cost-effective. Non-Federal interests shall provide 35 percent of the cost of construction including provision of all lands, easements, rights-of-way, and necessary relocations. Non-Federal interests pay 100 percent of the cost of operation, maintenance, replacement and rehabilitation. Not more than \$5,000,000 in Federal funds may be allocated to a project at a single locality.

PROPOSED ACTIVITIES FOR FY 2008: Proposed allocations are as follows:

SECTION 206 PROJECT OR ACTIVITY	AMOUNT
AQUATIC ECOSYSTEM RESTORATION FOR ROSE BAY, VOLUISIA CO., FL	2,530,000
ARKANSAS RIVER FISHERIES HABITAT RESTORATION, PUEBLO, CO	25,000
BOTTOMLESS LAKE STATE PARK, NM	1,452,000
CARPENTER CREEK, WA	1,000,000
CLEAR LAKE, IA	2,000
CONFLUENCE POINT STATE PARK, MO	86,000
EUGENE DELTA PONDS, OR	1,485,000
GOOSE CREEK, CO	27,000
JACKSON CREEK, GWINETT CO., GA	100,000
MALDEN RIVER ECOSYSTEM, MA	81,000
NINIGRET & CROSS MILLS PONDS, CHARLESTOWN, RI	800,000
ORLAND PARK, IL	2,800,000
ST. HELEN-NAPA RIVER RESTORATION	150,000
STORM LAKE, IA	10,000
WWTP, STEPHENVILLE, TX	600,000
Section 206 Coordination Account	130,000
Section 206 Totals	\$11,278,000

\* Assumed allocation. Final, actual allocations yet to be determined.

APPROPRIATION TITLE: Construction, FY 2008

**Project Modifications for Improvement of the Environment (CAP Section 1135)**

Appropriation for FY 2007	\$29,700,000*
Allocation Requested for FY 2008	\$11,190,000

GENERAL: Section 1135 of the Water Resources Development Act of 1986 (PL 99-662), as amended authorizes review of Corps water resources projects to determine the need for structural or operational modifications for the purpose of improving the quality of the environment in the public interest; to determine if the operation of such projects has contributed to the degradation of the quality of the environment; and to carry out a program of such modifications that are feasible and consistent with authorized project purposes. Up to \$25,000,000 may be appropriated annually. The non-Federal share of the cost of any modifications will be 25 percent. Not more than \$5,000,000 in Federal funds may be expended on any single modification or measure pursuant to Section 1135.

PROPOSED ACTIVITIES FOR FY 2008: Proposed allocations are as follows:

SECTION 1135 PROJECT OR ACTIVITY	AMOUNT
ALLIN'S COVE, BARRINGTON, RI	5,000
BAYOU DESIARD, MONROE, LA	1,707,000
BENNINGTON LAKE DIVERSION DAM, WA	338,000
BLOOMINGTON AREA RESTORATION, LONG BRANCH LAKE, MO	25,000
BLUE VALLEY WETLANDS, JACKSON CO., MO	19,000
BOYD'S SALT MARSH RESTORATION, RI	203,000
DELAWARE BAY OYSTER RES, NJ	783,000
ECOSYSTEM REVITALIZATION @ ROUTE 66	3,637,000
FERN RIDGE LAKE MARSH RESTORATION, OR	30,000
GREEN RIVER DAM, OUTLET WORKS MODIFICATIONS, KY	200,000
KANAHA POND WILDLIFE SANCTUARY RESTORATION, MAUI, HI	845,000
LAKE ST. JOSEPH, TENSAS PARISH, LA	71,000
LOWER COLUMBIA SLOUGH, OR	1,605,000
LOWER KINGMAN ISLAND	110,000
PRISON FARM SHORELINE HABITAT, ND	74,000
RATHBUN LAKE HABITAT RESTORATION PROJECT, IA	500,000
STEEP BANK CREEK, FELSENTAL NWR, AR	59,000
WALLA WALLA RIVER SECTION 1135, OR	824,000
Section 1135 Coordination Account	155,000
Section 1135 Total	\$11,190,000

\* Assumed allocation. Final, actual allocations yet to be determined.

5 February 2007

ENVIRONMENT  
REMAINING ITEMS  
CONSTRUCTION



APPROPRIATION TITLE: Construction, FY 2008

**Aquatic Plant Control (APC) Program**

Allocation FY 2007

\$3,000,000

Tentative Allocation FY 2008

\$3,000,000

GENERAL: The Aquatic Plant control research is the nation's only Federally authorized research program for technology that is necessary to manage non-indigenous aquatic plant species. The objective of the research is to develop cost effective, environmentally compatible aquatic plant control technology, including biological, chemical, and integrated control methods. Research involving management strategies and applications and ecological factors are also being conducted. The control technology, management strategies and ecological understanding resulting from APC research forms the national base in the APC area, and is applied not only to control aquatic plant infestations in public waters nationwide, but is also essential to cost effective, environmentally compatible, aquatic plant control for the operation and maintenance of Corps projects. Nearly 3.0 million acres nationwide are now infested with problem aquatic plants. The Corps manages over 5.6 million surface acres of water at its reservoir projects alone, with significant additional acreage as part of navigation projects. Eurasian watermilfoil, hydrilla, alligatorweed, and other exotic species continue to expand from local infestations, many of which are interfering with navigation, flood control, hydropower production water quality and aquatic habitat. New colonies of objectionable aquatic plants continue to be found, such as hydrilla in the southeast and Eurasian watermilfoil in the Midwest. Direct applications of technologies developed by research under the Aquatic Plant Control Program have resulted in the reduction of waterhyacinth in the Gulf Coast States and California of over 3 million acres. In addition, technology developed by the APC research program has resulted in a nationwide reduction of alligatorweed. The Aquatic Plant Control Program is authorized by Section 104 of the River and Harbor Act of 1958, (P.L. 85-500), as amended by Section 104 of the River and Harbor Act of 1962, (P.L. 87-874), Section 302 of the River and Harbor Act of 1965 (P.L. 89-298), and Sections 103, 105, and 941 of the Water Resources Development Act of 1986 (P.L. 99-662), Section 225 of the Water Resource Development Act of 1996 and Section 205 of the Water Resource Development Act of 1999 (P.L. 106-53). The APC program has an annual expenditure ceiling of \$15,000,000.

BUDGET REQUEST: The \$3,000,000 requested for Fiscal Year 2008 will be used for continued research efforts for aquatic plant control technologies to support the operation and maintenance of Corps projects. Efforts will focus on control methods for submersed aquatic plants (i.e. Eurasian watermilfoil, hydrilla, and giant salvinia), with emphasis on biological control agents, chemicals, integrated control methods, management strategies and ecological factors that impact non-indigenous aquatic plant species. Research efforts are fully coordinated with other Federal, state, and local agencies to prevent duplication of effort and to ensure that research under this program is consistent with, and complementary to, the research efforts of others. The cost of research dealing with problems/outputs of regional or nationwide importance is 100 percent Federal.

APPROPRIATION TITLE: Construction, FY 2008

**Estuary Restoration Program (Title I of P.L. 106-457)**

Allocation FY 2007	\$5,000,000*	Tentative Allocation FY 2008	\$5,000,000
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GENERAL: The Estuary Restoration Act of 2000, Title I of P.L. 106-457 authorizes the Secretary to carry out estuary habitat restoration projects recommended for implementation by the Estuary Habitat Restoration Council and meeting various criteria. Each project must address restoration needs identified in an estuary habitat restoration plan, be consistent with the estuary habitat restoration strategy developed under the Act, include a monitoring plan that is consistent with the standards for monitoring developed under the Act and include satisfactory assurance from the non-Federal interests proposing the project that the non-Federal interest will have the capability to carry out items of local cooperation, including maintenance. Except when innovative technology is involved the Federal share may not exceed 65 percent of the cost of the project. Non-Federal interests shall provide lands, easements, rights-of-way and relocations and are responsible for all costs associated with operating (including monitoring), maintaining, replacing, repairing, and rehabilitating the projects. Nine projects are in various stages of implementation. Examples include a dam removal on the Eastern Shore of Maryland, filling of mosquito ditches to restore wetlands in Florida, and reconnecting a back water slough thus restoring tidal floodplain wetland habitat in Oregon. FY 2007 and FY 2008 funds would be to support new projects.

BUDGET REQUEST: The \$5,000,000 requested for Fiscal Year 2008 is to continue the program of estuary habitat restoration, including initiation of new projects.  
\*Assumed allocation. Final actual allocations yet to be determined.

ENVIRONMENT

REMAINING ITEMS

OPERATION AND MAINTENANCE

## 1. Operation and Maintenance

### 12 Actions for Change to Improve Operation and Maintenance

Total Estimated Federal Cost	Allocation Prior to FY 2007	Allocation FY 2007	Tentative Allocation FY 2008	Additional to Complete After FY 2008
62,000,000	200,000	TBD	10,500,000	51,300,000

#### SCOPE:

USACE has embarked on an ambitious program for quickly incorporating the lessons learned from Hurricane Katrina into “Twelve Actions for Change” which recognizes that sustainability is critical for infrastructure where failures would have major life and safety or economic consequences. The 12 Actions are interrelated and interdependent, and will be fully integrated for execution. Specifically, through Operation and Maintenance funding of the 12 Actions, USACE will improve its ability to perform operation and maintenance using a systems approach that incorporates risk-based asset management to prioritize investment; develop processes to enhance multi-objective decision making for post-construction evaluation of project outcomes to be supported by enhancing data collection on project operations, repairs and modifications using existing O&M databases and integration with P2 and geospatial databases; update or develop methods and technologies , for analyzing the engineering and operational reliability of local protection systems; develop risk analysis concepts fully, including social and environmental impacts; integrate multiple efforts for consistency across business lines considering the life cycle of the system and its components; scaleable and adaptable for practical application; update policy and guidance for operations and maintenance; incorporate adaptive management and flexibility into decision making for the system life cycle to account for dynamic conditions and nonlinear processes such as subsidence, climate variability, altered seismicity, variable development and land use trends, shifts in rainfall-runoff relationships, and channel migration; and reinforce the integration of asset management and the USACE’s Environmental Operating Principles (EOPs) into the life cycle of USACE infrastructure. These results represent accomplishments in Actions 1, 2, 3, 5, 6, 7 and 12, and are strongly linked to successful execution of Actions 4, 8, 9, 10, and 11.

FY 2008 funding builds upon work accomplished using 2006 emergency supplemental appropriations for the Interagency Performance Evaluation Task Force, Hurricane Protection Decision Chronology, and 2007 funding to respond to critical needs identified by these groups and by the National Academy of Science, the American Society of Civil Engineers’ External Review Panel, and others in the wake of Hurricane Katrina. USACE will incorporate the new methods in related programs funded in the Operation and Maintenance account.

#### JUSTIFICATION:

Using the Program Assessment Rating Tool, an assessment of the USACE Flood and Storm Damage Reduction Program determined that there exists a need to evaluate how completed flood and coastal storm damage reduction projects help reduce the Nation’s overall flood damages; provide greater coordination between USACE, FEMA, and other federal, state, and local agencies that set floodplain and coastal zone management policies; and improving risk communication and public involvement in risk reduction strategies. A related assessment of the Environmental Stewardship Program noted that USACE needs to take a more proactive management approach that involves better knowledge of its resources; the improved understanding of adaptive management approaches to dynamic conditions and nonlinear processes under this program will assist in achieving Environmental Stewardship goals. Similarly, the asset management initiatives in this program will assist the Hydropower business line, for which the assessment reported that USACE lacks an overall short- and long-term asset management strategy. The 12 Actions for Change will allow the USACE to support the implementation of flexible, adaptive management to accommodate the range of uncertainty over the life cycle of the system, thus reducing the occurrence of failures and poor performance that adversely impact public health and safety.

#### FY 2007 Accomplishments

FY 2007 funding enabled USACE to improve the methods for Inspection of Completed Works (ICW) to include an assessment of engineering safety and operational adequacy based on the results of IPET and the HPDC; begin to link or upgrade existing O&M databases to be capable of tracking incremental changes in the watershed and infrastructure; develop guidance for levee certification; improve the methods and technology for gage survivability during major coastal storms; improve the engineering reliability models of levees and floodwalls due to the effects of surges and overtopping; begin developing the methods for incorporating adaptive and asset management and sustainability into decision making (particularly a nationwide standard that accounts for changes in the vertical geodetic datum and subsidence); and update guidance.

#### FY 2008 Activities

In FY08, Actions 1, 2, 3, 5, 6, 7, and 12 (Employ an Integrated, Comprehensive Systems-Based Approach, Employ Risk-based Concepts in Planning, Design, Construction, Operations and Major Maintenance; Continuously Reassess and Update Policy for Program Development, Planning Guidance, Design and Construction Standards; Employ Adaptive Planning and Engineering Systems; Focus on Sustainability; and Invest in Research, respectively) will be emphasized, and the output of these Actions is strongly linked to successfully executing the FY07 program in these Actions and the FY07 and FY08 programs in Actions 8, 9, and 10 (Assess and Modify Organizational Behavior, Effectively Communicate Risk, and Establish Public Involvement Risk Reduction Strategies, respectively). Fiscal Year 2008 funding will be used to continue updating of update policy and guidance for operations and maintenance; continue development of supporting technologies to improve the effectiveness of post-authorization evaluations and assessments of incremental change; enhance the use of adaptive management in project operation and maintenance; begin to implement the nationwide datum and associated subsidence standards and certification; develop framework for Learning Watersheds and conduct workshops to infuse sustainability into practice; develop supporting methods and technologies to support the transformation of ICW from project element inspection to a risk-based system assessment; advance the understanding of risk and reliability modeling of surge and overtopping; and continue progress on gage survivability.

Appropriation Title: Operation and Maintenance, General – Fiscal Year 2008

**Cultural Resources (NAGPRA/Curation)**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$3,000,000
Allocation Requested for FY 2007	2,000,000
Allocation Requested for FY 2008	1,500,000
Increase in FY 2008 from FY 2007	0

AUTHORIZATION: The Native American Graves Protection and Repatriation Act (NAGPRA) enacted on 16 November 1990 contains data gathering, reporting, consultation, and permitting provisions that have near-term and long-term implications for Civil Works programs and projects.

JUSTIFICATION: The Native American Graves Protection and Repatriation Act (NAGPRA) addresses the recovery, treatment, and repatriation of Native American and Native Hawaiian cultural items by Federal agencies and museums. As defined by the Act, cultural items are human remains, associated funerary objects, unassociated funerary objects, sacred objects, and objects of cultural patrimony. In FY 1994, the Corps began the process of inventorying human remains and associated funerary objects and completing summaries as mandated by the legislation. In addition, the Corps is responsible for curation of cultural resource materials collected from its water resources development projects. A Mandatory Center of Expertise (MCX), located at the St. Louis District, provides overall management of the Corps NAGPRA programs and serves as an information source and a centralized base for curation compliance and contracting. The MCX will facilitate the assurance of consistent nationwide program implementation and operation. The Corps is responsible for the curation of at least 46,255 cubic feet of artifacts collected from its water resources development projects and at least 3,511 linear feet of associated records. Curation of these materials, the largest volume of all federal agencies responsible for this activity, is required by a number of public laws with implementing guidance in 36 CFR Part 79. Corps collections represent over 80 percent of the total DoD collections. These extensive collections are located hundreds of curation facilities across the nation. The MCX, in providing NAGPRA inventories, will assist in establishing the extent of Corps holdings. The costs are to accomplish NAGPRA work and to fund MCX curation support to the districts.

PROPOSED ACTIVITIES FOR FY 2008: The MCX and Corps Commands will continue the process of inventorying Native American and Native Hawaiian human remains and associated funerary objects and complete summaries of unassociated funerary objects, sacred objects, and objects of cultural patrimony as mandated by the legislation. Information will be made available to interested individuals and groups through notices in the Federal Register. Through MCX provided funding, districts will continue to be engaged in formal consultation with tribes and organizations for the legislated purpose of repatriating cultural objects for which there are legitimate claims. The MCX will continue to fulfill its chartered activities in support of other military services and DoD, lead in the implementation of an agency-wide, long-term plan for the curation of USACE archeological collections (heritage assets). The MCX will also continue to work closely with USACE commands on the implementation of final guidelines and procedures for field collection of archeological materials and the long-term treatment of those collections. In this regard, the MCX will act as a source of expertise for processing and rehabilitation of USACE collections. Finally, the MCX will provide leadership in the development of a training curriculum on the treatment of heritage assets and working in consultation with all stakeholders, take initial steps to make this training available to USACE and other appropriate DoD managers and decision makers. As Corps compliance with NAGPRA Sections 5 – 7 approaches completion, the MCX will place staffing and other resources in a position to accelerate the rehabilitation and long-term management of archeological artifacts collections and associated records that are assessed to be at the greatest risk of deterioration or damage.

Appropriation Title: Operation and Maintenance, General – Fiscal Year 2008

ACCOMPLISHMENTS IN PRIOR YEARS: A Mandatory Center of Expertise (MCX), located at the St. Louis District, was established to provide overall management of the Corps NAGPRA programs and has served as an information source, a centralized base for curation compliance and contracting. The MCX has facilitated the assurance of consistent nationwide program implementation and operation. The MCX, in providing NAGPRA inventories, has assisted in establishing the extent of Corps holdings. Associated with efforts to complete NAGPRA, the MCX began the process of effectively managing the Corps curation efforts. Corps reporting compliance with NAGPRA will approach approximately 75% by the start of FY07. A phased task plan for curation has been developed.

Appropriation Title: Operation and Maintenance, General -- Fiscal Year 2008

**Stewardship Support Program**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost for Continuing Program	\$500,000
Allocation Requested for FY 2007	\$500,000
Allocation Requested for FY 2008	\$500,000
Change of FY 2008 from FY 2007	\$0

AUTHORIZATION: This program is conducted under the authority of ER 1130-2-540, Chapter 7.

JUSTIFICATION: The Stewardship Support Program was established in FY 02 to provide broad support to Environment-Stewardship function at operating projects by assisting in the identification of national program needs, the development of new national program activities, strategic program planning, and the recommendation of national stewardship program funding priorities. Support will be provided in refining the Environment–Stewardship business program strategic plan and goals, and budget processes, to address the targeted outcomes of the overall Corps CW Strategic Plan, using input from the Stewardship Advisory Team, other associated Corps business programs and stakeholders. Goals and objectives will be refined, and actions will be identified to achieve them. Funding this program from a single source reflects the nationwide application and supports standardization in program direction and outputs.

The SSP supports the Environment–Stewardship program by addressing issues or initiatives that have a broad applicability to many USACE Civil Works projects. The three basic components of the SSP are:

(1) Focused Management Actions and Studies. These activities are to implement a course of action or practice within field office activities, a region, or nationwide. Examples of management actions might include developing/ assembling an array of management practices for establishing riparian habitat, or creating a forum to share common experiences, build teams, and disseminate information. Examples of management studies might include the riparian corridors research or conducting studies on management of threatened and endangered species.

(2) Policy Guidance and Management Support. Such activities relate to the development and/ or implementation of guidance. Examples of policy guidance included facilitating cooperative agreements with stewardship non-governmental organizations, or amending the annual Budget Engineer Circular to provide emphasis on conducting inventories of regionally or nationally significant resources.

(3) Information Exchange. These activities are designed to build, integrate, and share our knowledge base to support greater understanding of the environment and the impacts of program work.

PROPOSED ACTIVITIES FOR FY 2008:

1. Focused Management Actions and Studies: A national assessment of environmental threats that impact environmental stewardship is needed. This assessment would identify the level threat experienced by projects from, for example, invasive species, shoreline erosion, or adjacent land uses. This assessment would assist in prioritizing work efforts and funding for stewardship. In addition, a study to determine benchmarks for various costs related to stewardship activities is needed in order to adequately compare work efforts in budgeting and performance output efforts.



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2. Policy Guidance and Management Support: Policy guidance development is needed to support inventory and master plan implementation. Inventories and Master Plans are the focus of two of the Environment-Stewardship strategic goals. Specific guidance is needed to assure common understanding of their requirements and to assure a level of standard output is achieved. Stakeholder outreach tools are recommended to achieve a greater level of stakeholder and customer input in program implementation. A survey, specific to the Environment-Stewardship program, is planned to identify areas of needed management and customer satisfaction improvement. Continued development of the budget evaluation tool, E-S BEST, is essential to improve the Environment-Stewardship budget development process. Refinement of this tool is critical to assist in prioritizing proposed budget packages and developing various budget scenarios to improve the efficiency and effectiveness of the Stewardship program. Strategic planning is also required in order to accomplish the CW strategic goals. The Environment-Stewardship program requires the update of its program strategic plan in order remain in accord with the CW strategic objectives and to assist in accomplishing the CW program goals.
3. Information exchange. NRM Gateway development in support of Environment-Stewardship initiatives in necessary and should continue. This information exchange tool is designed improve communication within the NRM community and preserve the organization's institutional knowledge. Stewardship components of the NRM Gateway will be developed in priority order based on input from the Stewardship Advisory Team (SAT). Technology transfer of best management practices is also required. Best management practices related to inventory implementation; the management of riparian resources and significant resources such as native prairie lands will be developed and shared. Support for SAT will be provided to facilitate team meetings and other SAT initiatives.

ACCOMPLISHMENTS IN PRIOR YEARS: The allocation of project operations and maintenance funds to conduct specified nationwide (multiple project) activities to improve the efficiency and cost effectiveness of the Environment-Stewardship business program has been employed, with subcommittee staff knowledge and concurrence, since the late 1990s for activities similar to those identified for FY 2007. Past products of the Stewardship Support Program include the initial set of Environment-Stewardship program performance measures, which are in accord with the Government Performance and Results Act and used to measure and monitor priority program outputs and outcomes; the Stewardship module of the Operations and Maintenance Business Information Link (OMBIL), which receives and stores selected data concerning the stewardship of project natural resources, and which provides for retrieval of that information by all levels of the Corps; the pilot version of the Environment-Stewardship Budget Evaluation System (E-S BEST) used to assist in developing budget scenarios and ranking budget proposals. Components of the Environment-Stewardship portion of the Natural Resources Management (NRM) Gateway, a knowledge management tool for the NRM community, have been completed and others are underway. Support to Headquarters was provided to develop and refine; the Environment-Stewardship business program strategic plan and 5-year development plan, the program management plan for the Environment-Stewardship Community of Practice, and the annual Environment-Stewardship program development guidance.

# OPERATION AND MAINTENANCE



## JUSTIFICATION OF ESTIMATE

### APPROPRIATION TITLE: Operation and Maintenance, FY 2008

This appropriation funds operation, maintenance, and related activities at the water resources projects that the Corps Engineers operates and maintains. Work to be accomplished consists of dredging, repair, and operation of structures and other facilities, as authorized in the various River and Harbor, Flood Control, and Water Resources Development Acts. The work is accomplished in the following water resource regions as delineated by watershed boundaries:

Region 01 New England  
Region 02 Mid-Atlantic  
Region 03 South Atlantic-Gulf  
Region 04 Great Lakes  
Region 05 Ohio River  
Region 06 Tennessee River  
Region 07 Upper Mississippi River

Region 08 Lower Mississippi River  
Region 09 Souris-Red-Rainy  
Region 10 Missouri River  
Region 11 Arkansas-White-Red  
Region 12 Texas-Gulf  
Region 13 Rio Grande  
Region 14 Upper Colorado River

Region 15 Lower Colorado River  
Region 16 Great Basin  
Region 17 Pacific Northwest  
Region 18 California  
Region 19 Alaska  
Region 20 Hawaii  
Region 21 Caribbean

### GLOSSARY of DISTRICT ACRONYMS

LRB Buffalo District  
LRC Chicago District  
LRD Great Lakes & Ohio River Division  
LRE Detroit District  
LRH Huntington District  
LRL Louisville District  
LRN Nashville District  
LRP Pittsburgh District  
MVD Mississippi Valley Division  
MVK Vicksburg District  
MVM Memphis District  
MVN New Orleans District  
MVP St. Paul District  
MVR Rock Island District  
MVS St. Louis District  
NAB Baltimore District

NAD North Atlantic Division  
NAE New England District  
NAN New York District  
NAO Norfolk District  
NAP Philadelphia District  
NWD Northwestern Division  
NWK Kansas City District  
NWO Omaha District  
NWP Portland District  
NWS Seattle District  
NWW Walla Walla District  
POA Alaska District  
POD Pacific Ocean Division  
POH Honolulu District  
SAC Charleston District  
SAD South Atlantic Division

SAJ Jacksonville District  
SAM Mobile District  
SAS Savannah District  
SAW Wilmington District  
SPD South Pacific Division  
SPL Los Angeles District  
SPK Sacramento District  
SPN San Francisco District  
SPA Albuquerque District  
SWD Southwestern Division  
SWF Fort Worth District  
SWG Galveston District  
SWL Little Rock District  
SWT Tulsa District

## JUSTIFICATION OF ESTIMATE

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 01 New England** The drainage within the United States that ultimately discharges into: (a) the Bay of Fundy; (b) the Atlantic Ocean within and between the states of Maine and Connecticut; (c) Long Island Sound north of the New York-Connecticut state line; and (d) the Riviere St. Francois, a tributary of the St. Lawrence River. Includes all of Maine, New Hampshire and Rhode Island and parts of Connecticut, Massachusetts, New York and Vermont.

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance and rehabilitation in the region by business line as follows: (Dollars in Thousands)

### Connecticut

Black Rock Lake, CT  
Colebrook River, CT  
Hancock Brook Lake, CT  
Hop Brook Lake, CT  
Inspection of Completed Works, CT  
Long Island Sound DMMP, CT  
Mansfield Hollow Lake, CT  
Northfield Brook Lake, CT  
Project Condition Surveys, CT  
Stamford Hurricane Barrier, CT  
Thomaston Dam, CT  
West Thompson Lake, CT

### Maine

Inspection of Completed Works, ME  
Project Condition Surveys, ME  
Surveillance of Northern Boundary Waters, ME

### Massachusetts

Barre Falls Dam, MA  
Birch Hill Dam, MA  
Boston Harbor, MA  
Buffumville Lake, MA  
Cape Cod Canal, MA  
Charles River Natural Valley Storage Area, MA  
Conant Brook Lake, MA  
East Brimfield Lake, MA  
Hodges Village Dam, MA  
Inspection of Completed Works, MA  
Knightville Dam, MA  
Littleville Lake, MA  
New Bedford Fairhaven and  
Acushnet Hurricane Barrier, MA  
Project Condition Surveys, MA  
Tully Lake, MA  
West Hill Dam, MA  
Westville Lake, MA

### New Hampshire

Blackwater Dam, NH  
Edward Macdowell Lake, NH  
Franklin Falls Dam, NH  
Hopkinton - Everett Lakes, NH  
Inspection of Completed Works, NH  
Otter Brook Lake, NH  
Project Condition Surveys, NH  
Surry Mountain Lake, NH

### Rhode Island

Inspection of Completed Works, RI  
Project Condition Surveys, RI

### Vermont

Ball Mountain Lake, VT  
Inspection of Completed Works, VT  
North Hartland Lake, VT  
North Springfield Lake, VT  
Townshend Lake, VT  
Union Village Dam, VT

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 01 New England (Continued)**

The FY 2008 budget includes funding for operation, maintenance, and rehabilitation in the region by business line as follows:

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
NAD	Commercial Navigation	0	0	10,452	7,059	17,511	11,986	9,168	21,154
	Environment	0	0	1,970	184	2,154	2,112	184	2,296
	Flood and Coastal Storm Damage Reduction	0	0	13,939	3,861	17,800	14,586	5,641	20,227
	Recreation	0	0	3,172	2,066	5,238	3,284	1,797	5,081
	BL Not Recorded in FY	56,223	55,603	0	0	0	0	0	0
<b>NAD Division Total in Region</b>		<b>56,223</b>	<b>55,603</b>	<b>29,533</b>	<b>13,170</b>	<b>42,703</b>	<b>31,968</b>	<b>16,790</b>	<b>48,758</b>
<b>Region 1 Total</b>		<b>56,223</b>	<b>55,603</b>	<b>29,533</b>	<b>13,170</b>	<b>42,703</b>	<b>31,968</b>	<b>16,790</b>	<b>48,758</b>

## JUSTIFICATION OF ESTIMATE

### APPROPRIATION TITLE: Operation and Maintenance, FY 2008

**Region 02 Mid-Atlantic** - The drainage within the United States that ultimately discharges into: (a) the Atlantic Ocean within and between the states of New York and Virginia; (b) Long Island Sound south of the New York-Connecticut State Line; and (c) the Riviere Richelieu, a tributary of the St. Lawrence River. Includes all of Delaware and New Jersey and the District of Columbia, and parts of Connecticut, Maryland, Massachusetts, New York, Pennsylvania, Vermont, Virginia and West Virginia.

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

#### Delaware

Delaware Bay Coastline, Roosevelt Inlet  
To Lewes Beach, DE  
Intracoastal Waterway, Delaware R To  
Chesapeake Bay, DE & MD  
Intracoastal Waterway, Rehoboth Bay  
To Delaware Bay, DE  
Mispillion River, DE  
Murderkill River, DE  
Project Condition Surveys, DE  
Wilmington Harbor, DE

#### District of Columbia

Inspection of Completed Works, DC  
Potomac and Anacostia Rivers, DC  
(Drift Removal)  
Project Condition Surveys, DC  
Washington Harbor, DC

#### Maryland

Assateague Island, MD  
Baltimore Harbor and Channels  
(50 Foot), MD  
Baltimore Harbor, MD (Drift Removal)  
Cumberland, MD and Ridgeley, WV  
Inspection of Completed Works, MD  
Jennings Randolph Lake, MD & WV  
Ocean City Harbor and Inlet,  
and Sinepuxent Bay, MD  
Poplar Island, MD

Project Condition Surveys, MD  
Rhodes Point to Tylerton, MD  
Scheduling Reservoir Operations, MD  
Wicomico River, MD

#### New Jersey

Barnegat Inlet, NJ  
Cape May Inlet to Lower Township, NJ  
Cold Spring Inlet, NJ  
Delaware River at Camden, NJ  
Delaware River, Philadelphia To The  
Sea, NJ, PA & DE  
Delaware River, Philadelphia, PA  
To Trenton, NJ  
Inspection of Completed Works, NJ  
Lower Cape May Meadows,  
Cape May Point, NJ  
Manasquan River, NJ  
New Jersey Intracoastal Waterway, NJ  
Newark Bay, Hackensack And  
Passaic Rivers, NJ  
Passaic River Flood Warning Systems, NJ  
Project Condition Surveys, NJ  
Raritan River, NJ  
Salem River, NJ  
Shark River, NJ  
Shoal Harbor and Compton Creek, NJ  
Shrewsbury River, Main Channel, NJ

#### New York

Almond Lake, NY  
Arkport Dam, NY  
Buttermilk Channel, NY  
East Rockaway Inlet, NY  
East Sidney Lake, NY  
Eastchester Creek, NY  
Fire Island Inlet to Jones Inlet, NY  
Flushing Bay and Creek, NY  
Great South Bay, NY  
Hudson River Channel, NY  
Hudson River, NY (Maint)  
Hudson River, NY (O&C)  
Inspection of Completed Works, NY  
Jamaica Bay, NY  
Jones Inlet, NY  
Lake Montauk Harbor, NY  
Long Island Intracoastal Waterway, NY  
Moriches Inlet, NY  
New York and New Jersey Channels, NY  
New York Harbor, NY  
New York Harbor, NY & NJ (Drift Removal)  
New York Harbor, NY (Prevention of  
Obstructive Deposits)  
Port Chester Harbor, NY  
Project Condition Surveys, NY  
Shinnecock Inlet, NY

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 02 Mid-Atlantic (Continued)**

Southern New York Flood Control  
Projects, NY  
Westchester Creek, NY  
Whitney Point Lake, NY

**Pennsylvania**

Alvin R Bush Dam, PA  
Aylesworth Creek Lake, PA  
Beltzville Lake, PA  
Blue Marsh Lake, PA  
Cowanesque Lake, PA  
Curwensville Lake, PA  
Foster Joseph Sayers Dam, PA  
Francis E Walter Dam, PA  
General Edgar Jadwin Dam  
And Reservoir, PA

Inspection of Completed Works, PA  
Prompton Lake, PA  
Raystown Lake, PA  
Scheduling Reservoir Operations, PA  
Schuylkill River, PA  
Stillwater Lake, PA  
Tioga - Hammond Lakes, PA  
York Indian Rock Dam, PA

**Vermont**

Inspection of Completed Works, VT  
Narrows of Lake Champlain, VT & NY

**Virginia**

Atlantic Intracoastal Waterway - ACC, VA  
Atlantic Intracoastal Waterway - DsSC VA  
Chincoteague Inlet, VA  
Gathright Dam And Lake Moomaw, VA  
Hampton Rds, Norfolk & Newport News  
Harbor, VA (Drift Removal)  
Inspection of Completed Works, VA  
James River Channel, VA  
Little Wicomico River, VA  
Norfolk Harbor, VA  
Norfolk Harbor, VA (Prevention of  
Obstructive Deposits)  
Project Condition Surveys, VA  
Tylers Beach, VA  
Waterway on the Coast Of Virginia, Va  
York River, VA



**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 02 Mid-Atlantic (Continued)**

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
LRD	Flood and Coastal Storm Damage Reduction	0	0	5	0	5	5	0	5
	(blank)	6	4	0	0	0	0	0	0
<b>LRD Division Total in Region</b>		<b>6</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>0</b>	<b>5</b>
NAD	Commercial Navigation	0	0	11,900	111,674	123,574	13,373	118,848	132,221
	Environment	0	0	1,631	517	2,148	1,780	359	2,139
	Flood and Coastal Storm Damage Reduction	0	0	15,150	3,143	18,293	18,526	4,692	23,218
	Recreation	0	0	3,803	2,227	6,030	3,961	2,017	5,978
	Water Supply	0	0	45	0	45	55	0	55
	BL Not Recorded in FY	141,386	142,082	0	0	0	0	0	0
<b>NAD Division Total in Region</b>		<b>141,386</b>	<b>142,082</b>	<b>32,529</b>	<b>117,561</b>	<b>150,090</b>	<b>37,695</b>	<b>125,916</b>	<b>163,611</b>
<b>Region 2 Total</b>		<b>141,392</b>	<b>142,086</b>	<b>32,534</b>	<b>117,561</b>	<b>150,095</b>	<b>37,700</b>	<b>125,916</b>	<b>163,616</b>

## JUSTIFICATION OF ESTIMATE

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 03 South Atlantic--Gulf** The drainage area that ultimately discharges into: (a) the Atlantic Ocean within and between the states of Virginia and Florida; (b) the Gulf of Mexico within and between the states of Florida and Louisiana; and (c) the associated waters. Includes all of Florida and South Carolina, and parts of Alabama, Georgia, Louisiana, Mississippi, North Carolina, Tennessee and Virginia.

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

<b>Alabama</b>	Intracoastal Waterway, Caloosahatchee River to Anclote R, FL	Hartwell Lake, GA & SC
Alabama - Coosa Comprehensive Water Study, AL	Intracoastal Waterway, Jacksonville To Miami, FL	Inspection of Completed Environmental Projects, GA
Alabama - Coosa River, AL	Jacksonville Harbor, FL	Inspection of Completed Works, GA
Black Warrior and Tombigbee Rivers, AL	Jim Woodruff Lock and Dam, Lake Seminole, FL, AL & GA	J Strom Thurmond Lake, GA & SC
Gulf Intracoastal Waterway, AL	Lake Worth Inlet, FL	Project Condition Surveys, GA
Millers Ferry Lock and Dam, William 'Bill' Dannelly Lake, AL	Manatee Harbor, FL	Richard B Russell Dam And Lake, GA & SC
Mobile Harbor, AL	Miami Harbor, FL	Savannah Harbor, GA
Project Condition Surveys, AL	Miami River, FL	Savannah River below Augusta, GA
Robert F Henry Lock and Dam, AL	Nassau County, FL	West Point Dam and Lake, GA & AL
Scheduling Reservoir Operations, AL	Okeechobee Waterway, FL	<b>Mississippi</b>
Tennessee - Tombigbee Waterway Wildlife Mitigation, AL & MS	Palm Beach Harbor, FL	Biloxi Harbor, MS
Tennessee - Tombigbee Waterway, AL & MS	Panama City Harbor, FL	East Fork, Tombigbee River, MS
Walter F George Lock And Dam, AL & GA	Pensacola Harbor, FL	Gulfport Harbor, MS
Water/Environmental Certification, AL	Project Condition Surveys, FL	Inspection of Completed Works, MS
<b>Florida</b>	Removal of Aquatic Growth, FL	Okatibbee Lake, MS
AIWW, Norfolk, VA To St Johns River, FL, GA, SC, NC & VA	Scheduling Reservoir Operations, FL	Pascagoula Harbor, MS
Brevard County, Canaveral Harbor, FL	St Johns County, FL	Pearl River, MS & La
Canaveral Harbor, FL	Tampa Harbor, FL	Project Condition Surveys, MS
Central and Southern Florida, FL	Water/Environmental Certification, FL	Water/Environmental Certification, MS
Escambia and Conecuh Rivers, FL	<b>Georgia</b>	Atlantic Intracoastal Waterway, NC
Everglades and South Florida, SBC Reservation Plan, FL	Allatoona Lake, GA	<b>North Carolina</b>
Fernandina Harbor, FL	Apalachicola, Chattahoochee And Flint Rivers, GA, AL & FL	B Everett Jordan Dam and Lake, NC
Inspection of Completed Works, FL	Atlantic Intracoastal Waterway, GA	Cape Fear River above Wilmington, NC
	Brunswick Harbor, GA	Falls Lake, NC
	Buford Dam And Lake Sidney Lanier, GA	Inspection of Completed Works, NC
	Carters Dam And Lake, GA	Manteo (Shallowbag) Bay, NC
		Masonboro Inlet and Connecting Channels, NC

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE: Operation and Maintenance, FY 2008**

**Region 03 South Atlantic -Gulf (Continued)**

Morehead City Harbor, NC  
 New River Inlet, NC  
 Project Condition Surveys, NC  
 Rollinson Channel, NC  
 Silver Lake Harbor, NC  
 W Kerr Scott Dam and Reservoir, NC  
 Wilmington Harbor, NC

**South Carolina**

Atlantic Intracoastal Waterway, SC  
 Charleston Harbor, SC  
 Cooper River, Charleston Harbor, SC  
 Folly Beach, SC  
 Georgetown Harbor, SC  
 Inspection of Completed Works, SC

Project Condition Surveys, SC

**Virginia**

John H Kerr Lake, VA & NC  
 Philpott Lake, VA  
 Rudee Inlet, VA

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
MVD	Commercial Navigation	0	0	283	0	283	140	72	212
	Flood and Coastal Storm Damage Reduction	0	0	7	0	7	8	0	8
	BL Not Recorded in FY	130	251	0	0	0	0	0	0
<b>MVD Division Total in Region</b>		<b>130</b>	<b>251</b>	<b>290</b>	<b>0</b>	<b>290</b>	<b>148</b>	<b>72</b>	<b>220</b>
NAD	Commercial Navigation	0	0	0	953	953	0	1,023	1,023
	BL Not Recorded in FY	502	1,133	0	0	0	0	0	0
<b>NAD Division Total in Region</b>		<b>502</b>	<b>1,133</b>	<b>0</b>	<b>953</b>	<b>953</b>	<b>0</b>	<b>1,023</b>	<b>1,023</b>
SAD	Commercial Navigation	0	0	28,200	147,776	175,976	33,777	156,461	190,238
	Environment	0	0	10,880	2,114	12,994	10,835	2,300	13,135
	Flood and Coastal Storm Damage Reduction	0	0	15,049	7,944	22,993	15,555	6,492	22,047
	Hydropower	0	0	19,876	32,395	52,271	22,229	34,834	57,063
	Recreation	0	0	27,755	21,346	49,101	33,941	15,639	49,580
	Water Supply	0	0	525	0	525	725	0	725
	BL Not Recorded in FY	406,382	338,461	0	0	0	0	0	0
<b>SAD Division Total in Region</b>		<b>406,382</b>	<b>338,461</b>	<b>102,285</b>	<b>211,575</b>	<b>313,860</b>	<b>117,062</b>	<b>215,726</b>	<b>332,788</b>
<b>Region 3 Total</b>		<b>407,014</b>	<b>339,845</b>	<b>102,575</b>	<b>212,528</b>	<b>315,103</b>	<b>117,210</b>	<b>216,821</b>	<b>334,031</b>

## JUSTIFICATION OF ESTIMATE

### APPROPRIATION TITLE: Operation and Maintenance, FY 2008

**Region 04 Great Lakes** -- The drainage within the United States that ultimately discharges into: (a) the Great Lakes system, including the Lake surfaces, bays, and islands; and (b) the St. Lawrence River to the Riviere Richelieu drainage boundary. Includes parts of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania and Wisconsin.

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

#### Illinois

Chicago Harbor, IL  
Chicago River, IL  
Inspection of Completed Works, IL  
Lake Michigan Diversion, IL  
Project Condition Surveys, IL  
Surveillance of Northern Boundary Wtrs, IL  
Waukegan Harbor, IL  
Calumet Harbor and River, IL and IN

#### Indiana

Burns Waterway Harbor, IN  
Indiana Harbor, Confined Disposal Facility, IN  
Indiana Harbor, IN  
Inspection of Completed Works, IN  
Project Condition Surveys, IN  
Surveillance of Northern Boundary Wtrs, IN

#### Michigan

Channels IN Lake St Clair, MI  
Charlevoix Harbor, MI  
Detroit River, MI  
Grand Haven Harbor, MI  
Holland Harbor, MI

Inspection of Completed Works, MI  
Keweenaw Waterway, MI  
Manistee Harbor, MI  
Marquette Harbor, MI  
Muskegon Harbor, MI  
Ontonagon Harbor, MI  
Project Condition Surveys, MI  
Saginaw River, MI  
St Clair River, MI  
St Joseph Harbor, MI  
St Mary's River, MI  
Surveillance of Northern Boundary Waters, MI

#### Minnesota

Duluth - Superior Harbor, MN & WI  
Inspection of Completed Works, MN  
Project Condition Surveys, MN  
Surveillance of Northern Boundary Waters, MN  
Two Harbors, MN

#### New York

Black Rock Channel and Tonawanda Hbr, NY  
Buffalo Harbor, NY  
Inspection of Completed Works, NY  
Little Sodus Bay Harbor, NY  
Mount Morris Dam, NY  
Project Condition Surveys, NY  
Rochester Harbor, NY  
Surveillance of Northern Boundary Waters, NY

#### Ohio

Ashtabula Harbor, OH  
Cleveland Harbor, OH  
Conneaut Harbor, OH  
Lorain Harbor, OH  
Sandusky Harbor, OH  
Toledo Harbor, OH

#### Wisconsin

Fox River, WI  
Green Bay Harbor, WI  
Inspection of Completed Works, WI  
Kewaunee Harbor, WI  
Milwaukee Harbor, WI  
Project Condition Surveys, WI  
Sturgeon Bay, WI

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 04 Great Lakes** (Continued)

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
LRD	Commercial Navigation	0	0	15,739	70,010	85,749	16,482	76,190	92,672
	Environment	0	0	260	0	260	358	0	358
	Flood and Coastal Storm Damage Reduction	0	0	6,361	1,837	8,198	7,323	2,836	10,159
	Hydropower	0	0	432	592	1,024	441	616	1,057
	Recreation	0	0	704	623	1,327	702	527	1,229
	BL Not Recorded in FY	82,187	76,772	0	0	0	0	0	0
<b>LRD Division Total in Region</b>		<b>82,187</b>	<b>76,772</b>	<b>23,496</b>	<b>73,062</b>	<b>96,558</b>	<b>25,306</b>	<b>80,169</b>	<b>105,475</b>
<b>Region 4 Total</b>		<b>82,187</b>	<b>76,772</b>	<b>23,496</b>	<b>73,062</b>	<b>96,558</b>	<b>25,306</b>	<b>80,169</b>	<b>105,475</b>

## JUSTIFICATION OF ESTIMATE

### APPROPRIATION TITLE: Operation and Maintenance, FY 2008

**Region 05 Ohio River--** The drainage of the Ohio River Basin, excluding the Tennessee River Basin. Includes parts of Illinois, Indiana, Kentucky, Maryland, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia and West Virginia.

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

<b>Illinois</b>	Martins Fork Lake, KY	North Branch Kokosing River Lake, OH
Inspection of Completed Works, IL	Middlesboro Cumberland River Basin, KY	Paint Creek Lake, OH
<b>Indiana</b>	Nolin Lake, KY	Project Condition Surveys, OH
Brookville Lake, IN	Ohio River Locks and Dams, KY, IL, IN & OH	Roseville Local Protection Project, OH
Cagles Mill Lake, IN	Ohio River Open Channel Work, KY, IL, IN & OH	Roseville, OH
Cecil M Harden Lake, IN	Paintsville Lake, KY	Surveillance of Northern Boundary Waters, OH
Inspection of Completed Works, IN	Rough River Lake, KY	Tom Jenkins Dam, OH
J Edward Roush Lake, IN	Taylorsville Lake, Falls, of Ohio, KY	West Fork of MILI Creek Lake, OH
Mississinewa Lake, IN	Taylorsville Lake, KY	William H Harsha Lake, OH
Monroe Lake, IN	Wolf Creek Dam, Lake Cumberland, KY	<b>Pennsylvania</b>
Patoka Lake, IN	Yatesville Lake, KY	Allegheny River, PA
Salamonie Lake, IN	<b>Michigan</b>	Conemaugh River Lake, PA
Surveillance of Northern Boundary Wtrs, IN	Sebewaing River (Ice Jam Removal), MI	Crooked Creek Lake, PA
<b>Kentucky</b>	<b>New York</b>	East Branch Clarion River Lake, PA
Barkley Dam And Lake Barkley, KY & TN	Inspection of Completed Works, NY	Emsworth Locks & Dam, Ohio River, PA
Barren River Lake, KY	<b>Ohio</b>	Inspection of Completed Works, PA
Big Sandy Harbor, KY	Alum Creek Lake, OH	Johnstown, PA
Buckhorn Lake, KY	Berlin Lake, OH	Kinzua Dam and Allegheny Reservoir, PA
Carr Creek Lake, KY	Caesar Creek Lake, OH	Loyalhanna Lake, PA
Cave Run Lake, KY	Clarence J Brown Dam, OH	Mahoning Creek Lake, PA
Dewey Lake, KY	Deer Creek Lake, OH	Monongahela River, PA
Fish trap Lake, KY	Delaware Lake, OH	Ohio River Locks and Dams, PA, OH & WV
Grayson Lake, KY	Dillon Lake, OH	Ohio River Open Channel Work, PA, OH & WV
Green And Barren Rivers, KY	Inspection of Completed Works, OH	Project Condition Surveys, PA
Green River Lake, KY	Massillon Local Protection Project, OH	Punxsutawney, PA
Inspection of Completed Works, KY	Massillon, OH	Shenango River Lake, PA
Kentucky River, KY	Michael J Kirwan Dam And Reservoir, OH	Surveillance of Northern Boundary Waters, PA
Laurel River Lake, KY	Mosquito Creek Lake, OH	
Markland Locks and Dam, KY & IN (Major Rehab)	Muskingum River Lakes, OH	

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 05 Ohio River (Continued)**

Tionesta Lake, PA  
 Union City Lake, PA  
 Woodcock Creek Lake, PA  
 Youghiogheny River Lake, PA & MD

**Tennessee**

Center Hill Lake, TN  
 Cheatham Lock and Dam, TN  
 Cordell Hull Dam and Reservoir, TN  
 Dale Hollow Lake, TN  
 J Percy Priest Dam and Reservoir, TN  
 Old Hickory Lock and Dam, TN

**Virginia**

John W Flannagan Dam and Reservoir, VA  
 North Fork of Pound River Lake, VA

**West Virginia**

Beech Fork Lake, WV  
 Bluestone Lake, WV  
 Burnsville Lake, WV  
 East Lynn Lake, WV  
 Elk River Harbor, WV  
 Elkins, WV  
 Inspection of Completed Projects, WV

Inspection of Completed Works, WV  
 Kanawha River Locks and Dams, WV  
 Ohio River Locks and Dams, WV, KY & OH  
 Ohio River Open Channel Work, WV, KY & OH  
 R D Bailey Lake, WV  
 Stonewall Jackson Lake, WV  
 Summersville Lake, WV  
 Sutton Lake, WV  
 Tygart Lake, WV

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
LRD	Commercial Navigation	0	0	67,570	64,702	132,272	73,409	87,102	160,511
	Environment	0	0	5,660	524	6,184	4,890	158	5,048
	Flood and Coastal Storm Damage Reduction	0	0	52,624	4,762	57,386	59,067	32,701	91,768
	Hydropower	0	0	9,663	11,542	21,205	11,251	15,147	26,398
	Recreation	0	0	26,115	5,891	32,006	27,002	2,994	29,996
	Water Supply	0	0	257	0	257	593	0	593
	BL Not Recorded in FY	254,652	235,220	0	0	0	0	0	0
<b>LRD Division Total in Region</b>		<b>254,652</b>	<b>235,220</b>	<b>161,889</b>	<b>87,421</b>	<b>249,310</b>	<b>176,212</b>	<b>138,102</b>	<b>314,314</b>
<b>Region 5 Total</b>		<b>254,652</b>	<b>235,220</b>	<b>161,889</b>	<b>87,421</b>	<b>249,310</b>	<b>176,212</b>	<b>138,102</b>	<b>314,314</b>

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 06 Tennessee River** - The drainage of the Tennessee River Basin. Includes parts of Alabama, Georgia, Kentucky, Mississippi, North Carolina, Tennessee, and Virginia.

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

**Tennessee**

Chickamauga Lock, TN  
Tennessee River, TN

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
LRD	Commercial Navigation	0	0	5,670	14,886	20,556	6,456	16,948	23,404
	BL Not Recorded in FY	16,341	17,959	0	0	0	0	0	0
<b>LRD Division Total in Region</b>		<b>16,341</b>	<b>17,959</b>	<b>5,670</b>	<b>14,886</b>	<b>20,556</b>	<b>6,456</b>	<b>16,948</b>	<b>23,404</b>
<b>Region 6 Total</b>		<b>16,341</b>	<b>17,959</b>	<b>5,670</b>	<b>14,886</b>	<b>20,556</b>	<b>6,456</b>	<b>16,948</b>	<b>23,404</b>



## JUSTIFICATION OF ESTIMATE

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 07 Upper Mississippi River--** The drainage of the Mississippi River Basin above the confluence with the Ohio River, excluding the Missouri River Basin. Includes parts of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, South Dakota and Wisconsin.

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

### Illinois

Carlyle Lake, IL  
Farm Creek Reservoirs, IL  
Illinois Waterway (MVR Portion), IL & In  
Illinois Waterway (MVS Portion), IL & In  
Inspection of Completed Works, IL  
Kaskaskia River Navigation, IL  
Lake Shelbyville, IL  
Lock and Dam 24, Mississippi River, IL &  
MO (Major Rehab)  
Lock and Dam 27, Mississippi River, IL  
(Major Rehab)  
Miss River between MO River and  
Minneapolis (MVR Portion), IL  
Miss River between MO River and  
Minneapolis (MVS Portion), IL  
Rend Lake, IL

### Iowa

Coralville Lake, IA  
Inspection of Completed Works, IA  
Lock And Dam 11, Mississippi River, IA  
(Major Rehab)  
Lock And Dam 19, Mississippi River, IA  
(Major Rehab)  
Red Rock Dam and Lake Red Rock, IA  
Saylorville Lake, IA

### Minnesota

Bigstone Lake Whetstone River, MN & SD  
Inspection of Completed Works, MN  
Lac Qui Parle Lakes, Minnesota River, MN  
Minnesota River, MN  
Miss River between MO River and  
Minneapolis (MVP Portion), MN  
Project Condition Surveys, MN  
Red Lake Reservoir, MN  
Reservoirs at Headwaters of Mississippi  
River, MN

### Missouri

Clarence Cannon Dam and Mark Twain  
Lake, MO  
Inspection of Completed Environmental  
Projects, IL  
Inspection of Completed Works, MO  
Miss River between the Ohio and  
MO Rivers (Reg Works), MO and IL  
Union Lake, MO

### Wisconsin

Eau Galle River Lake, WI  
Inspection of Completed Works, WI  
Project Condition Surveys, WI  
Surveillance of Northern Boundary  
Waters, WI

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 07 Upper Mississippi River (Continued)**

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
LRD	Flood and Coastal Storm Damage Reduction	0	0	472	0	472	487	0	487
	BL Not Recorded in FY	507	521	0	0	0	0	0	0
<b>LRD Division Total in Region</b>		<b>507</b>	<b>521</b>	<b>472</b>	<b>0</b>	<b>472</b>	<b>487</b>	<b>0</b>	<b>487</b>
MVD	Commercial Navigation	0	0	68,971	126,932	195,903	71,570	121,253	192,823
	Environment	0	0	8,163	2,593	10,756	7,089	2,449	9,538
	Flood and Coastal Storm Damage Reduction	0	0	12,532	3,990	16,522	13,753	4,055	17,808
	Hydropower	0	0	1,003	484	1,487	1,099	548	1,647
	Recreation	0	0	16,163	6,499	22,662	17,751	3,585	21,336
	Water Supply	0	0	155	50	205	184	20	204
	BL Not Recorded in FY	202,603	209,550	0	0	0	0	0	0
<b>MVD Division Total in Region</b>		<b>202,603</b>	<b>209,550</b>	<b>106,987</b>	<b>140,548</b>	<b>247,535</b>	<b>111,446</b>	<b>131,910</b>	<b>243,356</b>
<b>Region 7 Total</b>		<b>203,110</b>	<b>210,071</b>	<b>107,459</b>	<b>140,548</b>	<b>248,007</b>	<b>111,933</b>	<b>131,910</b>	<b>243,843</b>

## JUSTIFICATION OF ESTIMATE

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 08 Lower Mississippi River** - The drainage area of: (a) the Mississippi River below its confluence with the Ohio River, excluding the Arkansas, Red, and White River Basins above the points of highest backwater effect of the Mississippi River in those basins; and (b) coastal streams that ultimately discharge into the Gulf of Mexico from the Pearl River Basin boundary to the Sabine River and Sabine Lake drainage boundary. Includes parts of Arkansas, Kentucky Louisiana, Mississippi, Missouri and Tennessee.

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

### **Arkansas**

Blakely Mt Dam, Lake Ouachita, AR  
Degray Lake, AR  
Helena Harbor, Phillips County, AR  
Inspection of Completed Works, AR  
Narrows Dam, Lake Greeson, AR  
Osceola Harbor, AR  
Ouachita and Black Rivers, AR and LA  
Project Condition Surveys, AR  
White River, AR

### **Illinois**

Inspection of Completed Works, IL

### **Kentucky**

Elvis Stahr (Hickman) Harbor, KY  
Inspection of Completed Works, KY

### **Louisiana**

Atchafalaya River and Bayous Chene,  
Boeuf and Black, LA  
Bayou Lafourche and Lafourche Jump  
Waterway, LA  
Bayou Pierre, LA  
Bayou Teche And Vermillion River, LA  
Bayou Teche, LA  
Calcasieu River & Pass, Dredged Material  
Disposal Facility, LA  
Calcasieu River And Pass, LA  
Freshwater Bayou, LA  
Gulf Intracoastal Waterway, LA  
Houma Navigation Canal, LA  
Inspection of Completed Works, LA  
Lake Providence Harbour, LA  
Madison Parish Port, LA  
Mermentau River, LA  
Mississippi River Outlets at Venice, LA

Mississippi River, Baton Rouge to  
the Gulf of Mexico, LA  
Removal of Aquatic Growth, LA

### **Mississippi**

Inspection of Completed Works, MS  
Mouth of Yazoo River, MS  
Rosedale Harbor, MS

### **Missouri**

Caruthersville Harbor, MO  
Inspection of Completed Works, MO  
New Madrid Harbor, MO

### **Tennessee**

Inspection of Completed Works, TN  
Project Condition Surveys, TN  
Wolf River Harbor, TN

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 08 Lower Mississippi River (Continued)**

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
MVD	Commercial Navigation	0	0	26,231	89,866	116,097	30,033	93,034	123,067
	Environment	0	0	598	75	673	686	0	686
	Flood and Coastal Storm Damage Reduction	0	0	1,998	0	1,998	7,605	109	7,714
	Hydropower	0	0	3,643	7,789	11,432	2,888	7,664	10,552
	Recreation	0	0	8,263	2,435	10,698	9,285	477	9,762
	BL Not Recorded in FY	384,011	135,373	0	0	0	0	0	0
<b>MVD Division Total in Region</b>		<b>384,011</b>	<b>135,373</b>	<b>40,733</b>	<b>100,165</b>	<b>140,898</b>	<b>50,497</b>	<b>101,284</b>	<b>151,781</b>
SWD	Flood and Coastal Storm Damage Reduction	0	0	120	0	120	126	0	126
<b>SWD Division Total in Region</b>		<b>0</b>	<b>0</b>	<b>120</b>	<b>0</b>	<b>120</b>	<b>126</b>	<b>0</b>	<b>126</b>
<b>Region 8 Total</b>		<b>384,011</b>	<b>135,373</b>	<b>40,853</b>	<b>100,165</b>	<b>141,018</b>	<b>50,623</b>	<b>101,284</b>	<b>151,907</b>

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 09 Souris-Red-Rainy** - The drainage within the United States of the Lake of the Woods and the Rainy, Red, and Souris River Basins that ultimately discharge into Lake Winnipeg and Hudson Bay. Includes parts of Minnesota, North Dakota, and South Dakota.

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

**Minnesota**  
International Water Studies, MN  
Orwell Lake, MN

**North Dakota**  
Homme Lake, ND  
Inspection of Completed Works, ND

International Water Studies, ND  
Lake Ashtabula and Baldhill Dam, ND  
Souris River, ND

**South Dakota**  
Lake Traverse, SD and MN

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
MVD	Environment	0	0	277	0	277	198	0	198
	Flood and Coastal Storm Damage Reduction	0	0	2,166	63	2,229	2,222	0	2,222
	Recreation	0	0	463	9	472	430	24	454
	BL Not Recorded in FY	2,990	2,727	0	0	0	0	0	0
<b>MVD Division Total in Region</b>		<b>2,990</b>	<b>2,727</b>	<b>2,906</b>	<b>72</b>	<b>2,978</b>	<b>2,850</b>	<b>24</b>	<b>2,874</b>
<b>Region 9 Total</b>		<b>2,990</b>	<b>2,727</b>	<b>2,906</b>	<b>72</b>	<b>2,978</b>	<b>2,850</b>	<b>24</b>	<b>2,874</b>

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 10 Missouri** - The drainage within the United states of: (a) the Missouri River Basin, (b) the Saskatchewan River Basin, and (c) several small closed basins. Includes all of Nebraska and parts of Colorado, Iowa, Kansas, Minnesota, Missouri, Montana, North Dakota, South Dakota, and Wyoming.

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

**Colorado**

Bear Creek Lake, CO  
Chatfield Lake, CO  
Cherry Creek Lake, CO  
Inspection Of Completed Works, CO

**Iowa**

Inspection Of Completed Works, IA  
Missouri River - Kenslers Bend, NE To  
Sioux City, IA  
Missouri River - Rulo To Mouth, IA, NE, KS  
& MO  
Missouri River - Sioux City To Rulo, IA &  
NE  
Rathbun Lake, IA

**Kansas**

Clinton Lake, KS  
Hillsdale Lake, KS  
Kanopolis Lake, KS  
Melvern Lake, KS  
Milford Lake, KS  
Perry Lake, KS  
Pomona Lake, KS  
Tuttle Creek Lake, KS  
Wilson Lake, KS

**Missouri**

Harry S Truman Dam And Reservoir, MO  
Inspection Of Completed Works, MO  
Little Blue River Lakes, MO  
Long Branch Lake, MO  
Missouri National Recreational River, NE &  
SD  
Pomme De Terre Lake, MO  
Scheduling Reservoir Operations, MO  
Smithville Lake, MO  
Stockton Lake, MO

**Montana**

Ft Peck Dam And Lake, MT  
Inspection Of Completed Works, MT  
Intake Dam, Yellowstone River, MT  
Scheduling Reservoir Operations, MT

**Nebraska**

Gavins Point Dam, Lewis And Clark Lake,  
NE & SD  
Harlan County Lake, NE  
Inspection Of Completed Works, NE  
Papillion Creek And Tributaries Lakes, NE  
Salt Creek And Tributaries, NE

**North Dakta**

Bowman - Haley Lake, ND  
Garrison Dam, Lake Sakakawea, ND  
Inspection Of Completed Works, ND  
Pipestem Lake, ND  
Scheduling Reservoir Operations, ND

**South Dakota**

Big Bend Dam, Lake Sharpe, SD  
Cold Brook Lake, SD  
Cottonwood Springs Lake, SD  
Fort Randall Dam, Lake Francis Case, SD  
Inspection Of Completed Works, SD  
Missouri R Between Fort Peck Dam And  
Gavins Pt, SD, MT & ND  
Oahe Dam, Lake Oahe, SD & ND  
Scheduling Reservoir Operations, SD

**Wyoming**

Inspection Of Completed Works, WY  
Scheduling Reservoir Operations, WY

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 10 Missouri (Continued)**

The FY 2008 budget includes funding for operation, maintenance, and rehabilitation in the region by business line as follows:

<b>Business Line</b>	<b>Total</b>
Commercial Navigation	58,798
Environment	27,256
Flood and Coastal Storm Damage Reduction	36,474
Hydropower	36,101
Recreation	19,007
Water Supply	91
<b>Total</b>	<b>177,727</b>

## JUSTIFICATION OF ESTIMATE

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 11 Arkansas-White-Red Rivers** - The drainage of the Arkansas, White, and Red River Basins above the points of highest backwater effect of the Mississippi River. Includes all of Oklahoma and parts of Arkansas, Colorado, Kansas, Louisiana, Missouri, New Mexico and Texas.

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

### Arkansas

Beaver Lake, AR  
Blue Mountain Lake, AR  
Bull Shoals Lake, AR  
Dardanelle Lock and Dam, AR  
Dequeen Lake, AR  
Dierks Lake, AR  
Gillham Lake, AR  
Greers Ferry Lake, AR  
McClellan-Kerr Arkansas River Navigation System, AR  
Millwood Lake, AR  
Nimrod Lake, AR  
Norfolk Lake, AR  
Ozark - Jeta Taylor Lock And Dam, AR

### Colorado

John Martin Reservoir, CO  
Trinidad Lake, CO

### Kansas

Council Grove Lake, KS  
El Dorado Lake, KS  
Elk City Lake, KS  
Fall River Lake, KS  
Inspection of Completed Works, KS  
John Redmond Dam and Reservoir, KS  
Marion Lake, KS  
Pearson - Skubitz Big Hill Lake, KS  
Toronto Lake, KS

### Louisiana

Bayou Bodcau Reservoir, LA  
Caddo Lake, LA  
J Bennett Johnston Waterway, LA  
Wallace Lake, LA

### Missouri

Clearwater Lake, MO  
Inspection of Completed Works, MO  
Table Rock Lake, MO

### New Mexico

Conchas Lake, NM

### Oklahoma

Arcadia Lake, OK  
Birch Lake, OK  
Broken Bow Lake, OK  
Canton Lake, OK  
Copan Lake, OK  
Eufaula Lake, OK  
Fort Gibson Lake, OK  
Fort Supply Lake, OK  
Great Salt Plains Lake, OK  
Heyburn Lake, OK  
Hugo Lake, OK  
Hulah Lake, OK  
Inspection of Completed Works, OK  
Kaw Lake, OK  
Keystone Lake, OK

McClellan-Kerr Arkansas River Navigation System, OK  
Oologah Lake, OK  
Optima Lake, OK  
Pensacola Reservoir, Lake of The Cherokees, OK  
Pine Creek Lake, OK  
Robert S Kerr Lock And Dam And Reservoirs, OK  
Sardis Lake, OK

Skiatook Lake, OK  
Tenkiller Ferry Lake, OK  
Waurika Lake, OK  
Webbers Falls Lock And Dam, OK  
Wister Lake, OK

### Texas

Arkansas - Red River Basins Chloride Control - Area Viii, TX  
Denison Dam, Lake Texoma, TX  
Ferrells Bridge Dam, Lake O' the Pines, TX  
Inspection of Completed Works, TX  
Jim Chapman Lake, TX  
Lake Kemp, TX  
Pat Mayse Lake, TX  
Scheduling Reservoir Operations, TX  
Wright Patman Dam and Lake, TX



**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 11 Arkansas-White-Red Rivers (Continued)**

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
MVD	Commercial Navigation	0	0	4,761	4,470	9,231	7,114	2,117	9,231
	Environment	0	0	240	19	259	194	0	194
	Flood and Coastal Storm Damage Reduction	0	0	572	0	572	572	0	572
	Recreation	0	0	1,381	503	1,884	1,584	23	1,607
	BL Not Recorded in FY	12,522	13,012	0	0	0	0	0	0
<b>MVD Division Total in Region</b>		<b>12,522</b>	<b>13,012</b>	<b>6,954</b>	<b>4,992</b>	<b>11,946</b>	<b>9,464</b>	<b>2,140</b>	<b>11,604</b>
SPD	Environment	0	0	412	0	412	327	85	412
	Flood and Coastal Storm Damage Reduction	0	0	2,310	1,273	3,583	3,635	5,987	9,622
	Recreation	0	0	194	65	259	300	80	380
	BL Not Recorded in FY	5,842	7,688	0	0	0	0	0	0
<b>SPD Division Total in Region</b>		<b>5,842</b>	<b>7,688</b>	<b>2,916</b>	<b>1,338</b>	<b>4,254</b>	<b>4,262</b>	<b>6,152</b>	<b>10,414</b>
SWD	Commercial Navigation	0	0	20,483	14,074	34,557	23,438	11,292	34,730
	Environment	0	0	7,677	1,208	8,885	6,787	991	7,778
	Flood and Coastal Storm Damage Reduction	0	0	27,404	18,177	45,581	30,319	31,014	61,333
	Hydropower	0	0	18,398	6,641	25,039	16,638	8,263	24,901
	Recreation	0	0	37,507	8,409	45,916	40,453	2,448	42,901
	Water Supply	0	0	545	0	545	607	0	607
	BL Not Recorded in FY	153,156	142,275	0	0	0	0	0	0
<b>SWD Division Total in Region</b>		<b>153,156</b>	<b>142,275</b>	<b>112,014</b>	<b>48,509</b>	<b>160,523</b>	<b>118,242</b>	<b>54,008</b>	<b>172,250</b>
<b>Region 11 Total</b>		<b>171,520</b>	<b>162,975</b>	<b>121,884</b>	<b>54,839</b>	<b>176,723</b>	<b>131,968</b>	<b>62,300</b>	<b>194,268</b>

## JUSTIFICATION OF ESTIMATE

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 12 Texas-Gulf** - The drainage that discharges into the Gulf of Mexico from and including Sabine Pass to the Rio Grande Basin boundary. Includes parts of Louisiana, New Mexico and Texas

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

### **Louisiana**

Project Condition Surveys, LA

### **Texas**

Aquilla Lake, TX  
Barbour Terminal Channel, TX  
Bardwell Lake, TX  
Bayport Ship Channel, TX  
Belton Lake, TX  
Benbrook Lake, TX  
Buffalo Bayou and Tributaries, TX  
Canyon Lake, TX  
Channel to Port Bolivar, TX  
Corpus Christi Ship Channel, TX  
Estelline Springs Experimental Project, TX

Freeport Harbor, TX  
Galveston Harbor and Channel, TX  
Granger Dam and Lake, TX  
Grapevine Lake, TX  
Gulf Intracoastal Waterway, TX  
Hords Creek Lake, TX  
Houston Ship Channel, TX  
Inspection of Completed Works, TX  
Joe Pool Lake, TX  
Lavon Lake, TX  
Lewisville Dam, TX  
Matagorda Ship Channel, TX  
Navarro Mills Lake, TX  
North San Gabriel Dam and Lake  
Georgetown, TX

O C Fisher Dam and Lake, TX  
Proctor Lake, TX  
Ray Roberts Lake, TX  
Sabine - Neches Waterway, TX  
Sam Rayburn Dam and Reservoir, TX  
Scheduling Reservoir Operations, TX  
Somerville Lake, TX  
Stillhouse Hollow Dam, TX  
Texas City Ship Channel, TX  
Texas Water Allocation Assessment, TX  
Town Bluff Dam, B A Steinhagen Lake, TX  
Waco Lake, TX  
Wallisville Lake, TX  
Whitney Lake, TX

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 12 Texas-Gulf (Continued)**

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
MVD	Commercial Navigation	0	0	60	0	60	60	0	60
<b>MVD Division Total in Region</b>		<b>0</b>	<b>0</b>	<b>60</b>	<b>0</b>	<b>60</b>	<b>60</b>	<b>0</b>	<b>60</b>
SWD	Commercial Navigation	0	0	4,025	77,989	82,014	4,255	98,104	102,359
	Environment	0	0	4,325	32	4,357	3,553	109	3,662
	Flood and Coastal Storm Damage Reduction	0	0	19,052	14,925	33,977	21,720	14,872	36,592
	Hydropower	0	0	1,745	1,165	2,910	1,835	1,558	3,393
	Recreation	0	0	16,169	7,288	23,457	18,807	3,413	22,220
	Water Supply	0	0	647	0	647	657	0	657
	BL Not Recorded in FY	124,413	151,363	0	0	0	0	0	0
<b>SWD Division Total in Region</b>		<b>124,413</b>	<b>151,363</b>	<b>45,963</b>	<b>101,399</b>	<b>147,362</b>	<b>50,827</b>	<b>118,056</b>	<b>168,883</b>
<b>Region 12 Total</b>		<b>124,413</b>	<b>151,363</b>	<b>46,023</b>	<b>101,399</b>	<b>147,422</b>	<b>50,887</b>	<b>118,056</b>	<b>168,943</b>

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 13 Rio Grande** - The drainage within the United states of: (a) the Rio Grande Basin, and (b) the San Luis Valley, North Plains, Plains of San Agustin, Mimbres River, Estancia, Jornada Del Muerto, Tularosa Valley, Salt Basin, and Other Closed Basins. Includes parts of Colorado, New Mexico and Texas

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

<p align="center"><b>Colorado</b></p> <p>Inspection of Completed Works, CO Scheduling Reservoir Operations, CO</p>	<p align="center"><b>New Mexico</b></p> <p>Abiquiu Dam, NM Cochiti Lake, NM Galisteo Dam, NM Inspection of Completed Works, NM Jemez Canyon Dam, NM Santa Rosa Dam And Lake, NM</p>	<p>Two Rivers Dam, NM Upper Rio Grande Water Operations Model Study, NM</p> <p align="center"><b>Texas</b></p> <p>Inspection of Completed Works, TX</p>
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Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
SPD	Environment	0	0	593	5	598	434	119	553
	Flood and Coastal Storm Damage Reduction	0	0	6,294	2,890	9,184	9,879	16,619	26,498
	Recreation	0	0	595	504	1,099	702	283	985
	BL Not Recorded in FY	17,260	24,262	0	0	0	0	0	0
<b>SPD Division Total in Region</b>		<b>17,260</b>	<b>24,262</b>	<b>7,482</b>	<b>3,399</b>	<b>10,881</b>	<b>11,015</b>	<b>17,021</b>	<b>28,036</b>
<b>Region 13 Total</b>		<b>17,260</b>	<b>24,262</b>	<b>7,482</b>	<b>3,399</b>	<b>10,881</b>	<b>11,015</b>	<b>17,021</b>	<b>28,036</b>

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 14 Upper Colorado River--** The drainage of: (a) the Colorado River Basin above the Lee Ferry compact point which is one mile below the mouth of the Paria River; and (b) the Great Divide closed basin. Includes parts of Arizona, Colorado, New Mexico, Utah and Wyoming.

Project funded in the FY 2008 budget for operation, maintenance and rehabilitation is as follows:

**Colorado**  
Inspection of Completed Works, CO

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
SPD	Flood and Coastal Storm Damage Reduction	0	0	50	0	50	52	0	52
	BL Not Recorded in FY	44	40	0	0	0	0	0	0
<b>SPD Division Total in Region</b>		<b>44</b>	<b>40</b>	<b>50</b>	<b>0</b>	<b>50</b>	<b>52</b>	<b>0</b>	<b>52</b>
<b>Region 14 Total</b>		<b>44</b>	<b>40</b>	<b>50</b>	<b>0</b>	<b>50</b>	<b>52</b>	<b>0</b>	<b>52</b>

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 15 Lower Colorado River**-- The drainage within the United States of: (a) the Colorado River Basin below the Lee Ferry compact point which is one mile below the mouth of the Paria River; (b) streams that originate within the United States and ultimately discharge into the Gulf of California; and (c) the Animas Valley, Willcox Playa, and other smaller closed basins. Includes parts of Arizona, California, Nevada, New Mexico and Utah.

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

<b>Arizona</b>	Painted Rock Dam, AZ	<b>Nevada</b>
Alamo Lake, AZ	Scheduling Reservoir Operations, AZ	Inspection of Completed Works, NV
Inspection of Completed Works, AZ	Whitlow Ranch Dam, AZ	Pine and Mathews Canyons Lakes, NV

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
SPD	Environment	0	0	168	0	168	180	0	180
	Flood and Coastal Storm Damage Reduction	0	0	2,679	485	3,164	2,784	604	3,388
	Recreation	0	0	42	0	42	42	0	42
	BL Not Recorded in FY	2,780	3,127	0	0	0	0	0	0
<b>SPD Division Total in Region</b>		<b>2,780</b>	<b>3,127</b>	<b>2,889</b>	<b>485</b>	<b>3,374</b>	<b>3,006</b>	<b>604</b>	<b>3,610</b>
<b>Region 15 Total</b>		<b>2,780</b>	<b>3,127</b>	<b>2,889</b>	<b>485</b>	<b>3,374</b>	<b>3,006</b>	<b>604</b>	<b>3,610</b>

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 16 Great Basin** -- The drainage of the Great Basin that discharges into the states of Utah and Nevada. Includes Parts of California, Idaho, Nevada, Oregon, Utah and Wyoming.

**Utah**

Inspection of Completed Works, UT  
Scheduling Reservoir Operations, UT

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
SPD	Flood and Coastal Storm Damage Reduction	0	0	656	58	714	687	58	745
	BL Not Recorded in FY	505	598	0	0	0	0	0	0
<b>SPD Division Total in Region</b>		<b>505</b>	<b>598</b>	<b>656</b>	<b>58</b>	<b>714</b>	<b>687</b>	<b>58</b>	<b>745</b>
<b>Region 16 Total</b>		<b>505</b>	<b>598</b>	<b>656</b>	<b>58</b>	<b>714</b>	<b>687</b>	<b>58</b>	<b>745</b>

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 17 Pacific Northwest** - The drainage within the United States that ultimately discharges into: (a) the Straits of Georgia and of Juan De Fuca, and (b) the Pacific Ocean within the states of Oregon and Washington; and that part of the Great Basin whose discharge is into the state of Oregon. Includes all of Washington and parts of California, Idaho, Montana, Nevada, Oregon, Utah, and Wyoming.

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

**Idaho**

Albeni Falls Dam, ID  
Dworshak Dam And Reservoir, ID  
Inspection Of Completed Works, ID  
Lucky Peak Lake, ID  
Scheduling Reservoir Operations, ID

**Montana**

Libby Dam, Lake Koocanusa, MT

**Oregon**

Applegate Lake, OR  
Blue River Lake, OR  
Bonneville Lock And Dam, OR & WA  
Chetco River, OR  
Columbia & lower Willamette R Between  
Vancouver, WA & Portland, OR  
Columbia River At The Mouth, OR & WA  
Columbia River Between Vancouver, WA  
And The Dalles, OR  
Coos Bay, OR  
Coquille River, OR  
Cottage Grove Lake, OR  
Cougar Lake, OR  
Dorena Lake, OR  
Fall Creek Lake, OR  
Fern Ridge Lake, OR  
Green Peter - Foster Lakes, OR

Hills Creek Lake, OR  
Inspection Of Completed Environmental  
Projects, OR  
Inspection Of Completed Works, OR  
John Day Lock And Dam, OR & WA  
Lookout Point Lake, OR  
Lost Creek Lake, OR  
McNary Lock And Dam, OR & WA  
Port Orford, OR  
Project Condition Surveys, OR  
Rogue River At Gold Beach, OR  
Scheduling Reservoir Operations, OR  
Siuslaw River, OR  
Surveillance Of Northern Boundary  
Waters, OR  
Tillamook Bay And Bar, OR  
Umpqua River, OR  
Willamette River At Willamette Falls, OR  
Willamette River Bank Protection, OR  
Willow Creek Lake, OR  
Yaquina Bay And Harbor, OR

**Washington**

Chief Joseph Dam, WA  
Columbia River At Baker Bay, WA & OR  
Columbia River Between Chinook

And Sand Island, WA  
Ediz Hook, WA  
Everett Harbor And Snohomish River, WA  
Grays Harbor And Chehalis River, WA  
Howard Hanson Dam, WA  
Ice Harbor Lock And Dam, WA  
Inspection Of Completed Environmental  
Projects, WA  
Inspection Of Completed Works, WA  
Lake Washington Ship Canal, WA  
Little Goose Lock And Dam, WA  
Lower Granite Lock And Dam, WA  
Lower Monumental Lock And Dam, WA  
Lower Snake River Fish & Wildlife  
Compensation, WA, OR & ID  
Mill Creek Lake, WA  
Mt St Helens Sediment Control, WA  
Mud Mountain Dam, WA  
Neah Bay, WA  
Port Townsend, WA  
Project Condition Surveys, WA  
Puget Sound And Tributary Waters, WA  
Quillayute River, WA  
Scheduling Reservoir Operations, WA



**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 17 Pacific Northwest (Continued)**

Seattle Harbor, WA  
 Stillaguamish River, WA  
 Swinomish Channel, WA  
 Surveillance Of Northern Boundary  
 Waters, WA

Tacoma, Puyallup River, WA  
 The Dalles Lock And Dam, WA & OR  
 Willapa River And Harbor, WA

**Wyoming**  
 Inspection Of Completed Environmental  
 Projects, WY  
 Jackson Hole Levees, WY

The FY 2008 budget includes funding for operation, maintenance, and rehabilitation in the region by business line as follows:

<b>Business Line</b>	<b>Total</b>
Commercial Navigation	105,563
Environment	26,136
Flood and Coastal Storm Damage Reduction	41,356
Hydropower	79,662
Recreation	16,977
Water Supply	571
(blank)	0
<b>Total</b>	<b>270,265</b>

## JUSTIFICATION OF ESTIMATE

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 18 California** -- (a) the drainage within the United States that ultimately discharges into the Pacific Ocean within the state of California; and (b) those parts of the Great Basin (or other closed basins) that discharge into the state of California. Includes parts of California, Nevada and Oregon.

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

### All in California

Black Butte Lake, CA	New Hogan Lake, CA	San Francisco Harbor and Bay, CA
Buchanan Dam, Hv Eastman Lake, CA	New Melones Lake, Downstream	(Drift Removal)
Coyote Valley Dam, Lake Mendocino, CA	Channel, CA	San Francisco Harbor, CA
Dry Creek (Warm Springs) Lake And	Oakland Harbor, CA	San Joaquin River, CA
Channel, CA	Oceanside Harbor, CA	Santa Ana River Basin, CA
Farmington Dam, CA	Pine Flat Lake, CA	Santa Barbara Harbor, CA
Hidden Dam, Hensley Lake, CA	Port Hueneme, CA	Scheduling Reservoir Operations, CA
Humboldt Harbor And Bay, CA	Project Condition Surveys, CA	Success Lake, CA
Inspection of Completed Works, CA	Richmond Harbor, CA	Suisun Bay Channel, CA
Isabella Lake, CA	Sacramento River (30 Foot Project), CA	Surfside - Sunset - Newport Beach, CA
Los Angeles - Long Beach Harbors, CA	Sacramento River And Tributaries	Terminus Dam, Lake Kaweah, CA
Los Angeles County Drainage Area, CA	(Debris Control), CA	Ventura Harbor, CA
Marina Del Rey, CA	Sacramento River Shallow Draft Channel, CA	Yuba River, CA
Merced County Streams, CA	San Diego Harbor, CA	Martis Creek Lake, NV & CA
Mojave River Dam, CA	San Francisco Bay, Delta Model	
Morro Bay Harbor, CA	Structure, CA	

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
SPD	Commercial Navigation	0	0	4,831	45,222	50,053	3,568	61,180	64,748
	Environment	0	0	3,483	754	4,237	3,150	303	3,453
	Flood and Coastal Storm Damage Reduction	0	0	22,015	6,250	28,265	21,506	10,141	31,647
	Recreation	0	0	13,258	2,344	15,602	13,603	1,197	14,800
	Water Supply	0	0	35	40	75	0	0	0
	BL Not Recorded in FY	84,666	93,420	0	0	0	0	0	0
<b>SPD Division Total in Region</b>		<b>84,666</b>	<b>93,420</b>	<b>43,622</b>	<b>54,610</b>	<b>98,232</b>	<b>41,827</b>	<b>72,821</b>	<b>114,648</b>
<b>Region 18 Total</b>		<b>84,666</b>	<b>93,420</b>	<b>43,622</b>	<b>54,610</b>	<b>98,232</b>	<b>41,827</b>	<b>72,821</b>	<b>114,648</b>

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE: Operation and Maintenance, FY 2008**

**Region 19 Alaska** -- The drainage areas within the state of Alaska. Includes all of Alaska.

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

**All in Alaska**

Anchorage Harbor, AK  
 Chena River Lakes, AK  
 Cook Inlet Shoals, AK  
 Cordova Harbor, AK  
 Dillingham Harbor, AK

Homer Harbor, AK  
 Inspection of Completed Works, AK  
 Ketchikan Harbor, Bar Point, AK  
 Lowell Creek Tunnel (Seward) AK  
 Niniichik Harbor, AK

Nome Harbor, AK  
 Project Condition Surveys, AK  
 St Paul Harbor, AK

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
POD	Commercial Navigation	0	0	474	19,808	20,282	525	21,215	21,740
	Environment	0	0	0	0	0	277	65	342
	Flood and Coastal Storm Damage Reduction	0	0	933	989	1,922	1,074	879	1,953
	Recreation	0	0	0	0	0	361	0	361
	BL Not Recorded in FY	15,147	19,000	0	0	0	0	0	0
<b>POD Division Total in Region</b>		<b>15,147</b>	<b>19,000</b>	<b>1,407</b>	<b>20,797</b>	<b>22,204</b>	<b>2,237</b>	<b>22,159</b>	<b>24,396</b>
<b>Region 19 Total</b>		<b>15,147</b>	<b>19,000</b>	<b>1,407</b>	<b>20,797</b>	<b>22,204</b>	<b>2,237</b>	<b>22,159</b>	<b>24,396</b>

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 20 Hawaii** - The drainage areas within the state of Hawaii and US Pacific possessions. Includes all of Hawaii and the Pacific Commonwealths.

Projects funded in the FY 2008 budget for operation, maintenance and rehabilitation are as follows:

**Hawaii**

Barbers Point Harbor, HI  
 Inspection of Completed Works, HI  
 Project Condition Surveys, HI

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
POD	Commercial Navigation	0	0	440	1,105	1,545	360	0	360
	Flood and Coastal Storm Damage Reduction	0	0	205	0	205	216	0	216
	Recreation	0	0	220	25	245	218	0	218
	BL Not Recorded in FY	2,930	3,399	0	0	0	0	0	0
<b>POD Division Total in Region</b>		<b>2,930</b>	<b>3,399</b>	<b>865</b>	<b>1,130</b>	<b>1,995</b>	<b>794</b>	<b>0</b>	<b>794</b>
<b>Region 20 Total</b>		<b>2,930</b>	<b>3,399</b>	<b>865</b>	<b>1,130</b>	<b>1,995</b>	<b>794</b>	<b>0</b>	<b>794</b>

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

**Region 21 Caribbean** - The drainage areas within: (a) the Commonwealth of Puerto Rico; (b) the Virgin Islands of the United States; and (c) other United States Caribbean outlying areas. Includes land areas over which the United States has some degree of interest, jurisdiction, or sovereignty.

No projects are funded in the FY 2008 budget for operation, maintenance and rehabilitation:

Prior year funding for operation, maintenance, and rehabilitation in the region by business line was as follows:  
(Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
SAD	Commercial Navigation	0	0	0	4,000	4,000	0	0	0
	BL Not Recorded in FY	510	1,645	0	0	0	0	0	0
<b>SAD Division Total in Region</b>		<b>510</b>	<b>1,645</b>	<b>0</b>	<b>4,000</b>	<b>4,000</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Region 21 Total</b>		<b>510</b>	<b>1,645</b>	<b>0</b>	<b>4,000</b>	<b>4,000</b>	<b>0</b>	<b>0</b>	<b>0</b>

**JUSTIFICATION OF ESTIMATE**

**APPROPRIATION TITLE:** Operation and Maintenance, FY 2008

<b>SUMMARY BY REGION</b>	
<b>REGION</b>	<b>BUDGET</b>
1 New England	48,758
2 Mid-Atlantic	163,616
3 South Atlantic-Gulf	334,031
4 Great Lakes	105,475
5 Ohio River	314,314
6 Tennessee River	23,404
7 Upper Mississippi River	243,843
8 Lower Mississippi River	151,907
9 Souris-Red-Rainy	2,874
10 Missouri River	177,727
11 Arkansas-White-Red Rivers	194,268
12 Texas-Gulf	168,943
13 Rio Grande	28,036
14 Upper Colorado River	52
15 Lower Colorado River	3,610
16 Great Basin	745
17 Pacific Northwest	270,265
18 California	114,648
19 Alaska	24,396
20 Hawaii	794
21 Caribbean	0
<b>Subtotal for Regions</b>	<b>2,371,706</b>
<i>Remaining Items</i>	<i>99,294</i>
<b>Grand Total for O&amp;M</b>	<b>2,471,000</b>

**APPROPRIATION TITLE:** Mississippi River and Tributaries (MR&T) (Maintenance) FY 2008

The Mississippi River and Tributaries (MR&T) appropriation funds planning, construction, and operation and maintenance activities associated with projects to reduce flood damage in the lower Mississippi River alluvial valley below Cape Girardeau, Missouri. The entire MR&T area is included in Region 8, Lower Mississippi River. The drainage area consists of: (a) the Mississippi River below its confluence with the Ohio River, excluding the Arkansas, Red, and White River Basins above the points of highest backwater effect of the Mississippi River in those basins; and (b) coastal streams that ultimately discharge into the Gulf of Mexico from the Pearl River Basin boundary to the Sabine River and Sabine Lake drainage boundary. Includes parts of Arkansas, Kentucky, Louisiana, Mississippi, Missouri and Tennessee. Projects funded in the FY 2008 budget for operation, maintenance, and rehabilitation are as follows:

**Arkansas**

Dredging, AR  
Helena Harbor, Phillips County, AR  
Inspection of Completed Works, AR  
Lower Arkansas River, North Bank, AR  
Lower Arkansas River, South Bank, AR  
Mississippi River Levees, AR  
Revetments, AR  
St Francis Basin, AR & MO  
Tensas Basin, Boeuf and Tensas Rivers,  
AR & LA  
White River Backwater, AR

**Illinois**

Inspection of Completed Works, IL

**Kentucky**

Inspection of Completed Works, KY

**Louisiana**

Atchafalaya Basin, Floodway System, LA  
Atchafalaya Basin, LA

Baton Rouge Harbor, Devil Swamp, LA  
Bayou Cocodrie and Tributaries, LA  
Bonnet Carre, LA  
Dredging, LA  
Inspection of Completed Works, LA  
Lower Red River, South Bank Levees, LA  
Mississippi Delta Region, LA  
Old River, LA  
Revetments, LA  
Tensas Basin, Red River Backwater, LA

**Mississippi**

Dredging MS  
Greenville Harbor, MS  
Inspection of Completed Works, MS  
Mississippi River Levees, MS  
Revetments, MS  
Vicksburg Harbor, MS  
Yazoo Basin, Arkabutla Lake, MS  
Yazoo Basin, Big Sunflower River, MS

Yazoo Basin, Enid Lake, MS  
Yazoo Basin, Greenwood, MS  
Yazoo Basin, Grenada Lake, MS  
Yazoo Basin, Main Stem, MS  
Yazoo Basin, Sardis Lake, MS  
Yazoo Basin, Tributaries, MS  
Yazoo Basin, Will M Whittington Aux  
Chan, MS  
Yazoo Basin, Yazoo Backwater Area, MS  
Yazoo Basin, Yazoo City, MS

**Missouri**

Inspection of Completed Works, MO  
Wappapello Lake, MO

**Tennessee**

Inspection of Completed Works, TN  
Memphis Harbor, McKellar Lake, TN



**APPROPRIATION TITLE:** Flood Control, Mississippi River and Tributaries (MR&T) (Maintenance) FY 2008

Based on current estimates, the Corps would allocate the funding requested for operation, maintenance, and rehabilitation in the region by business line as follows: (Dollars in Thousands)

MSC	Business Line (BL)	FY 2005 Alloc.	FY 2006 Alloc.	FY 2007 Budget			FY 2008 Budget		
				Oper.	Maint.	Total	Oper.	Maint.	Total
MVD	Commercial Navigation	0	0	9,028	13,685	22,713	11,071	14,340	25,411
	Environment	0	0	4,508	462	4,970	3,394	386	3,780
	Flood and Coastal Storm Damage Reduction	0	0	38,695	64,519	103,214	41,921	62,530	104,451
	Recreation	0	0	13,820	899	14,719	15,313	687	16,000
	BL Not Recorded in FY	161,936	202,231	0	0	0	0	0	0
<b>MVD Division Total in Region</b>		<b>161,936</b>	<b>202,231</b>	<b>66,051</b>	<b>79,565</b>	<b>145,616</b>	<b>71,699</b>	<b>77,943</b>	<b>149,642</b>
Mapping									1,496
<b>MR&amp;T Total</b>		<b>161,936</b>	<b>202,231</b>	<b>66,051</b>	<b>79,565</b>	<b>145,616</b>	<b>71,699</b>	<b>77,943</b>	<b>151,138</b>

# OTHER BUSINESS PROGRAMS

# REGULATORY

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## Program Assessment

### Corps of Engineers: Regulatory Program

The Corps of Engineers is responsible for protecting the nation's wetlands. It is required to do this in a way that supports a prosperous and growing economy. It issues permits to land developers, road builders and others affecting wetlands. It requires them to avoid, minimize and mitigate wetland damage.

#### PERFORMING

☆☆ Moderately Effective

- **The Corps needs to improve the way it checks to be sure that recipients of Corps permits comply with the terms of their permits, especially with respect to offsetting or mitigating any damage they cause to wetlands.** The Government Accountability Office studied this compliance issue and agrees it is a problem.
- **The program should improve the extent to which its regulations are consistent countrywide.** The Government Accountability Office recently conducted two surveys of Corps procedures in different parts of the country and found inconsistencies which need to be eliminated.
- **The Corps needs to do more watershed planning in advance of development and less project-by-project planning.** The Corps of Engineers Civil Works strategic plan calls on the agency to make this change. There is widespread agreement that a broadly-focused watershed approach is more likely to improve the environment and the economy than a narrowly-based site-by-site approach.

Program

View Similar Programs

Rating

What This Rating Means



## Improvement Plan

About Improvement Plans

### We are taking the following actions to improve the performance of the program:

- Publishing a mitigation rule in 2006. We are also installing a new database to improve our ability to track the extent to which permit recipients comply with the terms of their permits.
- Completing analysis of different regulatory practices and standards nationwide. We will identify inconsistencies and issue rules to reduce or eliminate them.
- Increasing our focus on watershed planning. We will prepare a plan by Fall 2006 with quantitative targets for watershed planning. Once approved, we will implement the plan.

### Learn More

- [Assessment Details, Funding, and Improvement Plan.](#)
- [How all Federal programs are assessed.](#)
- [Learn more about Corps of Engineers: Regulatory Program.](#)

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APPROPRIATION TITLE: Regulatory Program, FY 2008

AUTHORIZATION: Rivers and Harbors Act of 1899, Sections 9, 10 and 13  
Clean Water Act, Section 404  
Marine Protection, Research and Sanctuaries Act, Section 103

SUMMARIZED FINANCIAL DATA:

Budget Request for Fiscal Year 2008	\$180,000,000
Budget Request for Fiscal Year 2007	\$173,000,000
Proposed Increase in FY 2008 over FY 2007	\$7,000,000

JUSTIFICATION:

Background. The Corps of Engineers has been regulating specific activities in the Nation's waters since 1890. The Corps' Regulatory program is highly decentralized; most of the authority for administering the program has been delegated to District and Division Commanders. Scrutiny on the Corps' regulatory program has increased as development pressures mount and national public awareness of the aquatic environment, including wetlands, and the involvement of state and Federal resource agencies continue to grow. Sensitivity to wetlands has resulted in greater direct input from the public and environmental interest groups, leading to greater scrutiny and controversy in the review of permit proposals. While this tends to add time to the permit review process, it insures balance in the overall review. Interagency cooperation in the management and protection of the nation's wetlands has greatly improved over the last ten years, resulting in improved efficiency and effectiveness of the Corps Regulatory program. The Corps has worked to implement program changes to enhance efficiency, enabling more timely response to permit applicants while improving its ability to ensure protection of the aquatic environment. The Corps works with state, tribal, and local governments to develop mechanisms that give them greater responsibility for aquatic resources including wetland regulation. This is achieved primarily through programmatic and regional general permits, designed to reduce Federal regulation of activities with only minimal adverse impacts on the aquatic environment. Strategies also include joint federal-state permit applications and processing procedures as well as work-sharing agreements to eliminate duplication of effort with state and local governments. State Programmatic General Permits are becoming an increasingly effective mechanism for giving states a greater role in administering minor permit actions over large areas, thus freeing up Corps resources for more complex permit actions. States may assume Section 404 authority (in non-navigable waters) where the state or local regulatory program is able to implement appropriate regulatory controls. Since 1984, only Michigan and New Jersey have chosen to assume this aspect of the program. The Corps is working to improve inter-agency coordination in efforts to share resources and spatial data. Since 2002, the Corps has cooperated with the other agencies to improve all aspects of mitigation managed by the program.

Types of Activities Regulated by the Corps.

- a. Construction and other work in waters of the United States including wetlands;
- b. Construction of fixed structures and artificial islands on the outer continental shelf;
- c. Discharges of dredged or fill material, including those associated with construction and land-clearing activities, into the waters of the United States, including wetlands;
- d. The transportation of dredged material for the purpose of disposal in ocean waters.

APPROPRIATION TITLE: Regulatory Program, FY 2008 (continued)

Evaluation Criteria. The decision whether to issue a permit is based on an evaluation of the probable impacts of proposed activities on the aquatic environment, including wetlands and other aspects of the public interest. In order to issue a permit, District Commanders must determine that activities are not contrary to the public interest. In addition, for Section 404 permits, the Corps must determine compliance with the Clean Water Act, Section 404 (b)(1) guidelines. Corps permit must also be in compliance with other federal laws, including the Endangered Species Act and National Historic Preservation Act.

ACCOMPLISHMENTS: In FY 06, the Corps authorized more than 95,000 activities in writing, a 5% increase over FY 05, and completed more than 100,000 jurisdiction determinations. Of the approximately 95,000 permits, more than 90 percent were authorized by Regional and Nationwide general permits with the remaining by the more complex individual permits. The Corps continues to depend on its nationwide permit program to help manage its regulatory workload. Without regional and nationwide general permits, all activities would have to be evaluated by the time consuming individual permits. Although the evaluation process for an individual permit is typically greater than that for a general permit, most regional and nationwide authorizations now involve substantive evaluation and determination of necessary mitigation. The Corps has developed draft Nationwide permits published in FY 2006 and are being reissued in FY 2007.

The Corps has been a driving force in the inter-agency group working to improve the success of compensatory mitigation. This effort began with the Regulatory Guidance Letter RGL 02-02 which led to the multi-agency Mitigation Action Plan. These efforts, led by the Corps and EPA along with 4 other federal agencies, propose to improve the ecological performance of compensatory mitigation under the Clean Water Act and related programs. The Corps and EPA also issued the draft Mitigation Rule in FY 2006 specifically to implement a watershed approach to mitigation and decrease the time to reach a decision on proposed mitigation banks. Approximately 25,000 comments were received on the draft rule and we plan to issue a final rule in 2007.

The Corps continues to protect the nation's aquatic environment, while working to provide fair and equitable decisions in a reasonable period of time. Because of a nearly 50-percent increase in the total number of written permit authorizations over the last ten years as well as increasing program review requirements and legal challenges, the Corps has not been able to maintain its evaluation time for the more complex permit actions. In FY 06, 82% of all actions were authorized in less than 60 days, a slight reduction of the general permit performance from FY 2004. Performance in evaluating the more complex project requiring individual permits has continued to decline. With nationwide and regional general permits authorizing most actions, only the most difficult permits are left to be handled through standard permits. In FY 06, 61% of individual permits were completed within 120 days, compared to 50% in FY 05 and 51% in FY 04. Standard permits represent approximately 8% of all permits in numbers but utilize almost a third of all Corps man-days expended on permit actions. The environmental review of all standard permits continues to be extensive; proposed projects that are large and have significant impacts on the aquatic environment have a higher probability of involving endangered species, historic resources, and requiring mitigation that make these applications extremely difficult and time-consuming. The impact of these problems increases each year as development pressure persists or increases and applicants are forced to consider building in or near higher value aquatic areas, including wetlands. For these reasons, more permit decisions, whether issued or denied, are resulting in litigation. The potential for litigation increases the need for more-in-depth review and documentation on complex permits.

Uncertainty about the program's jurisdiction has been a major theme in the program since the 2001 Supreme Court decision (SWANCC) on non-navigable, intrastate, isolated waters. This has been exacerbated by a second Supreme Court decision in June 2006 on two cases, Carabell and Rapanos. This complex decision will lead to publication of interagency guidance in 2007 requiring more extensive documentation for the majority of the more than 100,000 jurisdictional determinations made by the Corps each year. This unplanned additional workload will have a dramatic affect on permit processing times and strain an already overburdened workforce. Funds are being shifted to permitting and the Corps is evaluating a number of options to avoid increasing permit delays and maintain current permit processing times without reducing environmental protection of aquatic resources (including wetlands).

APPROPRIATION TITLE: Regulatory Program, FY 2008 (continued)

FISCAL YEAR 2008: The request of \$180 million is \$7 million over the amount requested for FY 07. This funding will allow continuation of efforts to be more responsive to the regulated public while continuing to insure the protection of the aquatic environment as required by law. The funding amount will allow the Corps to provide required documentation for jurisdictional determinations and maintain current processing time to for standard permits and all General Permits. Funds will be allocated for inspections of permitted activities to improve compliance of permitted projects and to insure mitigation oversight; the Corps has been criticized by the National Academy of Sciences and others for inadequate compliance. The change to improve the management of compliance is part of an overall initiative to demonstrate program improvements through new performance standards developed in cooperation with the Office of Management and Budget using the Program Assessment Rating Tool. Enforcement funding has been separated from compliance funding and will remain at current levels.

In FY 08, the Corps will implement the mitigation rule and develop accompanying guidance on the evaluation of impacts and mitigation from a holistic watershed approach. Study efforts will continue to develop watershed approaches that enable consideration of impacts within entire aquatic ecosystems to help expedite permit actions and manage aquatic resources in sensitive areas. Where these watershed studies and evaluations of the impacts of future permits in an aquatic system are undertaken, more permit decisions can be made faster with better environmental review and documentation. The watershed approach will enable the Corps to work cooperatively with other federal agencies, state and local governments, regional and local nongovernmental organizations, private property owners and other stakeholders to ensure sound use of watershed aquatic resources. As part of this effort, the Regulatory program will actively seek state partners to develop State Programmatic General Permits that will utilize these watershed data and streamline the permit process.

Other program management efforts will continue, including specialized training of Corps personnel and technical assistance to Corps districts by the Engineer Research and Development Center (ERDC). For FY 2008, approximately \$500,000 would be allocated to ERDC for its direct technical assistance with complex and sensitive permit cases. ERDC is also producing a series of regional wetland delineation manuals that will improve decision-making and consistency in wetland delineations by taking into account regional variations in wetlands. In addition, a similar funding amount may be allocated to the Institute for Water Resources to address special program management issues such as studies of mitigation banking, improvement of the ORM data system to track program workload and wetland acreage, and assessment of impacts due to program changes. The new spatial database, G-ORM (installed in FY 07), will track workload statistics and program performance and significant information on mitigation including habitat type and success information, critical for insuring the "no net loss" of wetlands goal. The database will also have spatial data on all permits, which will be made available to the public and our state and local partners. Funds also will be used to pay for the review of environmental impact statements (EIS's); some districts are now dealing with unusually large and controversial projects requiring EIS's. Examples of complex permit applications include port expansion projects in Los Angeles and Charleston, "windfarms" in New England, mountaintop mining in the Appalachia, and programmatic EIS's in south Florida.

The \$180 million will be applied as follows:

Permit Evaluation and Jurisdictional determinations	\$149,000,000
Enforcement & Resolution	\$ 13,000,000
Administrative Appeals	\$ 1,000,000
Studies (SPGP's) and Wetlands Technical Support	\$ 6,000,000
Environmental Impact Statements	\$ 1,000,000
<u>Compliance for Authorized Activities &amp; Mitigation</u>	<u>\$ 10,000,000</u>
TOTAL	\$180,000,000



# RECREATION

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## Program Assessment

### Corps of Engineers: Recreation Management

Program

View Similar Programs

This program provides recreation opportunities in and around Corps lakes and parks. The Corps manages 4,300 recreation areas at 456 projects in 43 states. The recreation opportunities the Corps (and its partners) offer are diverse, ranging from primitive camp sites to four-star conference centers.

#### PERFORMING

☆☆ Moderately Effective

Rating

What This Rating Means

- **The Corps of Engineers recreation program is large, diverse and well managed.** It takes place on 12 million acres of water and land, equal in size to the States of Vermont and New Hampshire. Its managers are often resourceful and entrepreneurial, working collaboratively with the local community to ensure customer satisfaction.
- **The Corps recreation infrastructure is aging and, in many cases, obsolete.** Many recreation facilities are 30 to 40 years old and are nearing the end of their useful life. They need to be replaced and upgraded but federal funding is not likely to be available.
- **Baselines and targets for recreation performance have not been developed to date.** Accordingly, the use of these measures to guide budget decisions is limited. Also, land use policy might be improved to attract private financing and investment where appropriate.



## We are taking the following actions to improve the performance of the program:

### Improvement Plan

#### About Improvement Plans

- Working to enact legislation that would provide managers improved incentives to collect fees, increase receipts, and work collaboratively with local community leaders.
- Obtaining authority to use increased fees the program collects to operate, maintain and upgrade facilities at Corps recreation sites where the fees are collected.
- Collecting data to develop performance measures useful for managing recreation sites. Also conducting competitive solicitations, where appropriate, to use private financing to improve the program.

### Learn More

- **Assessment Details, Funding, and Improvement Plan.**
- How all Federal programs are assessed.
- Learn more about Corps of Engineers: Recreation Management.

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# EMERGENCY MANAGEMENT

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## Program Assessment

### Corps of Engineers: Emergency Management

Program

[View Similar Programs](#)

This program prepares for and responds to natural disasters, including floods, storms and hurricanes, by training and equipping personnel to respond to flood and storm events, repairing flood control and storm protection structures damaged by major floods and storms and conducting other emergency response activities.

#### PERFORMING

★★ Moderately Effective

Rating

[What This Rating Means](#)

- **The program addresses the specific need for disaster response and recovery after hurricanes or major floods by performing emergency repairs to damaged levees and floodwalls.** The Army Corps of Engineers is well-suited to conduct emergency project repairs, given their extensive knowledge of and experience with planning, constructing and maintaining such projects.
- **The program does not always receive funding in the regular, annual budget.** Despite the relative certainty associated with preparing for and responding to emergencies each year, the program routinely relies upon erratic, emergency supplemental funding or emergency fund transfers from other programs.
- **The program lacks a comprehensive database for tracking the maintenance and performance of flood and storm protection projects that it regularly inspects and/or maintains.** This information is necessary to ensure projects perform well during flood and storm events and to improve state and local accountability for maintaining and repairing flood and storm protection projects.



**We are taking the following actions to improve the performance of the program:**

**Improvement Plan**

About Improvement Plans

- Exploring ways to improve decision-making on the restoration of flood and storm protection structures after an emergency.
- Funding this program at a robust level in the regular, annual budget to support important emergency planning, preparedness, response and recovery activities.
- Proposing funds for an inventory of the Nation's flood and storm projects and development of an analytical tool for assessing project performance and risk of failure.

**Learn More**

- **[Assessment Details, Funding, and Improvement Plan.](#)**
- [How all Federal programs are assessed.](#)
- [Learn more about Corps of Engineers: Emergency Management.](#)

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APPROPRIATION TITLE: Flood Control and Coastal Emergencies (FCCE), FY 2008

SUMMARIZED FINANCIAL DATA:

Annual Appropriation FY 2003	\$ 14,900,000
Emergency Supplemental FY 2003	\$ 60,000,000
Annual Appropriation FY 2004	\$ 0
Emergency Supplemental FY 2004	\$ 0
Annual Appropriation FY 2005	\$ 0
Emergency Supplemental FY2005	\$ 348,000,000
Annual Appropriation FY 2006	\$ 0
Emergency Supplemental FY2006	\$5,407,989,000
Budget for FY 2007	\$ 0
Budget for FY 2008	\$ 40,000,000

DISASTER PREPAREDNESS: This activity consists of functions required to ensure that USACE activities are ready to respond to a broad range of disasters and emergencies. It includes coordination, planning, training, and the conduct of response exercises with key local, state and federal stakeholders/partners under our own statutory authorities and in support of the Federal Emergency Management Agency, Department of Homeland Security. It also provides the vehicle for the purchase and stockpiling of critical supplies and equipment and support facilities (Emergency Operations Centers) to include the purchase additional and upgrade existing deployable tactical operations systems (DTOS). DTOS, provides USACE with the necessary equipment to begin providing emergency aid to a disaster stricken community immediately and will be acquired over a 3 yr period. These activities ensure USACE personnel assigned emergency assistance responsibilities are trained and equipped to accomplish their missions. This includes, but not limited to, personnel assigned to Emergency Operations Centers, Crisis Management Teams, Crisis Action Teams, Regional Operations Centers, Planning and Response Teams, Special Cadres, Levee Inspection Teams and general response personnel.

Major preparedness efforts include the review and updating of response plans based on lessons learned from recent disasters; training of personnel and teams to develop critical skills which enhance the capability to respond under adverse conditions; procurement and prepositioning of critical supplies and equipment (i.e., sandbags, pumps) which likely would be otherwise unavailable during the initial response stages; periodic exercises to test and evaluate plans, personnel, and training; inspection of non-Federal flood control projects to ensure their viability to provide flood protection and assess their eligibility for post-flood rehabilitation; laboratory support for field operations; liaison with state and local governments and agencies; and effective management to ensure workable, coordinated efforts that will meet the needs of disaster victims. The funding identified under All-Natural Hazards Preparedness Activities reflects expanded national and regional planning, training and coordination to support response to all natural disasters that includes disasters under the umbrella of the National Response Plan.

FISCAL YEAR 2008: The Budget funds this program at \$40 million for preparedness, only. This represents an increase of about 25 percent in preparedness funding compared to the FY 2007 budget. The decision to seek this increase is an outcome of an analysis using the Program Analysis Rating Tool (PART).

Appropriation Title: Operation and Maintenance – Fiscal Year 2008

**National Emergency Preparedness Program (NEPP)**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$7,000,000
Appropriation for FY 2007	5,000,000
Allocation Requested for FY 2008	5,000,000
Change in FY 2008 from FY 2007	0

AUTHORIZATION: Executive Orders 10480 and 12656, which cite several acts including The Stafford Act, are the basis for the National Response Plan.

JUSTIFICATION: The budget request will enable the Corps to be prepared to accomplish its continuity of operations and continuity of government responsibilities during national/regional crises. This entails support of civil government through coordinated execution of federal agency plans and the planning/conducting of limited exercises to test readiness to provide such support. Executive Orders 10480 and 12656 and the Federal Emergency Management Agency (FEMA) under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 USC 5121 et seq. are the basis of the National Response Plan. The cited executive directives assign significant responsibilities for such preparation (planning, training, research and testing) to the Corps. This includes responsibility for development of comprehensive national level preparedness plans and guidance for response to all regional/national emergencies, whether caused by natural phenomena or acts of man, plans for response(s) to acts of terrorism, and the local preparedness necessary to support Corps continuity of operations. The Corps provides engineering and construction support to state and local governments in response to catastrophic natural/technological disasters. Rapid response to disasters of a regional/national magnitude requires that extensive pre-emergency planning and preparedness activities be conducted to assure the availability of a work force capable of shifting from routine missions to crisis operations and the organizational command and control structure(s) necessary to provide a coordinated and comprehensive response in the critical early stages of a catastrophic disaster.

This program provides the activities necessary to prepare for response to catastrophic natural and technological disasters requiring major Federal support of state and local governments overwhelmed by a disaster event, and for national level emergency water planning. The preparation requires the development of plans, training of employees, conducting training exercises, including support to FEMA exercises and coordination within DOD and with other Federal agencies and state and local governments. Unlike the Corps Civil Works programs related to individual project planning, development and operations and maintenance, the NEPP requires the development of an integrated command planning and response capability. Corps divisions have a key role in the planning, coordination and operational control of multi-district response(s) and the integrated preparedness effort required for accomplishing this response. Preparation also includes the Headquarters sponsored Corps-wide programs necessary to provide the capabilities and operational command and control required by Corps field commands in order to accomplish their NEPP responsibilities, both routinely and in specific emergency response situations. NEPP also provides USACE with the ability to engage and coordinate readiness with other agencies at the National level on programs of Federal primacy or interests. The NEPP is complementary to the Flood Control and Coastal Emergencies (FCCE) appropriation. Although both programs are related to emergency situations, there is a distinct separation of responsibilities. The NEPP provides for the planning, training, and testing activities necessary to develop the capability to meet essential requirements associated with local continuity of operations and response(s) to scenario specific national/regional crises. The FCCE, on the other hand, provides preparedness and response related to emergency flood fighting, post-flood repair and restoration of flood and shore protection works damaged or destroyed by floods, hurricanes or wave action and Corps preparedness associated with National Response Plan mission requirements.



## Appropriation Title: Operation and Maintenance – Fiscal Year 2008

PROPOSED ACTIVITIES FOR FY 2008: The FY 2008 program will provide for continuing the implementation of the National Emergency Preparedness Program. The FY 2008 program will continue the process of catastrophic disaster planning and exercising to enable the Corps to rapidly respond to a broad spectrum of emergencies, with emphasis on natural disaster and terrorists' events that have regional and national implications. An effort will be made to satisfy increasing demands on the program to support multi-agency (Federal, state, and local government) requests to exercise plans focusing on regional catastrophic natural and man made disasters. Increasingly, Federal, state and local agencies are looking to the Corps to take the lead in this area. Lessons learned from events such as Senior Leader Seminars, the National Capitol Region workshops, Hurricane Katrina, and the evolving New Madrid earthquake scenario, clearly indicate that the current system does not adequately provide for a response to catastrophic disasters that is timely enough or comprehensive. The Corps has initiated a program that uses the deliberate planning process to develop scenario specific catastrophic disaster plans. This will result in more detailed planning and should provide for a more comprehensive response to national/regional catastrophic disasters to include terrorist attacks. More extensive coordination with Federal, state and local entities will be incorporated into plan development. In this regard, following FEMA's program focus, USACE will continue to play a key role in national security planning such as supporting Homeland Security strategic planning efforts, development of the National Capitol Region Response Plan and other plans as the New Madrid Earthquake, the South Florida Hurricane, the Southern California Earthquake, the New Orleans Hurricane and other contingencies with national implications. Additional efforts will focus on continuing to strengthen COOP readiness and conducting exercises within the scope of available funding during FY 2008.

ACCOMPLISHMENTS IN PRIOR YEARS: The Corps continued to emphasize a program that uses the deliberate planning process to develop scenario specific catastrophic disaster plans. Detailed planning was provided preparing for a more comprehensive response to national/regional catastrophic disasters to include terrorist attacks. Extensive coordination with Federal, state and local entities has been incorporated into plan development. In this regard, following FEMA's program focus, USACE has continued to play a key role in national security planning such as supporting Homeland Security strategic planning efforts, development of the National Capitol Region Response Plan and other plans such as the New Madrid Earthquake, the New Orleans Hurricane, the Los Angeles Earthquake and other contingencies with national implications, such as the fifteen all-hazards planning scenarios developed by the Homeland Security Council. Additional efforts focus on continuing to strengthen COOP readiness. Exercises, involving federal, state and local officials, have contributed to a more timely and effective execution of Corps responsibilities during disasters that have national impacts. A Senior Leaders' Seminar (SLS) held in April 2006 was hosted by the U.S. Army Corps of Engineers (USACE) in cooperation with the Federal Emergency Management Agency (FEMA), and part of the Department of Homeland Security (DHS). The one and one-half day seminar was comprised of two concurrent meetings, a National Summit and a Regional Forum. The National Summit focused on validating solutions to the key issues identified during AAR sessions. The Regional Forum allowed Regional Directors, Division Commanders, and State Directors to review the DHS/FEMA 2006 Hurricane Concept of Operations (CONOP), by region, for identification of shortfalls and improvement needs as well as identification of successes for sustainment. Day two of the SLS brought all participants together for a plenary session to review the decisions/guidance from the National Summit, address issues and concerns identified during the Regional Summit, and allowed a detailed review of the N-Hour Sequence and Guiding Principles document for agreement as the basis of the FEMA 2006 Hurricane Season CONOP. The primary outcome of the SLS was agreement on the Principles and Planning Considerations for the revision of the draft 2006 Hurricane Concept of Operations for FEMA and USACE and to lay out a plan of action for implementing it with federal, state and local partners for the 2006 Hurricane Season. In 2006, USACE made a concerted effort to assist NORTHCOM in preparing for timely, effective and comprehensive engineering support in response to potential disasters. In 2006 Pacific Ocean Division hosted a Regional Exercise incorporating cold weather impacts for an Anchorage Earthquake CDRP event. Objectives, which were met, were to prepare USACE to respond to a no-notice cold weather event and capture lessons learned to improve future responses. Urban Search and Rescue (US&R) Training was conducted in 2006 to recertify cadre members to advanced Structures Specialists, to provide US&R-level weapons of mass destruction training to meet FEMA requirements, to prepare and conduct a new recruit Structures Specialist training course and to purchase associated equipment for the support

Appropriation Title: Operation and Maintenance – Fiscal Year 2008

teams. Seminars, workshops, and exercises, such as mentioned above, have strengthened partnerships and promoted mutual understanding of the roles, responsibilities and interests of USACE, FEMA, other Federal agencies, and State and local governments involved in natural disasters and terrorists' responses. They have provided an excellent opportunity to examine contingency plans, capabilities, and communications at federal, state and local levels. Also, region-specific issues have been identified and addressed. FY 07 accomplishments will be addressed later this year.

# WATER SUPPLY

## Portfolio Assessment for Reallocations

### SUMMARIZED FINANCIAL DATA:

Total Cost of Continuing Program (for 2-years)	\$600,000
Appropriation for FY 2007	0
Allocation Requested for FY 2008	<b>300,000</b>
Decrease of FY 2008 from FY 2007 (new program in FY 08)	NA

AUTHORIZATION: Specific project authorizations; Section 216 of the River and Harbor and Flood Control Act of 1970.

JUSTIFICATION: The National Portfolio Assessment is an appraisal of the portfolio of existing Corps of Engineer multipurpose projects and will be used as a screening tool to identify the best candidates for opportunities for operational changes and/or reallocation opportunities. The Corps currently manages approximately 380 major dams and reservoirs, providing significant flood control, recreation, water supply, environmental and hydropower benefits to all regions of the country. Some of these reservoirs, however, may use operating plans that no longer reflect the best comparative net economic and environmental returns for the nation.

The goal of the program is to guide future basin-specific or project-specific funding decisions to ensure existing Corps reservoirs contribute to enhance economic and ecosystem values as water demands evolve. The study would be used as a screening tool to examine more productive ways to operate the reservoirs and to use the storage in the best possible manner in recognition of changed conditions, improved science and increased appreciation of environmental values since the projects were constructed, many of them decades ago. Where opportunities are identified, specifically funded follow-up studies could be proposed for the particular watershed, system of projects or project.

PROPOSED ACTIVITIES FOR FY 2008: Funding in the amount of \$300,000 will be used to initiate the program. An initial inventory and assessment of a portfolio of Civil Works reservoirs will be prepared. A methodology will be prepared for more intensive analysis and screening of projects in future years, in order to enable identification of the best opportunities for site-specific reallocation studies. The methodology will also include identification and assessment of alternate funding arrangements that rely on program beneficiaries to provide the funding for any follow-up studies.

ACTIVITIES IN FY 2007: None

# EXPENSES

Justification of Estimates for Civil Functions Activities  
Department of the Army, Corps of Engineers  
Fiscal Year 2008  
(\$000)

APPROPRIATION TITLE: Expenses

	<u>FY 2007 Budget *</u>	<u>FY 2008 Request</u>	<u>Change FY 2007-2008</u>	<u>Percent Change</u>
1. Policy Direction and Oversight				
Office of Assistant Secretary of the Army (Civil Works)	\$ 6,000	\$ 6,000	\$ 0	0%
2. Executive Direction and Management				
a. Headquarters, U.S. Army Corps of Engineers				
Baselevel Operating Expenses	\$ 57,873	\$ 62,400	\$ 4,527	7.8%
Civil Works Program Accounts	<u>10,800</u>	<u>11,900</u>	<u>1,100</u>	<u>10.2%</u>
Total	\$ 68,673	\$ 74,300	\$ 5,627	8.1%
b. Major Subordinate Commands	\$ 68,917	\$ 74,800	\$ 5,883	8.5%
3. Executive Direction and Management Support Activities				
a. Humphreys Engineer Center Support Activity (HECSA)	\$ 15,159	\$ 16,000	\$ 841	5.5%
b. Institute of Water Resources (IWR)	4,149	4,600	451	10.9%
c. U.S. Army Engineer Research & Development Center (ERDC)	209	300	91	43.5%
d. USACE Finance Center (UFC)	<u>893</u>	<u>1,000</u>	<u>107</u>	<u>12.0%</u>
	\$ 20,410	\$ 21,900	\$ 1,490	7.3%
TOTAL:	\$164,000	\$177,000	\$ 13,000	7.9%

\* The President's FY 2007 Budget has not been passed by Congress.

The Expenses account funds Executive Direction and Management (ED&M) activities for civil works functions. The account provides for the expenses necessary for general administration and related civil works functions in the Office of the Assistant Secretary of Army for Civil Works (OASA(CW)), Headquarters, U.S. Army Corps of Engineers and in major subordinate commands, and the costs of those elements of field operating activities providing direct support to those functions. ED&M activities include the exercise of command and control of USACE civil works operations; development, coordination and issuance of policy that guides regional and field execution and operations; program management in developing, defending and executing all major Corps programs; national and regional level coordination with elements of the Administration, with Congress, and with other agencies and national stakeholders; and quality assurance to ensure that the civil works program is being executed in accordance with law, regulation and policy.

The FY 2008 Budget of \$177 million is \$11 million greater than FY 2006 actual costs of \$166 million (\$162 million for the Corps of Engineers ( \$154 million appropriated, plus \$8 million Congressionally directed use of carry over) and \$4 million for the Office of the Assistant Secretary of the Army (Civil Works) (OASA(CW)). Of this increase, \$9 million is to fund price level changes of about 3 percent per year over two years for labor and other cost factors in the Corps of Engineers Executive Direction and Management (ED&M) function. The other \$2 million of the increase in the Expenses account is largely to cover the OASA(CW) share of costs that the Army has centrally funded heretofore.

1. Policy Direction and Oversight

Office of Assistant Secretary of the Army (Civil Works)

FY 2008  
Request  
\$ 6,000

The Office of the Assistant Secretary of Army for Civil Works (OASA(CW)) supports the Assistant Secretary in accomplishing his or her statutorily established responsibilities to provide overall supervision of the functions of the Department of Army pertaining principally to the conservation and development of water resources, including flood and coastal storm damage reduction, commercial navigation, aquatic ecosystem restoration, and related purposes, and to the other work executed by the Civil Works program of the U.S. Army Corps of Engineers. Additional responsibilities include oversight of the Army Cemeterial Expenses program, including Arlington National Cemetery and Soldiers' and Airmen's National Cemetery, other than on matters related to burial policy, and oversight of U.S. Army Corps of Engineers international activities except those in direct support of U.S. forces overseas. Oversight activities include development and review of policy and legislation, budget development and defense, report review, management oversight, and interagency and intergovernmental coordination.

The requested funds will be used to finance costs sub-allocated to the OASA(CW) by the Department of the Army, including costs not previously sub-allocated.

\$ 3,100	Personnel Compensation and Benefits (fully fund authorized staff to accomplish mission)
1,800	Fixed Costs (Space, utilities, communication, ADP, etc)
<u>1,100</u>	Variable Costs (Travel, transportation, training, printing, supplies and equipment)
\$ 6,000	

2. Executive Direction and Management

The FY 2008 Budget will provide for a total ED&M staffing level for the U.S. Army Corps of Engineers of 865 Full Time Equivalents (FTE) that is spread across the Headquarters, Major Subordinate Commands (MSC), and ED&M Support Activities. ED&M is the command and control, policy formulation, program management, national and regional coordination, and quality assurance of the Civil Works Program. This mission is decentralized across the Corps of Engineers in 37 districts, eight (8) MSCs, and several field operating activities (FOA), two (2) technical Centers and one (1) Engineering Research and Development Center made up of seven (7) laboratories. The Budget will enable the Corps to accomplish its priority objectives for ED&M, such as management efficiency programs, CFO audits, asset management, and e-Government initiatives.

a. Headquarters, U.S. Army Corps of Engineers

(1) Baselevel Operating Expenses:

(2) Civil Works Program Accounts:

FY 2008

Request

\$ 62,400

11,900

\$ 74,300

The Headquarters, U.S. Army Corps of Engineers is responsible for providing policy, guidance, and oversight of a comprehensive Civil Works Program. The headquarters assists the field command by providing command and control, policy formulation, national programs management, national coordination, quality assurance, preparation of the annual budget and legislative submission, national and international interface, resource distribution and oversight of execution, and performance measurement.

The amount requested for the headquarters for FY 2008 consists of two components: the base level operating expenses of \$62,400 and the Civil Works Program Accounts amounting to \$11,900. The headquarters has an active program to manage its personnel resources. Positions have been prioritized and, as opportunities arise, least important positions are eliminated and new positions are being created to respond to evolving challenges. Through this prioritization process the headquarters is planning to strengthen its future capabilities in contract management, asset management, program management for development, defense and execution of the Civil Works program, and the execution of project cooperation agreements.

The Program Accounts provide for activities essential to supporting the Civil Works mission that are deemed appropriate for direct-funding from the General Expenses account and benefits HQ, MSCs and FOAs. Activities funded in the Program Accounts for FY 2008 consist of the Civil Works Strategic Planning \$0.24M, Management of the Planners Improvement Course \$0.4M, Contract support for Asset Management \$1.0M, Program Management Business Practice Assessment \$1.0M, Guidance Update Maintenance Program \$ 1.46M, Corps-wide Efficiency Initiatives \$1.0M, E-Government \$0.135M, and IM/IT Initiatives \$6.665M.

Civil Works Strategic Planning (\$0.24M): Under the Government Performance and Results Act (1993), federal agencies (department level) are to prepare strategic and performance plans and submit them to the Congress. The Corps submitted its Strategic Plan for Fiscal Years 2004-2009 in March 2004. Strategic Planning for the Civil Works program is part of the corporate strategy planning effort within USACE. Water Resources management is the purpose of the Civil Works program and water resources is one of the five corporate mission areas. The Corps will continue to use the strategic planning process for the development of the next Civil Works Strategic Plan for Fiscal Years 2009-2015 to ensure that the plan's goals, objectives and strategies are designed to meet the program's future strategic direction.

Management of the Planners Improvement Course (\$0.4M) will allow the Corps to update lesson plans and course objectives keeping the Planners Improvement course current with the latest technology and community of practice.

Contract support for Asset Management (\$1.0M) will allow the Corps to implement the Presidents Management Agenda area for managing assets. This funding is essential for operating capital in support of the national asset management team. External contract support will assist in the execution of a national risk management framework, program management support, data integration support, and other logistical services. The USACE Real Estate Systems National Center maintains the CW and Military databases. New mandates require expansion of our database to 189 data elements, new requirements concerning asset unique identifiers, CFO requirements for auditable records, and General Fund Enterprise Business System (GFEBs), among others.

Program Management Business Practice Assessment (\$1.0M): Over that past several years, the Corps has invested in standardizing our business processes Corps-wide which in effect will also centralize and consolidate our legacy Automated Information Systems (AIS) and the management of data from an enterprise



perspective. The FY 2008 investment will allow us to implement best practices/innovations, making use of knowledge management tools and improving the Corps' Corporate business process manual. Funds would be used for aligning our business processes to such initiatives such as the centralized Quality Management System (QMS), the Enterprise Data Warehouse (EDW), and refinements/clarifications/implementation guidance to the overarching Business Process Regulation, ER 5-11-1.

Guidance Update Maintenance Program (\$1.46M) is a necessary part of improving our technical guidance, design and construction standards and criteria documents. The average age of these documents is 12 years. This funding pays for labor of Corps subject matter experts who are normally project funded for the period of time they are working to benefit the Corps as a whole by updating the documents.

Corps-wide Efficiency Initiatives (\$1.0M) will allow the Corps to engage in innovative organizational modernization in order to select the most appropriate areas for improvement using techniques such as High Performing Organization (HPO), among others.

E-Government: (\$135K) There are two investments that support the Corps share of the Federal Line of Business Initiatives: \$50K for the Corps' share of Recreation-One Stop, \$85K for Budget Formulation and Execution.. The funding that has been invested in Recreation One-Stop has benefited the Corps, the Department of Interior, and the American citizens by improving efficiency. The benefit to the Corps has been the cost avoidance of maintaining a system separate from that of the Department of Interior. With both organizations sharing the data and using one set of managers, the costs have been halved. We expect good benefits from the Budget Formulation and Execution in years to come; this has been the start up year and most of the funds are provided to help develop what the line of business will do for budgeting.

IM/IT Initiatives: \$6.665M provides civil funds to match military funding for USACE internal governance of e-government initiatives which includes information assurance, privacy, quality management, test and evaluation, architecture, infrastructure, records management, and portfolio management. Governance includes management of the transition to the Residual Effective Organization or Continuing Government Organization as the IM/IT competitive sourcing competition ends. Business cases for the major IT investments are located at <http://www.usace.army.mil/itips/omb300.html>

The Chief of Engineers issued twelve interrelated "actions for change" based upon recent national events. The disastrous impact of Hurricane Katrina on the Gulf Coast along the Gulf Coast – and the New Orleans-area in particular – was a wakeup call for the Corps, the Nation and the engineering profession. Exhaustive analysis by the Corps-commissioned Interagency Performance Evaluation Task Force and other teams into the performance of the Greater New Orleans Hurricane Protection System during hurricanes Katrina and Rita yielded a number of lessons learned that pointed to the need for organizational changes to better serve the Nation. The Corps recognizes that the organization has to transform and evolve to meet the changing needs of the Nation. While a number of these changes occur at the district and project level, some rightfully occur at the headquarters and division offices. Amongst these are the need for frequent updates to policy guidance and technical documents, interaction with regional and national stakeholders at the professional level, and quality assurance. Business transformation and process reevaluation with tools such as Lean Six Sigma are important components. The Chief's 12 actions for change items in GE are found within the program accounts for a total amount of \$1.7M. These are Civil Works Strategic Planning (\$0.24M) and the Guidance Update Maintenance Program (\$1.46M) (see text above for each item).

The Headquarters staffing level for FY 2008 is 349 civilian FTE and 44 civil funded uniformed military spaces. The breakout of costs for the Headquarters by major category is shown below.

\$ 50,900	Personnel Compensation and Benefits
2,500	Fixed Costs (Rent, utilities, communication, critical support services, etc)
9,000	Variable Costs (Travel, transportation, training, printing, supplies and equipment)
<u>11,900</u>	Program Accounts (see above)
\$ 74,300	

b. Major Subordinate Commands

FY 2008  
Request  
\$ 74,800

Eight Major Subordinate Commands provide command and control, program management, regional coordination, quality assurance and technical oversight of subordinate district offices. In addition, the MSCs are responsible for program coordination among district offices to ensure the most efficient program execution, establishment and oversight of technical centers of expertise, and workload and workforce planning. The civilian FTE staffing level for FY 2008 in the MSCs is 413 of which 5 are devoted to Katrina recovery, in addition to 16 uniformed military positions. The civilian ED&M FTE level for each MSC varies from 50 to 61 based upon the scope of their Civil Works responsibilities, with the exception of Pacific Ocean Division which has 15 FTE.

\$ 54,700	Personnel Compensation and Benefits
11,100	Fixed Costs (Rent, utilities, communication, critical support services, etc)
<u>9,000</u>	Variable Costs (Travel, transportation, training, printing, supplies and equipment)
\$ 74,800	

3. Executive Direction and Management Support Activities

FY 2008  
Request  
\$ 21,900

Executive Direction and Management support activities include the following FOAs: the Humphreys Engineer Center Support Activity (HECSA) which provides administrative support to Corps tenants of the Humphreys Engineer Center and to Corps Headquarters; the Institute for Water Resources (IWR) which provides a variety of water management functions such as conducting and managing national studies, special studies in support of the Civil Works mission, data collection and distribution, and technical support to other Corps offices in matters dealing with water resources management; the Engineering Research and Development Center (ERDC) which provides support to the Coastal Engineering Research Board (CERB); and the U.S. Army Corps of Engineers Finance Center (UFC) which provides centralized finance and accounting activities. The FOAs have 103 civilian (no uniformed military positions) FTE in FY 2008.

\$ 11,000	Personnel Compensation and Benefits
7,600	Fixed Costs (Rent, utilities, communication, critical support services, etc)
<u>3,300</u>	Variable Costs (Travel, transportation, training, printing, supplies and equipment, and contract support)
\$ 21,900	

Account Summary:

	OASA(CW)	HQ	MSC	FOA	TOTAL
Personnel Compensation and Benefits	\$ 3,100	50,900	54,700	11,000	\$119,700
Fixed Costs (Rent, utilities, communication, critical support services, etc)	\$ 1,800	2,500	11,100	7,600	\$ 23,000
Variable Costs (Travel, transportation, training, printing, supplies, etc))	\$ 1,100	9,000	9,000	3,300	\$ 22,400
Program Accounts	\$	11,900			\$ 11,900
Total	\$ 6,000	74,300	74,800	21,900	\$177,000

# REVOLVING FUND

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

1. Explanation of Revolving Fund. The Revolving Fund, established by Congress in 1953 (P.L. 83-153, 67 Stat. 199), replaced the Plant Allotment Account authorized by the Secretary of War, on 13 December 1934, which had in turn replaced the Plant Program - Appropriation Basis that was used prior to 1934. Prior to the establishment of the Revolving Fund, accounting procedures necessitated by the two previous systems were cumbersome and resulted in a distorted picture of costs when plant was transferred from one appropriation to another.

a. Essentially, P.L. 83-153 provided that the Revolving Fund assumed the total capital value of \$127.9 million in 1953, consisting of the unexpended cash balance (\$25.3 million) and the net value (\$102.6 million) of the assets and liabilities of the plant accounts. The Revolving Fund would finance all future services as a separate entity within its own resources. The Plant Replacement and Improvement Program of the Revolving Fund (PRIP), has proven to be an effective means of providing equipment and materials needed on more than one project. Some advantages of the system are: (1) Simplifies funding and accounting procedures; (2) Provides consideration for plant replacement costs and inflation; (3) Eliminates distorted project costs when plant is used on multiple projects throughout its economic life; and (4) Permits plant availability on a timely basis to meet requirements.

b. The Revolving Fund operates within its own resources rather than from recurring annual appropriations. The Fund owns land, structures, dredges, floating plant, aircraft, fixed and mobile land plant, tools, office furniture, special equipment, computers and automated systems, which serve two or more, projects or appropriations. In order for the Revolving Fund to acquire and replace assets, plant or equipment items, it is necessary that the user, project or appropriation be charged a fee when equipment or services are consumed. This fee consists of operating and fixed costs. The operating costs are reimbursed without a surcharge. The fixed costs include straight-line depreciation and a PRIP surcharge to provide for price growth and inflation. When planned expenditures exceed the income producing capability of the Fund, additional direct appropriations are requested.

c. When the Revolving Fund was established, Congress authorized a capital fund limitation or ceiling of \$140.0 million. The capital fund value or corpus is the total assets, less liabilities and reserves. The initial corpus ceiling was adequate until 1965, when rising workload and inflation forced the Corps of Engineers to begin requesting annual increases of the corpus. These requests were generally granted, because the ceiling limited the income generating capability, which in turn, adversely affected the overall management of the Fund. Therefore, the Corps recommended and Congress granted the request in FY 1979, that annual capital-expenditure ceilings be substituted for the corpus ceiling. Then in FY 1985, expenditure ceilings were replaced by expenditure estimates. Starting in FY 1994, the Corps replaced the estimate of expenditures with an estimate of obligations in accordance with recommendations by the General Accounting Office.

2. The Revolving Fund accounts for facilities, payroll and operations throughout the U.S. Army Corps of Engineers at its divisions, districts, separate field offices and laboratories including its Engineer Research and Development Centers like the Waterways Experiment Station. The fund incurs expenses for acquisition, rehabilitation, operation and maintenance of multiple use structures such as warehouses, shops and garages, as well as, general-purpose plant, such as dredges, tugs, launches, trucks, cranes, bulldozers, drill rigs and other construction equipment. Also, it provides for reimbursement of the general and administrative expenses of District offices.

3. The Corps Revolving Fund, PRIP, includes sixteen New Major Items for FY 2008 and fifty Continuing Major Items from FY 2007. Three Continuing Major Items have revised cost estimates above that previously reported in excess of ten percent. The tables below provide cost estimates for the New Major Items and the revised cost estimates in excess of ten percent for the Continuing Major Items.

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

FY 2008 New Major Items	Page	Total Estimated Cost (\$000)
1. Ship/Tow Simulator Bldg	3	1,550
2. Ship/Tow Simulator System	3	5,300
3. New Gate and Access Road	3	2,000
4. Yaquina Repowering	5	11,236
5. Yaquina Dragarm Winches	5	1,828
6. Dredge Potter Flexible Discharge	5	6,000
7. Yaquina Ship Service Generators	5	1,432
8. Yaquina Dredge Pump Generators	5	4,726
9. Dredge Potter Texas Deck Rehab	6	3,300
10. Revetment Crane Barges (2)	9	10,000
11. Systems Furniture Replacement (St Louis District)	15	3,895
12. Furnish Renovated Federal Building (Kansas City District)	14	3,700
13. Replace 135 Ton Crane and Barge Modification	9	1,700
14. Addition and Betterment to Field Research Facility	3	797
15. Replace Towboat Stephenson	9	4,250
16. Upgrade Real Estate Management Information System	14	5,900
		67,614

Continuing Major Items with Revised Cost Estimates in Excess of 10%	Page	Previous Estimated Cost (\$000)	Revised Estimated Cost (\$000)	Total Cost Increase (\$000)
1. Dredge Essayons Draghead and Jetting System Improvement	6	844	2,315	1,471
2. Survey Boat Rodolf Replacement	11	1,140	3,300	2,160
3. Survey Boat Hickson Replacement	11	1,910	3,300	1,390

<u>PRIP Category</u>	<u>Page</u>
Land and Structures	3
Dredges	5
Other Floating and Mobile Land Plant	9
Fixed Land Plant and Automated Systems	14
Tools, Office Furniture and Equipment	14

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

4. FY 2007 and FY 2008 (Items costing \$750,000 or more)

a. Land and Structures:

(1) Addition and Betterment to Field Research Facility – Engineering Research and Development Center (New). This project entails improvements to the Field Research Facility located near the town of Duck, North Carolina. The facility was established in 1977 to support the Corps coastal engineering mission. It includes a research pier that extends into the Atlantic Ocean, instrumentation and support facilities needed to conduct a wide variety of coastal studies involving weather, waves, currents, tides, sediment transport and beach erosion. The Corps is planning to convert a garage area into administrative space for the ten-person staff of computer specialists, technicians and oceanographers. The cost estimate for the conversion was initially \$585,000, however the estimate was raised to \$796,695, primarily due to the need to reinforce the building to protect it from hurricane damage. Total estimated cost: \$796,695. FY 2006 and Prior years: \$74,594. FY 2007: \$656,456. FY 2008: \$65,646.

(2) Ship/Tow Simulator Building – Engineering Research Development Center (New). The Coastal and Hydraulics Laboratory (CHL) in Vicksburg, Mississippi, was formed in FY97 through the merger of two of the Army Engineer Research and Development Center (ERDC) laboratories, the Hydraulics Laboratory and the Coastal Engineering Research Center. Within the CHL mission of supporting the Corps water resources related needs of the Department of Defense, an ever increasing level of sophistication, integration, and comprehensiveness in technical tools and solutions is required. The CHL Navigation Branch operated the only Corps vessel simulator. This simulator is the Corps primary means to evaluate and optimize proposed changes to Federal navigation channels. With the ability to function as a ship, towboat, or small craft, it can be used for deep and shallow draft projects and small boat harbors. The simulator operates in real time and is used by actual mariners to help finalize Corps channel designs. This building is required to house the new ship/tow simulators which are scheduled to be built at the lab. Total estimated cost: \$1,550,000. FY 2008: \$1,550,000. This project requires special authorization before any funds can be expended.

(3) Ship/Tow Simulator System – Engineering Research Development Center (New). The Coastal and Hydraulics Laboratory (CHL) in Vicksburg, Mississippi, was formed in FY97 through the merger of two of the Army Engineer Research and Development Center (ERDC) laboratories, the Hydraulics Laboratory and the Coastal Engineering Research Center. Within the CHL mission of supporting the Corps water resources related needs of the Department of Defense, an ever increasing level of sophistication, integration, and comprehensiveness in technical tools and solutions is required. The CHL Navigation Branch operated the only Corps vessel simulator. This simulator is the Corps primary means to evaluate and optimize proposed changes to Federal navigation channels. With the ability to function as a ship, towboat, or small craft, it can be used for deep and shallow draft projects and small boat harbors. The simulator operates in real time and is used by actual mariners to help finalize Corps channel designs. This building is required to house the new ship/tow simulators which are scheduled to be built at the lab. Total estimated cost: \$5,300,000. FY 2008: \$5,050,000. Future years: \$250,000. This project requires special authorization before any funds can be expended.

(4) New Gate and Access Road – Engineering Research Development Center (New). The purpose of this project is to provide direct, internal roadway access to the Information Technology Laboratory (ITL) site from the remainder of the Army Engineer Research Development Center in Vicksburg, Mississippi. The ITL presently can only be accessed by utilization of a public street system. Among the four laboratories at the site, the ITL is the only one separated from the others by a public road. With the increase in the security posture of the facility, some gates were closed permanently and guards were posted at the others. Travelers now have to exit the main facility and enter another gate just to move between the labs. A new gate and access road will allow secure access between all four facilities. Total estimated cost: \$2,000,000. FY 2008: \$2,000,000. This project requires special authorization before any funds can be expended.

(5) Additions and Betterment to Information Technology Lab – Engineering Research Development Center (Continuing). Additions and betterments are needed to expand the Information Technology Lab (ITL) to accommodate the scheduled delivery of a Department of Defense purchased supercomputer in mid FY2007. The Engineering Research Development Center (ERDC) examined all of its requirements for computer acquisitions in the next five years in order to determine the new building requirements. Along with the building expansion, extensive increases in power and cooling requirements are included in the project. The design of the addition to the facility will also allow employees who currently work in adjoining trailers to move into the building. Total estimated cost: \$27,500,000. FY2007: \$14,300,000 to initiate construction. FY 2008: \$6,000,000. Future Years: \$7,200,000. Note: Before this project is executed, it will require Congressional authorization for the use of PRIP funds.

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

(6) Mississippi River Project Office – Rock Island District (Continuing). Construct a Mississippi River Project Office to accommodate office and administrative staff currently housed in two separate buildings located at the LeClaire Service Base. Building #1 is an antiquated 1920's era concrete walled warehouse converted 25 years ago for office use while Building #2 houses office staff in the attic of a large motor shop which was built in 1953 and modified in 1981 to accommodate the five people who made up the staff at that time. There are significant safety and health issues associated with both buildings. Building # 1 is located at the back of the service base complex requiring staff, visitors, and the general public to travel through a dangerous construction area utilized by maintenance crews and heavy equipment involved in repair of lock and dam structures and components. Serious blind spots and hazards exist for both pedestrian and vehicular traffic that must have access to this office. This office is also located immediately adjacent to the sandblasting and painting operation. Building #1 is in on the verge of condemnation and will be demolished as soon as a new office is constructed. Building # 2 became severely overcrowded in 1995 when Operations Division reorganized under a nationwide mandate to consolidate functions, and the office staff increased from 5 to 13 people. The only interior access to this upstairs office is by stairway from the open motor shop where maintenance and repair of heavy equipment takes place daily. Several employees have developed respiratory problems due to the diesel, welding, and paint fumes which rise up and constantly enter the upstairs office space. Both of the existing buildings lack adequate office space and are not compliant with the Americans with Disabilities Act (ADA). The new Mississippi River Project Office will serve to bring all staff together in a central location while providing the necessary and accessible focal point for our customers and stakeholders. It will provide needed space for files, supplies, office equipment, and room to hold meetings and training. Most importantly it will eliminate the serious health and safety problems associated with the existing configuration. Total estimated cost: \$3,085,000. FY 2007: \$2,936,000 to initiate design and construction. FY 2008: \$119,000 to continue construction. FY 2009: \$30,000 to complete construction.

(7) Renovate Docks A and B – U.S. Moorings - Portland District (Continuing). Refurbishing Docks A and B would bring it up to modern load bearing standards. The U.S. Government moorings facility, Docks A and B has been in existence since 1903 to provide berthing during the winter repair period for minimum fleet hopper dredges ESSAYONS and YAQUINA. The last major refurbishment of the docks was in 1964. Since then, the dock surfaces have been re-decked and shear piles replaced periodically due to normal wear and tear. The stringers have rotted and several pile cap timbers have extensive dry rot up to four feet back from the exposed ends. **Total estimated cost: \$6,200,000.** Through FY 2006: \$900,000. FY 2007: \$5,000,000. Future Years: \$300,000 to complete construction.

(8) Environmental Laboratory Building – Waterways Experiment Station (Continuing). New building is required to enable consolidation of the staff in a central location to maximize efficient operations of the Environmental Laboratory. The Environmental Laboratory is currently dispersed throughout several buildings at four different locations within the Waterways Experiment Station. Management, administration and coordination of research activities are difficult and inefficient under the present arrangement. Renovation of existing buildings was investigated, however, it was found that force protection measures which are now required made the addition and betterment option cost prohibitive when compared to new building construction. **Total estimated cost: \$12,100,000.** FY2007: \$11,100,000 to design and initiate construction. FY2008: \$1,000,000 to complete construction. Note: Before this project is executed, it will require Congressional authorization for the use of PRIP funds.

(9) Ouachita-Greenson-DeGray Project Management Office - Vicksburg District (Continuing). The need for the new Ouachita-Greenson-DeGray Project Management Office building has evolved around the three Arkansas Lake and power plant projects and their associated mission-essential operational facilities. Today, there are 155 Government employees and 74 contract employees working out of this office. The existing facility space being utilized is not adequate for current staff, essential employee training purposes or joint meeting requirements. Employees are required to attend joint meetings, training courses and conference sessions several times annually. Personnel are left with no adequate facility available for these purposes based on the remote location of these projects. The building currently occupied by the Ouachita Project Management Office will be turned over to the contractor for their use; shop personnel will utilize the building currently occupied by the Lake Ouachita Field Office. All other shop and maintenance space will continue to be used as is. Ouachita Project Management Office and Lake Ouachita Field Office personnel will use the new facility as office space. The Ouachita Project Management Office and its subordinate Lake Field Offices and Power Plants will also use the facility for conferences, meetings, and classroom/training space. The new facility will conform to employee space utilization/requirements specified in AR 405-70, provide space for all employees to meet in a central location, fill ongoing need for classroom/training space, provide storage for supplies and equipment, and meet current technological requirements for communications and electrical systems that can be upgraded in the future. Total estimated cost: \$4,970,000. Through FY 2006: \$259,400 for design. FY 2007: \$4,720,600 to initiate and complete construction.

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

b. Dredges:

(1) Dredge YAQUINA Repowering – MDC Project 2507 Portland District (New). The dredge YAQUINA entered service in 1981. It is based in Portland, Oregon, and is part of the Corps hopper dredge fleet. The dredge operates on the West Coast keeping navigation channels clear. The main engines and ancillary systems have been in continuous service for twenty five years. The main engines are no longer manufactured and it is becoming increasingly difficult to locate and procure replacement parts. Replacement of the main engines and ancillary systems is required in order to assure continued operation of the vessel. In addition, due to the ever increasing stringent emission standards the engines should be replaced with more efficient marine diesels. Total estimated cost: \$11,236,000. FY 2007: \$50,000. FY 2008: \$620,000. Future years: \$10,566,000.

(2) Dredge YAQUINA Ship Service Generator Replacement MDC Project 2726 – Portland District (New). The dredge YAQUINA entered service in 1981. It is based in Portland, Oregon, and is part of the Corps hopper dredge fleet. The dredge operates on the West Coast keeping navigation channels clear. The ship service generator engines and ancillary systems have been in continuous service for twenty five years. The engines are no longer manufactured and it is becoming increasingly difficult to locate and procure replacement parts. Replacement of the generator engines and ancillary systems is required in order to assure continued operation of the vessel. In addition, due to the ever increasing stringent emission standards the engines should be replaced with more efficient marine diesels. Total estimated cost: \$1,432,000. FY 2007: \$150,000. FY 2008: \$1,100,000. Future years: \$182,000.

(3) Dredge YAQUINA Dredging System Improvement MDC Project 2727 – Portland District (New). The dredge YAQUINA entered service in 1981. It is based in Portland, Oregon, and is part of the Corps hopper dredge fleet. The dredge operates on the West Coast keeping navigation channels clear. The dredge pump engines, reduction gears, dredge pumps, hopper distribution system, and ancillary systems have been in continuous service for twenty five years. The dredge pump engines are no longer manufactured and have been rebuilt several times. It is becoming increasingly difficult to locate and procure replacement parts. Replacement of the dredge pump engines and ancillary systems is required in order to assure continued operation of the vessel. The hopper distribution system is dated and will require redesign in order to maximize the settling and loading times from the new engine and more efficient dredge pump combinations. In addition, due to the ever increasing stringent emission standards the engines should be replaced with more efficient marine diesels. Total estimated cost: \$4,726,000. FY 2007: \$150,000. FY 2008: \$4,100,000. Future years: \$476,000.

(4) Dredge YAQUINA Drag Arm Winches Replacement MDC Project 2676 – Portland District (New). The dredge YAQUINA entered service in 1981. It is based in Portland, Oregon, and is part of the Corps hopper dredge fleet. The dredge operates on the West Coast keeping navigation channels clear. The winches, winch motors, drives, controls, and ancillary systems have been in continuous service for twenty five years. These pieces of equipment are no longer manufactured and it is becoming increasingly difficult to locate and procure replacement parts. Replacement of the winches and associated systems is required in order to assure continued operation of the vessel. Total estimated cost: \$1,828,000. FY 2007: \$150,000. FY 2008: \$1,400,000. Future years: \$278,000.

(5) Dredge POTTER Flexible Discharge – MDC Project 2717 St. Louis District (New). This project entails the purchase of a flexible discharge floating pipeline, a spill and store barge, and handling gear for the Dredge POTTER. The new floating pipeline will provide the ability to better do environmental dredging on the Mississippi River. Environmental dredging requires the use of fixed point discharge equipment in order to place dredge materials in specific locations to build beaches, islands, and underwater islands. Total estimated cost: \$6,000,000. FY 2007: \$50,000. FY 2008: \$5,900,000. Future years: \$50,000.

(6) Dredge McFARLAND Asbestos/Lead Abatement MDC 2603 – Philadelphia District (Continuing). Abate asbestos and red lead paint to achieve current occupational safety standards in active crew spaces: forward and aft crew quarters (pilothouse, galley etc.); aft engine and machinery rooms; and the forward dredge pump rooms. The dredge McFarland was built in 1967 when both asbestos and red lead paint were in wide use. Asbestos is throughout the McFarland in the fireproof crew space joinery (sheathing, ceiling and paneling); pipe insulation; and structural fireproof insulation on steel bulkheads. Red lead paint was used throughout the ship as the



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corrosion resistant base primer coat on all interior hull and steel. The aged vessel has asbestos fragments lodged in inaccessible areas behind the joinery panels. The vessel and its crew of 60 have two missions: (1) emergency and national defense dredging worldwide and (2) planned dredging in commercial waterways, mainly federal navigation projects along the Atlantic and Gulf Coasts. Total estimated cost: \$3,500,000. Through FY 2006: \$211,000 to initiate design. FY 2007: \$10,000 to complete design. FY 2008: \$2,160,000 to initiate construction. Future Years: \$1,119,000 to complete construction.

(7) Dredge POTTER Texas Deck Rehab MDC2738 – St. Louis District (New). This project entails the refurbishment of the forward quarters and pilot house for the Dredge POTTER. The dredge is a 2,400 horsepower dustpan dredge which does work on 300 miles of the Mississippi River. The work will provide for more usable and habitable crew space and remove all lead based paint and asbestos. The pilot house has become crowded with all of the new electrical and electronic equipment, controls, and navigation aids that are required for modern day dredging and navigation. The present pilot house is of a 1932 vintage design and is very narrow. The captain and crew have to go outside during operations in order to avoid hitting obstructions in all kinds of inclement weather. The Texas Deck is also of the 1932 vintage and it is where the offices are on the dredge. The Second Deck is where the messing area and bunkrooms are located. The contaminants need to be removed from this area for the health and safety of the crew. Total estimated cost: \$3,300,000. Through FY 2006: \$0 . FY 2007: \$235,000. FY 2008: \$3,000,000. Future years: \$65,000.

(8) Dredge ESSAYONS Hopper Distribution System – Portland District (Continuing). The Dredge ESSAYONS is scheduled to have improved excavator style dragheads installed as a separate project with installation scheduled for FY2010. It is therefore imperative that the existing hopper distribution system be redesigned in order to maximize the retainage of the increased amount of material being placed in the hoppers. Installation of the new distribution system will result in increased retention and reduced loading time. A further benefit will be the reduction in annual maintenance costs for the new system by virtue of the use of highly abrasion resistant materials now coming into use in the dredging industry. Total estimated cost: \$960,000. FY2006: \$20,000. FY2007: \$440,000. FY2008: \$480,000. Future years: \$20,000.

(9) Dredge ESSAYONS Draghead Improvements and Jetting System Modification MDC Project 2542 – Portland District (Continuing). The excavator type dragheads produce much greater specific gravities over the California type currently in use. This equates to an increase in the total solids transported which will boost the production of the dredge ESSAYONS. Excavator dragheads have been on the market for several years and are a proven technology. The new dragheads will be put into service in FY2010, at which time the dredge will have twenty four years of remaining life. Modifications to the jetting system will also be required in order to take full advantage of the new style dragheads as well as improve hopper jetting and reduce dumping times. Total estimated cost: \$2,315,000. FY 2006 and Prior years: \$39,280 FY 2007: \$510,000. FY2008: \$1,400,000. Future Years: \$327,800.

(10) Dredge WHEELER Repowering MDC Project 2620 – New Orleans District (Continuing). Repowering by installing four replacement diesel engines is considered an addition and betterment to the WHEELER, due to the anticipated increase in fuel efficiency and the lowering of exhaust emissions for the vessel. A horsepower increase for propulsion is feasible. The engines currently in service are aged, and recurring component wear and failure problems with these engines, combined with the manufacturer inability to provide replacement spare parts in a timely manner have warranted their replacement. If the WHEELER is not repowered, the engines currently in service are likely to suffer catastrophic damages as they have in the past. The high maintenance and high fuel consumption for the engines will continue. If one of the engines should become unserviceable, the vessel would likely be out of service for a period of three years in order to effect such major repairs. The vessel is primarily to support the navigation mission by dredging on the Mississippi River, Southwest Pass, and other USACE waterways. Total estimated cost: \$19,254,600. Through FY2006: \$38,900 FY2007: \$750,000. FY2008: \$17,449,000. Future Years: \$1,016,700.

(11) Dredge FRY Shallow Draft Dredge Replacement (MDC2609) - Wilmington District (Continuing). Purchase a new shallow-draft hopper dredge in order to maintain shallow coastal inlets along the Atlantic coast while adhering to environmental restrictions on side cast dredges. The dredge FRY was built in 1944 as a U.S. Navy seaplane wrecking derrick and converted to a side-casting dredge in 1972 when acquired by the Corps. Theoretically, the FRY has a remaining useful life of 9 years but in reality it is virtually worn out and does not meet current environmental standards. Regulatory agencies have restricted its use due to the disturbance created by the discharge of dredge materials. In 2002, the dredge crane failed resulting in emergency maintenance and more downtime. Alternatively a crane replacement (estimated at \$2 million) and a propulsion system upgrade (estimated at \$1.8 million) would require lengthy shipyard work. The economic analysis supports purchasing a new shallow-

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draft hopper dredge with a Net Present Value of replacement being \$17.1 million and the Net Present Value of maintaining the FRY is \$19.7 million. **Total estimated cost: \$10,300,000.** Through FY 2006: \$611,700. FY 2007: \$9,000,000. FY 2008: \$500,000. Future Years: \$188,300.

(12) Dredge ESSAYONS – Replacement of Engine Room Instrumentation, Control and Monitoring System - Portland District (Continuing). Replace the engine monitoring and control system during the current overhaul effort in order to properly monitor the new power plant being installed. The existing control and monitoring system on the dredge ESSAYONS is becoming unsupportable due to non-availability of spare parts. The dredge ESSAYONS is being repowered in 2008. Without the system in operating order, the dredge ESSAYONS will not be able to carry out its mission. **Total estimated cost: \$1,850,500.** Through FY 2006: \$1,540,500. FY 2007: \$300,000. FY2008: \$10,000

(13) Dredge MERRITT – Replacement of Side Casting Propulsion System - Wilmington District (Continuing). Convert the side-casting propulsion system to a twin hydraulic outboard propulsion thruster system in order to increase dredging efficiency by 10 percent and to enable dredging across shallower shoals, dredging in both directions and better maneuverability. The dredge MERRITT was converted from a U.S. Navy seaplane wrecking derrick to a side-casting dredge when acquired by the Corps in 1964. Its propulsion system is twin diesel but has had frequent emergency repairs to shafts, propellers and rudders. **Total estimated cost: \$1,800,000.** FY 2006: \$1,000,000 to initiate construction. FY2007: \$800,000 to complete construction.

(14) Dredge JADWIN MDC Project 2618 – Pontoon Pipeline Replacement - Vicksburg District (Continuing). Acquire floating discharge pipeline pontoon barges to replace the discharge pipeline originally furnished with the dredge JADWIN. The dredge JADWIN was built in 1933 and works on the Mississippi River. This pipeline is over 70 years old with maintenance and repair costs increasing to keep it serviceable; the normal economic life of a pipeline is 25 years. **Total estimated cost: \$4,333,500.** Through FY 2006: \$3,913,500. FY 2007: \$250,000. FY 2008: \$150,000. Future Years: \$20,000 to complete construction.

(15) Dredge JADWIN MDC Project 2619 – Anchor Barge Replacement - Vicksburg District (Continuing). Acquire a new anchor barge to provide the same handling services but operate more efficiently, with less maintenance, and comply with safety requirements. The existing barge is 75 years old, far exceeding its normal economic useful life of 40 years. The new barge will be used to support the dredge JADWIN on the Mississippi River. **Total estimated cost: \$1,351,900.** Through FY 2006: \$1,131,600. FY 2007: \$200,000. FY 2008: \$20,300 to complete construction.

(16) Dredge ESSAYONS Bow Discharge System Replacement MDC 2576 – Portland District (Continuing). Replace the Bow Discharge System on the dredge ESSAYONS to improve the mission capability, expand its usefulness, allow for safer operations and more efficiently support the full range of current and future dredging projects. The original side-mounted pump-ashore connections on the dredge ESSAYONS are no longer the industry standard to conduct pump-ashore projects. The existing connection system is not suitable for safe operations in areas exposed to wave action, such as Benson Beach at the mouth of the Columbia River, or beach replenishment projects of southern California. Modern hopper dredges use over the bow pump-ashore connections that are safer and more efficient for working in all conditions. There are pump-ashore projects being developed in Portland, Seattle, San Francisco and Los Angeles, which will require the dredge ESSAYONS. Benefit/Cost ratio is 25.5 to 1. **Total estimated cost: \$810,000.** Through FY2005: \$650,000. FY2006: \$150,000. FY 2007: \$10,000 to complete construction.

(17) Dredge ESSAYONS Repowering MDC 2548 - Portland District (Continuing). Install new, more efficient, low emission diesel engines to save fuel, reduce the crew size and lower permitting (air resources board) cost. The original engines have been in service for 20 years, rebuilt numerous times, and are near the end of their economic lives. The engines do not lend themselves to effectively decrease exhaust emissions and to comply with emission standards. The engines will fail and the dredge would be removed from service without the repowering. The dredge ESSAYONS is one of four seagoing hopper dredges that comprise the minimum fleet, authorized by public law 95-269 and a U.S. Coast Guard certified vessel capable of going anywhere in the world. During the dredging season, the vessel operates 24 hours per day, seven days per week with primary mission dredging harbors and coastal regions along the West Coast of the United States, Alaska and Hawaii. It would take approximately three years to repower the existing engines at a loss of revenue equal to \$46.9 million as compared to new engines at a cost of \$21 million.

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Benefit/Cost Ratio is 2.23 to 1. **Total estimated cost: \$27,500,000.** Through FY2006: \$ \$9,819,000 FY2007: \$15,491,333 to continue construction. FY 2008: \$1,689,667 to complete construction. And FY 09: \$500,000

(18) Dredge POTTER Floating Pipeline Replacement MDC 2515 – St. Louis District (Continuing). Replace 19 pontoons carrying a floating pipeline, each with a 54-foot length of 32-inch-diameter dredge discharge pipe, for up to 1,000 feet, used to transfer dredged materials outside the navigation channel. The pontoons provide transport and support of the pipe during operations of the dredge POTTER along the Mississippi River. The pontoons are 50 years old and in poor condition requiring annual dry-docking to maintain river worthiness because their hull plating is thin due to wear and age. The pontoons have been replated at least once and above water portions have deteriorated. Repair costs are expected to increase. The economic analysis showed replacement to be the least cost alternative with a Net Present Value of \$4.6 million compared to a Net Present Value of \$5.6 million for repairing and maintaining. Total estimated cost: \$2,525,900. Through FY2006: \$2,327,400 FY 2007: \$198,500 to complete construction.

(19) Dredge WM. A. THOMPSON Replacement MDC 2457– St. Paul District (Continuing). Replace existing plant with a component system consisting of dredge, towboat, quarters barge, and other attendant plant to reduce operating costs and downtime. The aging cutterhead dredge WM. A. THOMPSON was built in 1937 and repowered in 1966. This unique self-propelled vessel has consistently proven itself the most cost-effective method of maintaining the 9-foot Mississippi River navigation channel in accordance with PL95-269. Dredge THOMPSON is used primarily for hydraulic dredging maintaining 284 miles of the Upper Mississippi River from the head of navigation at Minneapolis, Minnesota, to Guttenberg, Iowa. The dredge WM. A. THOMPSON has won competitive sourcing six times from 1979 to 2001 and continues to save more than three million dollars annually. Spare parts are becoming increasingly scarce and critical for major machinery components. Although repowering the vessel would extend the asset life another 30 years, it would not eliminate the eventual need for updating structure and habitability items. In Dec 2001, an analysis of dredging requirements determined the THOMPSON be replaced with a component system made up of the replacement dredge, a towboat, and a quarters barge. The quarters barge is being treated as a separate project. **Total estimated cost: \$18,476,800** . Through FY 2006: \$17,906,800 for design and to initiate construction. FY 2006 \$770,000. FY 2007: \$570,000 to complete construction.

(20) Dredge WM. A. THOMPSON Quarters Barge MDC 2652 – St. Paul District (Continuing). Build a quarters barge to accommodate crewmembers onboard; daily shift rotations can be made on schedule thereby reducing overtime; sick leave adjustments are readily adapted to; and there is no risk that the government will not be able to find the necessary rooms in small communities. Galley services will also provide for well-balanced nutritious meals at the same or less cost than the travel order alternative. The dredge Wm. A. Thompson performs maintenance dredging along the Upper Mississippi River from Minneapolis, Minnesota, to St. Louis, Missouri. The Corps of Engineers Most Efficient Organization (MEO) is to dredge 24 hours per day, 7 days a week. This requires crewmembers to work 12-hour shifts for 7 days followed by 7 days off while replacement crews work their 7-day duty. An economic analysis considered two alternatives for providing lodging and meals to crewmembers were considered; put the crew on travel orders and let them stay in commercial facilities, or build a quarters barge. The analysis showed the costs were virtually the same over a 30-year period with the quarters barge providing significantly better management and personnel conveniences to the dredge operations. The quarters barge alternative would cost \$36,058,046 (net present value), while the travel order alternative would cost \$37,058,462. Total Cost: \$16,871,900. Through FY 2006: \$15,752,400. FY 2007: \$650,000. FY 2008: \$459,500.

(21) Dredge Ladder Extension for the JADWIN, MDC 2276 - Vicksburg District (Continuing). Extend the spare Hurley dredge ladder from 58' to 108' for the JADWIN to enable maintaining the recently deepened 45' navigation channel from Baton Rouge to New Orleans. Lengthening is required because dredging must be accomplished when river stages are still high in order to maintain the authorized depth at low stages. The present practice is to start dredging as soon as the dredge can reach the river bottom. But, with the 58' ladder, sometimes this allows maintaining only a 250' wide channel increasing the likelihood of collisions and groundings. Modifications will be accomplished during the lay up period, which normally runs from December to June. Total estimated cost: \$1,099,000. Through FY 2006: \$808,200. FY 2007: \$290,800 .

(22) Dredge Ladder Extension for the HURLEY, MDC 2450 - Memphis District (Continuing). Make modifications to increase the dredge depth of the HURLEY from 40' to 75'. This involves lengthening the existing dredge ladder, extending the hull to accommodate the longer ladder, and modifying the ladder hoisting mechanism. As

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presently equipped, the HURLEY can effectively be utilized only to dredge the shallow draft channel of the Mississippi River. The ladder extension will allow the HURLEY to be used to maintain the deep draft channel from Baton Rouge to New Orleans, extending its useful dredge season to about 250 days per year. Additional ladder hoisting and forward hull propulsion and maneuverability requirements associated with the longer hull form are included. Modifications will be accomplished during the lay up period, which normally runs from December to June. Total estimated cost: \$13,500,000. Through FY 2006: \$4,060,700 for design and initiate construction. FY 2007: \$5,000 to continue construction. FY 2008: \$8,400,000 to continue construction effort. Future years: \$1,034,300 to complete construction.

c. Other Floating and Mobile Land Plant:

(1) Replacement of the Towboat STEPHENSON MDC Project 2729 – Kansas City District (New). The aging towboat STEPHENSON needs to be replaced by a newer, larger, and more powerful towboat which can handle the larger barges which have been acquired in recent years. That would allow the operator to experience less difficulty in stopping a loaded barge. The continued use of the aged towboat is a serious safety concern, especially when working around bridges and rock pile dikes. The STEPHENSON was placed in service in 1971 and has not had an overhaul since. Even with a major overhaul the life of the boat would only be extended another fifteen years. Total estimated cost: \$4,250,000. FY 2007: \$5,000. FY 2008: \$3,865,000. Future years: \$380,000 .

(2) Replacement of 135 Ton Crane and Barge Modification – Tulsa District (New). This crane is the Tulsa District marine fleet 135 Ton mobile crane which is barge mounted and used for lifting purposes to execute routine operations and maintenance, major maintenance, and emergency repairs along the Arkansas River navigation channel. The crane has exceeded its service life and no longer meets OSHA or Corps safety standards for a full lifting capacity. The barge has also exceeded its service life and will require repair and modification to meet stability criteria. A cost comparison indicates that the widening and reskinning of the bottom is the most efficient alternative. Total estimated cost: \$1,700,000. FY 2007: \$1,700,000. This project has been forwarded for an out-of-cycle approval because of the critical nature of the work that the new crane will be required to do.

(3) Revetment Crane Barges (2) MDC Project 2690 – Memphis District (New). The existing barges are of a 1958 series and are leaking badly and beyond repair. The crane barges are a vital part of the revetment operation on the Mississippi River where articulated concrete mats are placed on the banks of the river during low water to prevent scour and erosion. This operation has gone on for about a hundred years now. One of the cranes is used for the land clearing operation prior to the placement of the mats. The other crane is used for placement of gravel. Existing 100-ton capacity cranes will be mounted on the barges once they are constructed. The barges typically have a pilot house for shelter and also a storage hold. As well as providing a work platform, the barges are used to transport equipment and debris to and from the work sites. Total estimated cost: \$10,000,000. FY 2007: \$50,000 . FY 2008: \$9,445,000. Future years: \$480,000.

(4) M/V GRIZZLY Replacement – San Francisco District (Continuing). The debris boat GRIZZLY has the mission to accomplish drift removal, hydrographic surveys, project condition surveys, water and sediment sample collection, project inspections, site visits, wreck and channel obstruction location and marking, and to support District dive missions within the San Francisco Bay and delta areas. Previous studies and reports on drift removal operations have included recommendations to gain efficiency by replacing the Grizzly, a fifty five foot tugboat, with a larger, faster vessel. The size, slow speed and age of the 46 year old Grizzly are the reasons for the replacement of the vessel. Critical to the drift removal mission is the efficient extraction of floating hazards to navigation. While imperative to ships, it is increasingly important for the newer, fast ferries and other vessels, which traffic is increasing on the Bay. Due to the new ferries higher speed capabilities, their points of origin are also increasing in distance from the San Francisco terminals. Total estimated cost: \$6,580,000. FY2007: \$490,000. FY2008: \$6,090,000.

(5) M/V BLACKBURN Replacement – Galveston District (Continuing). A new aluminum hydrographic survey boat is required to replace the existing boat which was placed into service in 1974. The existing boat originally supported land survey crews by ferrying them to locations only reachable by water. It was also used to enable government inspectors and project engineers to visit pipeline dredge operations. The boat was converted to a hydrographic survey boat in the 1980s with some modifications. The boat has exceeded its 30 year life and is in need of a complete overhaul to continue in service. An economic analysis has indicated that replacement is

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far superior to making the necessary repairs to the vessel. The customers of the Galveston District are some of the busiest ports and channels in the Nation, and the equipment is needed to carry out the considerable navigation mission. Total estimated cost: \$700,000. FY2007: \$650,000. FY 2008: \$50,000.

(6) Aircraft Replacement – Northwestern Division (Continuing). This item was submitted and approved as a FY02 Major Item New Start, however, a more detailed analysis of the requirement was undertaken and the estimated cost has increased more than ten percent since that time. The project is for the replacement of the aircraft currently in use by the Northwestern Division (NWD). The current NWD aircraft is a 34 year old Fairchild, Merlin IV. It was purchased new in 1971 at a cost of \$652,829, and will accommodate ten passengers. The most recent Justification and Economic Analysis of USACE NWD Aircraft by Conklin & Decker (July 2004) recommends acquisition of a used (5 year old) King Air 350 for \$2,950,000. A new King Air 350 was priced at \$5,832,660. An aircraft is critical to the effectiveness of the Northwestern Division. It is used to satisfy those requirements which cannot be met by scheduled air carriers, charter or military air. These requirements include support to natural and national disasters, visits to remote sites, time constrained missions, mobilization exercises, and support to the missions of the Federal Emergency Management Agency under the auspices of the Department of Homeland Security. The special value of an aircraft to NWD is due to the large size and unique nature of the region for which the Division is responsible. The Civil Works mission responsibilities in the Missouri River Basin alone comprise one sixth of the land area of the contiguous 48 states. Total estimated cost: \$3,000,000. FY2007: \$3,000,000.

(7) Construction of Deck Barges MDC Project 2629 – Nashville District (Continuing). Three barges of like design support maintenance activities on 19 locks and 1170 miles of navigation channel within the Nashville District. The barges are used as floating work platforms and to transport equipment and components related to lock and dam maintenance activities, such as mobile cranes, generators, air compressors, sheet piling, lock closure structures, and mooring cell templates. The three barges currently in use are in need of replacement and have been in service since 1954. Further use of these vessels would require maintenance expenditures that would exceed the value of the barges. Use of flat deck barges is vital to the accomplishment of the district mission of maintaining navigable waterways on the Tennessee and Cumberland Rivers and their tributaries. The barges used in this district are smaller than the industry standard but they are preferred for their flexibility and exceptional service for the maintenance fleet. Alternatives were studied for continued use, rent/lease, and contracting for deck space. Fabrication and purchase of new barges was found to be the best alternative. Total estimated cost: \$2,189,200. FY2006 and Prior Years: \$7,900. FY 2007: \$2,027,000. FY2008: \$113,600. Future Years: \$36,800.

(8) Mobile Truck Crane – Nashville District (Continuing). This crane is an essential component in conducting maintenance activities at 14 navigation locks, 9 hydroelectric power plants, 10 dams, and 10 natural resource management areas within the boundaries of the Nashville District. The crane is used for heavy lifting of equipment and structural components associated with various maintenance projects. The crane is additionally used to support emergency response missions for the District. The existing 75-Ton mobile land crane has reached the end of its life cycle. Repair costs to maintain its continued safe operation are projected to exceed daily costs for a replacement crane. Current lift requirements dictate that a crane with additional lifting capacity be acquired. Alternatives considered instead of replacing this crane were using the existing crane, leasing/renting a crane, and contracting for lift services. Based on cost comparisons, equipment availability, affordability, and safety of personnel and hoisted equipment, purchase of a new mobile truck crane will provide the most practical, cost effective alternative. Total estimated cost: \$800,000. FY2007: \$800,000.

(9) M/V W-46 Replacement MDC 2586 - New Orleans District (Continuing). Replace the Motor Vessel W-46 that is used for hydrographic surveying of navigable waterways. Due to the age of this vessel that was acquired from the U.S. Customs Department in used condition, maintenance cost are escalating because it has exceeded its 30 years of useful life. The vessel was not designed as a survey vessel and is not well suited for its present mission. The economic analysis shows replacement of the motor vessel to be the least cost alternative with a Net Present Value of \$6.2 million compared to repairing and maintaining at a Net Present Value of \$6.4 million or Net Present Value of \$7.2 million for lease. Total estimated cost: \$1,172,200. Through FY 2006: \$1,052,200 to complete design and initiate construction. FY2007: \$115,000. FY 2008: \$5,000 to complete construction.

(10) M/V VOLLERT Replacement – Galveston District (Continuing). Replace the MV VOLLERT, an aluminum-hulled boat acquired in the 1970's, modified in 1980, and at the end of its useful life. The VOLLERT does not readily allow for optimum use of state of the art hydrographic surveying and positioning equipment. It is subject to frequent breakdowns hindering management of the navigation channel boundaries from Louisiana to the Rio Grande. The VOLLERT supports the dredging mission at area and project offices in Port Arthur, Galveston, Corpus Christi and Brownsville, Texas. The economic analysis showed replacement to be the least cost alternative with

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a Net Present Value of \$1.9 million compared to a Net Present Value of \$2.0 million for refurbishment and Net Present Value of \$3.7 million for lease. Total estimated cost: \$820,000. FY 2006: \$820,000 to initiate and complete construction.

(11) M/V KING Replacement – Galveston District (Continuing). Replace the MV KING, an aluminum-hulled boat acquired in the 1970's, modified in 1980, and at the end of its useful life. The KING supports the dredging mission at area and project offices in Port Arthur, Galveston, Corpus Christi and Brownsville, Texas. The KING does not readily allow for optimum use of state of the art hydrographic surveying and position equipment; and is subject to frequent breakdowns that hinder management of the navigation channel boundaries that extend from Louisiana on the east to the Rio Grande in the south. The economic analysis showed replacement to be the least cost alternative with a Net Present Value of \$1.9 million compared to a Net Present Value of \$2.0 to refurbishment and Net Present Value of \$3.7 million for lease. Total estimated cost: \$700,000. FY 2006: \$700,000 to initiate and complete construction.

(12) Survey Boat RODOLF Replacement MDC 2440 – Portland District (Continuing). Replace the Survey Boat RODOLF because the vessel will not support the upcoming Columbia River deepening project. This surface effect ship (SES), placed in service in 1980, has become less reliable. The engines are nearing the end of their economic useful life and will require replacement in the next several years. The rubberized components that make up the SES capability of the vessel are expensive and available solely from the original manufacturer. In fact, some of these specialized and proprietary components no longer are manufactured due to the low demand. The RODOLF does surveys of the Columbia and lower Willamette Rivers up to the Bonneville Dam for the dredges ESSAYONS and YAQUINA, and commercially contracted dredges. Total estimated cost: \$3,300,000. Through FY 2006: \$25,500 to initiate design. FY 2007: \$10,000 to complete design. FY2008: \$2,720,000 for construction. Future Years: \$514,200 to complete construction.

(13) Survey Boat HICKSON Replacement MDC 2441 – Portland District (Continuing). Replace the Survey Boat HICKSON, placed in service in 1968, because the engines and ancillary machinery are increasingly unreliable and at the end of their economic useful life. The 36-years old, two-stroke engines lack adequate exhaust conditioning to reduce emissions and greenhouse gases. The hull of the vessel will require extensive repairs in a few years. The HICKSON performs ocean port surveys and other surveys for dredging along the Oregon coast and is the only survey vessel in the Corps with size and power to transit rough seas between Pacific ports. Total estimated cost: \$3,300,000. Through FY 2006: \$34,700 to initiate design. FY 2007: \$10,000 to complete design. FY2008: \$2,700,000 for construction. Future Years: \$514,200 to complete construction.

(14) Peoria Rock Barges (2) Replacement MDC 2584 - Rock Island District (Continuing). Acquiring two rock barges will replace three (a 1959 barge and two 1973 barges), which are used to remove dredged material and to replace rock protection on the Illinois River from Chicago to Beardstown. The decks of these barges are badly cupped and deteriorated from the many years of loading and unloading. In addition, the container boxes are bowed and will need extensive work. **Total estimated cost: \$1,706,400** Through FY 2006: \$1,383,700. FY 2007: \$170,000. FY 2008: \$152,700.

(15) M/V PEORIA Replacement MDC 2567 - Rock Island District (Continuing). Replacing the M/V PEORIA, a 40-year-old towboat constructed in 1963, is a safety issue, for without power the vessel could be swept over a dam, or into another vessel, dam or structure. In addition, the thinning hull will need to be re-skinned. Its mission is to tow repair fleet on the Illinois and other inland waterways. This single crew boat is used to position crane barges for lock and gate work at eight locks and dams. The engine, replaced in 1976, will soon need to be replaced again. Should the engine fail, the PEORIA has no means to maneuver, and is undersized and underpowered for towing the newer barges and cranes. Total estimated cost: \$5,928,000. Through FY 2006 \$5,127,700. FY 2007: \$450,000 to continue construction. FY 2008: \$300,300. Future years: \$50,000 to complete construction.

(16) Deck Barges (6) Replacement MDC 2588– Omaha District (Continuing). Replace six deck barges built in 1946, which are in very poor condition and marginally watertight. The barge's interior structure has been leaking for the past 15 years. The bottoms, tops and most of the sides have been removed and replaced several times but, due to the extreme rusting of the interior structure this is no longer feasible and beyond economical repair. Their primary purpose is to support the Missouri River Bank Stabilization and Restoration, the Kenslers Bend Bank Stabilization and the Missouri River Fish and Wildlife Mitigation projects. In addition, the deck barges are used to transport silt and sand dredged material on the Missouri River. The barges are at risk of sinking and placing the towboat's crew in an unsafe environment. Total estimated cost: \$2,835,200. Through FY 2006: \$2,753,100 for design and to initiate construction.. FY 2007: \$82,100 to complete construction.

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

(17) Towboat PATOKA Replacement MDC 2573 – Mobile District (Continuing). Replace the 46-year-old PATOKA towboat because the mission has changed due to replacement of the crane barge with a new 35-ton capacity crane barge @ 50-foot radius. The new mission of the towboat includes maintaining the nine locks and spillways on the Black Warrior and Tombigbee and Alabama River systems. Repairs have kept the towboat operating but have not addressed the age of the hull, piping systems and electrical distribution system. Repowering the PATOKA from the present 680 horsepower to the maximum 900 horsepower would only provide half the horsepower needed to safely support the new crane barge and attendant plant. The PATOKA is used to provide crew quarters and mobility support for navigation channel maintenance on the Gulf Intracoastal Waterway from Pensacola, Florida, east to Apalachicola Bay at the East Pass (Destin), Escambia River, Bayou Chico, and Scipio Creek and on the Apalachicola-Chattahoochee-Flint River system projects in Florida. An economic analysis favors replacement by acquisition with an NPV of \$5.2 million was the least costly alternative as compared to lease option with NPV \$11.1. Total estimated cost: \$6,382,500. Through FY2006: \$6,272,500 for design and to initiate construction. FY 2007: \$100,000 to continue construction. FY 2008: \$10,000 to complete construction effort.

(18) Towboat IROQUOIS Replacement MDC 2297 – Nashville District (Continuing). Replace the IROQUOIS because major maintenance and repair will not allow it to continue service for more than a few years. The IROQUOIS was scheduled for replacement in 1995. The vessel has been seaworthy until recently when major hull components began showing signs of metal fatigue and the effects of 46 years of service. Shipyards could not guarantee how long the major repairs would extend the vessel's life. The vessel lacks the power to push modern floating plant equipment of the repair fleet in high flow conditions, frequently experienced on the 1,170 miles of navigable channels and 14 navigation locks along the Ohio River, Tennessee, and Cumberland Rivers. This poses a severe safety problem to the vessel's crew, attending floating plant, and repair fleet's mission. In addition, the IROQUOIS was designed and constructed before collision bulkheads and double plating for fuel tanks were required and poses an environmental danger should the hull become compromised. The 750 horsepower towboat, constructed in 1955 is used to transport and position floating plant items such as derrick boats, deck barges and dump scows. On several occasions, the IROQUOIS has responded to emergency dredging requests to aid in keeping river traffic moving. Total estimated cost: \$4,000,000. Through FY2006: \$3,988,000 for design and initiate construction. FY 2006: \$90,000 to continue construction. FY 2007: \$12,000 to complete construction effort.

(19) Derrick Boat No.10, Crane and Shop Barge Replacement MDC 2559 – Nashville District (Continuing). The replacement will be a deck barge with spuds, a small workshop and a reinforced deck, which will allow the future addition of a heavy lift crawler crane. In addition, the existing barge is under-sized to handle the increasingly complex maintenance activities at aged lock structures, and will not have the capacity to maintain the new Kentucky Lock. This acquisition is consistent with the Floating Plant Improvement Plan to replace smaller barges approaching the end of useful life with larger capacity barges. The barges support construction and maintenance activities on the 1,170 miles of navigable channels and 14 navigable locks. The barges are used to transport equipment such as mobile cranes and structures such as lock closure structures, mooring cell templates and lock dewatering pumps related to lock and dam maintenance activities. Total estimated cost: \$6,712,100. Through FY 2006: \$6,477,100 for design and construction. FY 2007: \$161,900 to complete construction.

(20) Crawler Crane, MDC 2643 – Nashville District (Continuing). This large capacity mobile crane replaces the oldest Derrick Boat No. 10 in order to meet the growing workload and heavy lift requirements on the 1,170 miles of navigable channels and at 14 navigation locks. The new crane will support construction and maintenance activities and operate from the new shop/crane barge (MDC 2559) currently under construction. Two aged derrick boats that see extensive utilization have inadequate lifting capacities of less than 75,000 lbs at a fifty-foot radius. Derrick Boat No. 10 frequently makes lifts that exceed 90 percent of its rated lifting capacity causing abnormal wear on machinery and components resulting in higher maintenance cost and increased downtime. Serious damage to the Derrick boat and the possibility of injury to employees could occur. Total estimated cost: \$3,833,000. Through FY 2006 \$2,207,200 FY 2007: \$332,000. FY 2008: \$22,700.

(21) Maintenance Gate Barge and Spare Gates MDC 2492 – Rock Island (Continuing). Acquire spare gate barges to be available to return a lock to service. The age of the lock structures, over 60 years old, combined with heavy usage, results in both sets of spare gates on hand being in use most of the time. In the event of the failure of an additional structure and without additional spare gate replacement capability, there would be none available to return a lock to service. In that event, without the rapid replacement of a damaged gate, commercial traffic on the Mississippi River could be delayed due to a lock shut down creating a substantially negative economic impact. It is estimated that the economic cost to the region would be approximately \$10,000,000 over the next 40 years, the estimated life of the gate barge. Total estimated cost: \$8,513,700. Through FY 2005: \$5,687,000 for design and construction. FY 2006: \$120,000 to continue construction. FY 2007: \$80,000 to continue construction. FY 2008 \$39,000 This project was forwarded for an out-of-cycle approval of the higher obligational authority because of the potential for having to pay a contract claim.

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

(22) Crane Barge MAZON Replacement MDC 2509 – Rock Island District (Continuing). Replace the Crane Barge MAZON that in the last six years has had an average of six weeks of down time per year due to repairs. The Crane Barge MAZON hull is worn thin, in need of repairs and at the end of its useful life. The crane, built in 1970, is continuously breaking down. The MAZON is required to be available 52 weeks of the year and is used for strike removal and stone placement on the Illinois River, as well as for lock and dam work throughout the Illinois River basin from Chicago to Grafton, and occasionally the Ohio and Mississippi rivers. The lack of a rapid response capability will delay navigation and cause economic harm. In addition, the MAZON has no restroom facilities, limited storage space and no transport capability for the crane. The estimated cost: \$4,485,100. Through FY 2006: \$4,352,900 for design and construction. FY 2007 \$93,200 to complete construction.

(23) Crane Barge KEWANEE Replacement MDC 2481 – Rock Island (Continuing). Replace the KEWANEE crane barge, which is 88 years old, because it has suffered corrosion combined with normal wear and tear that has deteriorated it to the point where repairs are no longer feasible. A breakdown of the KEWAUNEE crane barge causes costly delays to accomplishment of the mission. The KEWANEE is used to support the Quad Cities crane barge during gate changes and to provide daily support to structural maintenance gate repairs. The cranes and barges are vital to the operation of the maintenance unit for repairs to the miter gates. The barge, constructed in 1913, was converted to a crane barge in 1981. The crane is near the end of its life. Total estimated cost: \$9,455,000. Through FY 2006: \$8,907,800. FY 2007: \$200,000. FY 2008: \$200,000 to continue construction. Future years: \$127,,200 to complete construction.

(24) Towboat ROCK ISLAND Replacement MDC 2555 – Rock Island District (Continuing). . Replace the 31-years-old Towboat ROCK ISLAND that has developed extensive pitting on the hull exterior requiring a costly hull replacement below the waterline. The internal black water-holding tank, an integral part of the hull, has corroded through and has been abandoned in place due to the high cost of replacement. In addition, the ROCK ISLAND is underpowered and requires additional horsepower to move the fleet safely. Continued operation of the boat under current conditions will result in increased maintenance costs and reduced reliability. The Towboat ROCK ISLAND is used to support the M/V Bettendorf, transport the structure maintenance fleet and tend the Derrick Boat KEWAUNEE during gate changes. Total estimated cost: \$6,982,400 . Through FY 2006: \$6,722,400 . FY 2007: \$250,000 to continue construction. FY 2008: \$10,000 to complete construction.

(25) Towboat M/V GEORGE W. BRITTON Replacement MDC 2350– Huntington District (Continuing). Replace The M/V George W. Britton (Towboat 71) because its underpowered 1200 horsepower propulsion system impairs the ability of the vessel master or pilot to move the fleet safely and efficiently. The M/V George W. Britton is used to transport the repair fleet floating plant to perform scheduled or emergency maintenance to 400 miles of navigable channels and navigation structures on the Ohio and Kanawha Rivers. The floating plant has nearly double its original size, capacity and tonnage in recent years. Transport of existing floating plant from one project to another during high water periods requires two trips. During high water periods, the Britton's rate of travel is often slowed to less than one mile per hour pushing on one-half the fleet. The economic analysis shows that re-powering the Britton is slightly cheaper than the cost of acquiring a new towboat. However, re-powering would extend the useful life of the Britton by only ten years whereas, a new towboat has a 40-year life. Total estimated cost: \$6,672,100. Through FY 2006: \$6,647,100 for design and initiate construction. FY 2007: \$25,000 to complete construction effort.

(26) Towboat M/V LIPSCOMB Replacement MDC 2520 – Vicksburg District (Continuing). The proposed replacement would have more horsepower and a modernized hull design for increased towing and operational efficiency. The new vessel would require a smaller crew. The M/V LIPSCOMB is used to support revetment construction and maintenance along about 1,000 miles of navigable channels on the Mississippi, Atchafalaya and Red Rivers, and Channel Patrol on the Mississippi River. The M/V LIPSCOMB was built in 1958 and has outlived its normal economic life by 2-1/2 years. Furthermore, the LIPSCOMB has no compartment flood ability that is a major safety issue for crew and passengers. The Corps standard is one-compartment damage stability for this type vessel. The updated economic analysis shows the replacement of the LIPSCOMB is more cost effective, with a Net Present Value of \$57.8 million, 17% less than the alternative of maintaining and repairing the existing vessel. Total estimated cost: \$10,166,400. Through FY 2006: \$10,036,400 for design and construction. FY 2007: \$120,000 to continue construction. FY 2008: \$10,000 to complete construction effort.

d. Fixed Land Plant and Automated Systems:

(1) Real Estate Management Information System (REMIS) – Corpwide (New).



APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

The U.S. Army Corps of Engineers is the responsible agent for the acquisition and disposition of real estate for the Army Civil Works and Military projects and for the Air Force. REMIS is the tool that the Corps uses to administer and manage property that is out-granted at civil projects, Army bases and Air Force installations. REMIS is the official, auditable database of record for the Corps Civil Works Real Property Inventory (RPI) of public lands, buildings and structures.. REMIS supports e-Gov as the official database of record for the real property inventory of Army and Air Force land holdings. Base Realignment and Closure (BRAC) actions are administered by USACE and recorded in REMIS. REMIS serves as a Chief Financial Officer compliant subsidiary ledger to CEFMS (Corps of Engineers Financial Management System), and provides annual accountability reports to the GSA (General Services Administration). The current version of REMIS has performance gaps relating to: full compliance with the DoD Real Property Inventory Requirements (RPIR), DoDI 4165.14 Instructions, DoD Real Property Unique Identification Registry (RPIUR), and Geographic Information System (GIS) capability, Graphical User Interface, Data Sharing, Document Administration and Disposal. Closure of these performance gaps will enable REMIS to become a more competent USACE tool for life-cycle accountable asset management. Total estimated cost: \$6,900,000 FY 2007: \$1,000,000 FY 2008: \$3,000,000 FY 2009: \$2,900,000

(2) P2: Corps of Engineers Programs and Project Management System – Corpswide (Continuing). This project now represents scope and cost changes to the Corps of Engineers automated information management system, P2. The P2 project was completed and deployed in 2004. It was designed to support the business processes of Programs and Project Management for all districts, divisions, and the Corps headquarters. P2 currently uses two primary commercial off the shelf applications, which include Oracle Projects and Primavera software. There is also software which provides an interface between the two systems. Since deployment the system has experienced performance and reliability problems and is highly maintenance intensive. The Corps commissioned studies which resulted in the recommendation for an upgraded version of the system. Due to advances in commercial software it was found that with some additional programming Primavera could stand alone. This will simplify the system resulting in lower license fees, faster and more efficient response time, and greater system security. The user interface will be less complex resulting in greater productivity and provide a more useful tool. Total estimated cost: \$29,945,000. Through FY 2006: \$24,645,000. FY 2007: \$3,200,000. FY 2008: \$2,100,000.

(3) Facilities and Equipment Maintenance System (FEMS) – Corpswide (Continuing). FEMS is a Department of Defense migratory Computerized Maintenance Management System (CMMS). The Joint Logistics Systems Center (JLSC) developed the system to meet the needs of DoD maintenance organizations. This system was designated as a DoD migratory system in 1995. FEM is the Corps tailored version of MAXIMO Enterprise Base Systems (MRO Software, Inc.), which is a Commercial-Off-The-Shelf-System (COTS) package. FEM is deployed at the Corps' two consolidated data processing centers, and integrates O&M business processes into a cost-effective asset management program. It supports and consolidates functions within each O&M business line providing the capability to track life cycle costs of all assets. FEM is being deployed in FY05/FY06 within the Northwestern Division. Development is ongoing to meet the requirements of E.O.13327 for asset management and to update the COTS product to web-based applications. This maintenance management system is the keystone to the development of a Sustainable Infrastructure Program for all Corps assets. Aging locks and dams and flood damage reduction structures, as well as coastal structures such as jetties, breakwalls and groins are in need of rehabilitation, repair and increased maintenance to prevent failure or major breakdown of navigation and flood protection systems. The FEM will establish optimal preventive maintenance criteria to effectively reduce risk and improve reliability. Total estimated cost: \$13,300,000. Through FY 2006: \$9,255,000 for development. FY 2007: \$ 1,805,000 to begin implementation. FY 2008: \$2,240,000 to complete implementation.

(4) Corps of Engineers Automation Plan (CEAP) (Continuing). The capital acquisition portion of CEAP, renamed Corps of Engineers Enterprise Infrastructure Services (CEEIS) was created to replace the Corps mainframe computing hardware consisting of leased Honeywells at the division level and Corps-owned Harris computers at the district level. The Corps awarded a contract to the Control Data Systems, Inc., in October 1989 for hardware/software acquisition and support services. The contract was structured for maximum flexibility, not committing the Corps beyond the first year but providing the Corps with 10 annual renewal options. The contract also provided for a pilot test at the Southwestern Division, the Waterways Experiment Station, and the former Headquarters' Engineer Automation Support Activity. Based on pilot and stress test results and a cost comparison of various deployment scenarios, the Corps redeployed pilot test equipment to two large regional processing sites, one in Portland, Oregon and the other in Vicksburg, Mississippi. To maintain a viable corporate-wide system at these two regional sites, the Corps has invested in

APPROPRIATION TITLE: Revolving Fund- Plant Replacement and Improvement Program (PRIP)

additional mainframe processing capacity, operating software, additional storage capacity, communications devices, and associated processors to link all Corps sites to the two regional centers. Total estimated cost: \$112,440,000. Through FY 2006: \$99,240,000. FY 2007: \$3,300,000. FY 2008: \$3,300,000. Future Years: \$3,300,000.

e. Tools, Office Furniture and Equipment

(1) Furnish Renovated Bolling Federal Building – Kansas City District (New). The Kansas City District office is scheduled to relocate within the Bolling Federal Building. The furniture is required to accommodate the newly renovated space. The current furniture is over ten years old and cannot be used in the renovated space due to condition, age, and the variation in sizes. The new furniture will provide for standardized work stations for all employees. The funding will provide for 492 individual work stations, 33 private offices, and 9 conference rooms. Total estimated cost: \$3,700,000. FY 2008: \$3,700,000.

(2) Systems Furniture Replacement – St. Louis District (New). Project objective is the acquisition of new systems furniture for the St. Louis District office in order to meet mandated space requirements, technological enhancements in the future, and meet safety matters to do with ergonomics. Space reduction guidelines have been issued command-wide in order to bring rental costs in line with projected budgets. The new product will allow for an ease of expansion over the initial 450 work stations, and make realignments of the organization much less disruptive. Present system is in disrepair, and has exceeded its ten year expected life. Affordability analysis shows that the ten year payback period is feasible. Total estimated cost: \$3,895,274. FY 2008: \$3,895,274.

(3) Zorinsky Building GSA Leasehold Improvement and Furniture - Omaha District (Continuing). The Edward Zorinsky Federal Building, a GSA owned building is currently undergoing a complete building renovation. To accommodate the renovation, the Omaha District has temporarily moved its Headquarters to three temporary locations. During the GSA renovation of the building, the district is responsible for communications wiring for workstations to the local area network (LAN), a computer room, an AV equipment and control system in the Executive Conference Room and installation of a communications data center switch and an uninterrupted power supply. In addition, the plans include purchase of modular/systems furniture for 830+ employees. The existing furniture used at the temporary locations, moved from the Zorinsky Building, range from 7-year-old systems furniture to 20-year-stand-alone furniture with conditions ranging from good to unserviceable. This furniture requires an average of 190 square feet per person. The purchase of new system/modular furniture will reduce the average space utilization to 160 square feet per person, thus reducing the footprint by 30 square feet per employee. Upon completion of the renovation of the Zorinsky Bldg, GSA anticipates the rent will be at least \$25.00 per sq foot. Saving 30 square feet per person with 830 employees is a cost avoidance or savings of \$622,500 per year in rent. Total estimated cost is \$7,645,000 for FY 2007 leasehold improvement and furniture purchase.

# INVESTIGATIONS

APPROPRIATION TITLE: General Investigations, FY 2008

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests

(1) Planning Assistance to States

SCOPE: This Corps of Engineers program stems from Section 22 of the Water Resources Development Act of 1974, as amended, which authorizes the Secretary of the Army to assist States, local governments, Indian tribes, and other non-Federal entities in the preparation of comprehensive plans for the development, utilization, and conservation of water and related land resources. The studies are cost-shared on a 50% Federal, 50% non-Federal basis. The program can encompass many types of studies dealing with water resources issues, including environmental conservation/restoration, wetlands evaluation, water supply and demand, water quality, flood damage reduction, coastal zone management, and dam safety.

SUMMARIZED FINANCIAL DATA:

Allocation Requested for FY 2008	\$4,550,000
Allocation for FY 2007	\$4,550,000
Change in FY 2008 from FY 2007	\$0

JUSTIFICATION: The Planning Assistance to States program has continued to evolve into a highly effective tool for providing technical and planning assistance to states, local governments, and Indian tribes. These customers recognize the need to develop locally directed solutions to their water resources problems. Interest from states, regional and local governments, Indian tribes, and other non-Federal public agencies in this highly efficient and effective Program continues to grow. The FY 2007 amount will enable the Corps to provide much needed planning and technical assistance to aid them in a wide variety of water resource efforts, including environmental restoration studies, watershed planning, and flood plain management planning. Currently, there are ongoing studies that require additional funds to complete, and a number of unfunded studies that have been identified by states, communities, and Indian Tribes as high priority studies. The FY 2008 request will allow the Corps to continue and complete ongoing studies, and initiate additional high priority studies.

ACCOMPLISHMENTS: In fiscal year 2006, the Corps of Engineers had hundreds of studies underway in almost every State and the pacific and caribbean Islands, and Federally-recognized Indian tribes. These studies provided technical and planning assistance for a full range of water resources issues. Significant efforts involved studies to assist local communities in restoring urban river environments, and accomplishing wetlands identification and mapping studies. In addition, efforts were undertaken to assist states and local governments in ecosystem restoration, drinking water supply and demand, water quality, and flood damage reduction.

APPROPRIATION TITLE: Investigations, FY 2008

1. Surveys

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests (Continued)

(2) Other Coordination Programs

(a) The Special Investigations request is \$1,600,000. The amount of \$100,000 provides for the review of preliminary permit and licenses applications for non-Federal hydroelectric power development either at or affecting Corps water resource projects. The amount of \$1,500,000 provides for (1) special investigations and reports of nominal scope prepared pursuant to Congressional and other requests from outside the Corps of Engineers for information relative to projects or activities which have no funds; (2) similar work of detailed scope, as specifically authorized by the Chief of Engineers; and (3) review of reports and environmental impact statements of other agencies. Among the investigations paid for from these funds are investigations of nominal scope of flooding potential and flood damages, drainage, harbor improvements, anchorages, and development of navigation channels.

APPROPRIATION TITLE: Investigations, FY 2008

1. Surveys

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests (Continued)

(2) Other Coordination Programs

(b) The Gulf of Mexico Program (GMP) request is \$100,000. The GMP formulates and implements creative solutions to economic and environmental issues with Gulf-wide and national implications. The GMP also serves as the regional administrative component of Coastal America (CA). Hypoxia/nutrient enrichment reductions, habitat restoration/protection, public health (shellfish) improvements and non-indigenous species impact reductions are the GMP focus areas. The GMP's lead in facilitating the Gulf Region's response to the Ocean Action Plan is highlighting the Corps habitat restoration and support (e.g., regional sediment management) capabilities. U.S. Environmental Protection Agency-initiated, the GMP is partnership-driven, blending the programs and resources of Federal, state and local governments, with the resources and commitments of business, industry, citizens groups and academia. The Corps has a staff member serving as liaison to the GMP Office (GMPO). That individual's primary duty is to provide the linkage between HQUSACE, the Southwestern, Mississippi Valley and South Atlantic Divisions, and their Gulf districts and the current and evolving activities of the GMP/GMPO/CA Gulf Region. Personnel from several districts and divisions serve on various task groups and support focus area groups. Secondary duties of the Corps liaison include: 1) coordinating with and supporting the Corps representative on the GMP's Management Committee as well as the DOD representative serving on the GMP's Policy Review Board; 2) functioning as the Corps' alternate Management Committee representative; 3) functioning as a GMPO Interagency Management Team Member; 4) mentoring the GMPO Habitat Focus Team; and, 5) serving as a member of the GMPO Hypoxia Focus Team. The Corps liaison also: 1) serves as the Corps' functional and program link to the Coastal America-Gulf of Mexico Regional Implementation Team and national CA office; and, 2) serves as a CA regional co-chair. The requested funds will allow participation of the Corps in implementation of GMP-formulated and associated CA initiatives.

APPROPRIATION TITLE: Investigations, FY 2008

1. SURVEYS

e. Cooperation with Other Federal Agencies, States, and Non-Federal Interests

(5) Chesapeake Bay Program. The amount of \$75,000 is requested to continue activities initiated under Special Investigations. The Chesapeake Bay Program (CBP) is an interagency program, initiated by the US Environmental Protection Agency (EPA), for the protection and restoration of the bay's natural resources. These natural resources have tremendous environmental and economic significance to the northeast region and to the Nation. Following extensive Corps of Engineers investigations and EPA studies in the 1970's and early 1980's, it became increasingly clear that the Chesapeake Bay as a system was under intense pressure from development and overuse and was undergoing degradation in water quality, living resources and other ecological indicators. With the funds requested, the Baltimore District will continue participation in the CBP Implementation Committee; the Federal Agencies Subcommittee; the Living Resources, Monitoring, Modeling and Toxics Subcommittee; and numerous workgroups addressing various subjects such as wetlands, submerged aquatic vegetation, and land stewardship. Assistant Secretary of the Army (Civil Works) was a signatory on a Special Tributary Strategy for Federal Lands in the District of Columbia agreement that commits the Corps to develop storm water pollution prevention and nutrient management plans. The Baltimore District will play a key role on this Special Tributary Strategy as well as initiate activities to enhance stewardship of Corps -owned land within the Bay watershed. Many of these actions affect Corps authorized missions in the Chesapeake Bay.

APPROPRIATION TITLE: Investigations, FY 2008

1. Surveys

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests

(2) Other Coordination Programs (continued)

(d) The Pacific Northwest Forest Case Study request is \$50,000. The Northwest Forest Plan (NFP) is an interagency program, initiated by the White House's Council of Environmental Quality, for ecosystem management of watersheds within the public lands in the Pacific Northwest within the range of the Northern Spotted Owl (24,000,000 acres). The NFP institutes an interagency approach for restoring and protecting animal and plant species on public lands and restoration of environmental habitats. In FY 1999, the Corps of Engineers became an official signatory agency to the NFP Memorandum of Understanding. However, due to reduced funding over the past several years, the Corps did not resign the new MOU in 2003. With the funds requested, Portland District will participate in NFP activities as an adjunct representative to the various regional executive and management committees on a part-time basis. NFP participants are presently concentrating on further refining the scopes of agency participation and contributions with the goal of streamlining the implementation of timber and restoration activities within its watershed-scale ecosystem management strategies. Many of these strategies and programs involve, and will benefit from, the Corps authorized missions throughout the western states. The NFP presents the best outreach opportunity for the Corps to expand its involvement with the other agencies of the Federal and State communities to use all of our engineering and environmental capabilities to address many of government's missions.



APPROPRIATION TITLE: Investigations, FY 2008

1. Surveys

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests

(2) Other Coordination Programs (continued)

(e) The Interagency Water Resources Development request is \$905,000. This amount provides \$750,000 for Corps of Engineers district activities, not otherwise funded, that require coordination effort with non-Federal interests. These activities include items such as meeting with City, County and State officials to help them solve water resources problems when they have sought advice or to determine whether Corps programs are available and may be used to address the problems. This will also cover costs of meeting with potential study sponsors before studies are budgeted to insure they understand study cost sharing and to obtain an indication of their interest in participating in a future study. It also provides \$50,000 for two American Heritage River Navigators who are supported by the US Army Corps of Engineers, based upon Executive Order 13061, dated 11 September 1997. These River Navigators provide direct support to the Community Partners for the New River, which flows through NC, VA and WV; and for the Upper Mississippi River above St. Louis, MO. The navigators assist the individual communities and community partners in accessing a variety of Federal programs to achieve the goals in the river workplans. Funds are also included to contribute to the Coastal America Partnership, including \$25,000 to assist in supporting the national office and up to \$80,000 in support of the regional teams.

APPROPRIATION TITLE: Investigations, FY 2007

1. Surveys

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests

(2) Other Coordination Programs (continued)

(f) The Interagency and International Support request is \$450,000 of which \$250,000 will allow the Corps of Engineers to participate with other Federal agencies and international organizations to address problems of national significance to the United States. The Corps of Engineers has widely recognized expertise and experience in water resources, infrastructure planning and development, and environmental protection and restoration. Frequently, other Federal agencies, particularly the State Department, the Agency for International Development, and international organizations, request use of the Corps talents in addressing problems of importance to the United States. Often the requesting entity is not able to reimburse all Corps costs, including salaries, but yet the success of the program can be greatly enhanced by employing the talents of the Corps. In many cases the Corps abilities to perform its civil works mission, promote opportunities in the U.S. private sector, and contribute to the Global War on Terror are also enhanced. In FY 2007, the program funds are being used to support the State Department on global water issues, the World Water Council, technology cooperation with Japan on water-related issues, assisting US Embassies in Kenya and Vietnam with strategic interactions, and other initiatives of national importance.

Funds of \$50,000 will support the Corps' technical coordination and management of the hydrologic science and integrated water resources management (IWRM) related activities of the US National Commission for UNESCO, scientific interaction with UNESCO's National University Centers, including those for which the Corps has Memorandum of Understanding (MOU) responsibilities: the Center for Arid and Semi-Arid Zones in Latin America and the Caribbean (CAZALAC); the Institute for Water Education (IHE); the International Center Hazards and Risk Management (ICHARM) and other IHP initiatives. The requested funds will be used to cover Corps salary and travel costs not otherwise readily available. Support to international organizations will be undertaken only after consultation with the State Department.

Funds of \$100,000 will support Corps collaboration with the Dutch to continue to gain knowledge from the Dutch in a number of areas. This exchange initiated in FY 2005 has been particularly useful in the wake of our coastal hurricanes and the Dutch have been quite responsive and helpful to us. The following are thrust areas that have been mutually identified. Dredging: The Dutch have extensive experience in this area and we stand to benefit greatly from their technologies and lessons learned. Sample targeted areas for sharing include: Re-suspension of sediments due to dredging; contaminated sediments: risk assessment, remediation options, confined disposal, and beneficial use; and methods to reduce dredging costs through contracting and market forecasting. Coastal Zone Management: The Dutch have devised an extensive range of structural and non-structural approaches related to coastal zone management. Their Room for the River process involves a number of innovative techniques designed to improve floodplain management. They have built an impressive network of storm surge barriers, flood gates, reinforced levees and flood walls. Risk and Reliability: The Dutch have worked closely with us on post-Katrina support and they have developed a unique approach to addressing flood and storm safety. The two nations have much to share in terms of taking the notion of risk and reliability to a higher level.

Funds of \$50,000 will be used to continue our water resources technical exchange of information with Japan's Ministry of Lands, Infrastructure and Transport (MLIT). Under the terms of the 2003 agreement on cooperation, USACE and MLIT alternate with annual visits to each agency. FY 2008 funds will be used to fund USACE experts to travel to Japan. The agreement has not only fostered the exchange of water resources technical and management information, but also may be considered part of the growing relationship on cooperation on addressing large scale disasters, water conditions that lead to country instability, and the overall US-Japan relationship so important to our security interests in Asia.

APPROPRIATION TITLE: General Investigations, FY 2008

1. Surveys

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests

(2) Other Coordination Programs (continued)

(g) The Inventory of Dams request is \$200,000. These funds will be used for continued minimum maintenance and publication of the National Dam Inventory. Section 215 of the Water Resources Development Act of 1996 (Public Law 104-303) authorized \$500,000 to be appropriated each fiscal year for the maintenance and publication of the National Dam Inventory. This authorization was continued in the Dam Safety and Security Act of 2002 (Public Law 107-310). This funding level will provide a minimum level of maintenance of the inventory and does not assure completeness of the inventory for public safety and security purposes. Funding at this level will not provide for inclusion of the assessment of dams in the National Inventory of Dams during FY2008. Integration of the National Inventory of Dams with the Dam Security and Analysis System to identify terrorist threats to dams will be delayed until future fiscal years. The Inventory was initially compiled in 1975 has been periodically updated to reflect construction of new dams, ownership changes, major modifications to existing dams, decommissioning and removal of dams, and improvements in the accuracy and completeness of the data. The current update includes over 80,000 dams, and focuses on current technology, integrating computer software into the inventory package to improve the ease of use, accuracy, and accessibility of the data. These funds will be used to continue information flow and data quality control processes, to enhance the state of knowledge management for dam safety. The inventory will continue to be improved utilizing rapidly evolving technology including enhanced World Wide Web access, a Geographic Information System (GIS) interface, and integration with other dam safety resources. The importance of continued maintenance and publication of the National Dam Inventory has increased. The inventory is now required for use by the Secretary of Homeland Defense and the National Dam Safety Review Board in the allocation of dam safety program assistance funds to the various States in proportion to the number of dams in the state. At this level of funding improvements to the state data will not be included in the inventory. Inventory data is also included in the biennial report to Congress on the National Dam Safety Program. The Inventory also plays an important role in the identification of infrastructure in risk due to terrorist activities. Additional efforts are also required to ensure data security in response to Homeland Defense activities. The ongoing maintenance and publishing of the Inventory is a coordinated effort involving data from the Federal and non-federal Dam Safety community in cooperation with the Interagency Committee on Dam Safety (ICODS) and the Association of State Dam Safety Officials (ASDSO).

APPROPRIATION TITLE: Investigations, FY 2008

1. Surveys

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests

(2) Other Coordination Programs (continued)

(h) The National Estuary Program request is \$50,000. These funds will be used to participate with Federal and State agencies in the National Estuary Program (NEP) administered by the Environmental Protection Agency under the Water Quality Act of 1987 (Section 320 of PL 100-4). The NEP is an interagency planning program to develop management plans for nationally significant estuaries designated by the EPA. To date, the following 28 estuaries have been designated under the program: Puget Sound, WA; Delaware Estuary, DE, NJ & PA; and Delaware Inland Bays, DE; New York/New Jersey Harbor, NY-NJ; Sarasota Bay, FL; Santa Monica Bay, CA; San Francisco Bay, CA; Galveston Bay, TX; Albermarle/Pamlico Sound, NC; Buzzards Bay, MA; Narragansett Bay, RI; and Long Island Sound, CT-NY, NY; Massachusetts Bay, MA; Barataria/Terrebonne Bays, LA; Indian River Lagoon, FL; Casco Bay, ME; Tampa Bay, FL; San Juan Bay, PR; Corpus Christi Bay, TX; Tillamook Bay, OR; Peconic Bay, NY, Barnegat Bay, NJ; Charlotte Harbor, FL; Lower Columbia River Estuary, OR & WA; Maryland Coastal Bays, MD; Mobile Bay, AL; Morro Bay, CA; and New Hampshire Estuaries, NH. Because of extensive Corps involvement with Federal water resources projects in the nation's estuaries and other responsibilities in waters of the U.S., the Corps has been asked to participate on the management and technical advisory committees of those NEP estuaries being studied. The requested funds would be used to cover costs of Corps field office meeting attendance, field reconnaissance, and data transfer.

APPROPRIATION TITLE: Investigations, FY 2008

1. Surveys

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests

(2) Other Coordination Programs (continued)

(i) The North American Waterfowl Management (NAWMP) request is \$50,000. These funds will be used to continue cooperation with Federal and State agencies, and non-Federal interests in support of the NAWMP administered by the Department of the Interior, Fish and Wildlife Service. The NAWMP is an international program designed to reverse downward trends in North America's waterfowl populations by protecting and improving waterfowl habitats nationwide, particularly in 34 areas within the United States identified as being critical to meeting NAWMP goals and objectives. Department of the Army support to the NAWMP is set forth in an agreement signed with the Department of the Interior on January 23, 1989. The Corps of Engineers has broad water resources development responsibilities and authorities and has stewardship responsibilities for over seven million acres of water and land. Many Corps of Engineers projects contribute directly or indirectly to the habitat base for the nation's waterfowl, and other wetland species. Current and future Corps of Engineer projects are expected to play an even greater role, particularly during years of low rainfall. Also, the Corps of Engineers has recognized extensive environmental engineering and technical expertise and experience that can contribute greatly toward meeting the NAWMP waterfowl habitat improvement goals and objectives. The requested funds would be used to cover costs of Corps of Engineers field office participation in the field trips, interagency coordination meetings, and information transfer in response to conditions set forth in the agreement between the Department of the Interior and the Department of the Army.

APPROPRIATION TITLE: Investigations, FY 2008

1. Surveys

e. Coordination with Other Federal Agencies, States, and Non-Federal Interests

(2) Other Coordination Programs (continued)

(j) The Coordination with Other Water Resources Agencies request is \$200,000. Cooperation with the Department of Agriculture (USDA) is under the Watershed Protection and Flood Prevention Act of 1954 (Section 5 of PL 566-83), as amended; the Flood Control Act of December 22, 1944 (Section 1 of PL 534-78), as amended; and the National Environmental Policy Act of 1969 (PL 91-190). Executive Order No. 10913, dated 18 January 1961, requires that cognizance be taken of constructed and contemplated upstream and downstream USDA works, and that plans be submitted to the Secretary of the Army for review and comment prior to their transmission to the Congress through the President. As the agency responsible for the flood control features of basin program, the Corps of Engineers must provide the Department of Agriculture with information on proposed Corps projects, including their effect on contemplated watershed programs. The Corps is also required by Section 102 (2)(c) of the National Environmental Policy Act of 1969 to review the environmental impacts that would result from installation of USDA project features. Cooperation with the Bureau of Reclamation of the Department of the Interior includes preparation of estimates of flood control requirements, and benefits, and reservoir operating criteria for storage reservoirs to be constructed with Federal funds, in accordance with Sections 1 and 7 of PL 534-78 and Section 7 of PL 984-84, as amended. Studies made by the Bureau of Reclamation of the flood control features of proposed reclamation projects are submitted to the Corps of Engineers for review and determination of the flood control benefits. The Corps of Engineers uses the data collected by the Bureau but makes an independent evaluation of the project. The Secretary of the Interior uses the report of the Chief of Engineers in making allocation of project costs to flood control. Corps representation is required for cooperation with Federal and state agencies such as River Basin Compact Commissions; Interstate River Basin Compacts; and Regional Planning Commissions in authorized, but unfunded investigations.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

1. Surveys

Coordination with Other Federal Agencies, State, and Non-Federal Interest Other Coordination Programs

The CALFED request is \$100,000, which is a portion of the CALFED coordination funds cited in section 103(f)(4)(A) of PL 108-361, the CALFED Act. The funds will be used to continue program support, coordination, and USACE representation efforts in the Federal and State CALFED process in Fiscal Year 2008. The CALFED Record of Decision named the Corps and State of California as implementation co-mangers of the CALFED Levee System Integrity program. As stated in section 103(f)(4)(A) of PL 108-361, the CALFED Act, the Corps requests funds for program management, oversight, and coordination. Activities stated in the Act include: program support; program-wide tracking of schedules, finances, and performance; multi-agency oversight and coordination of program activities to ensure program balance and integration, development of interagency cross-cut budgets and a comprehensive finance plan to allocate costs in accordance with the Record of Decision; coordination of public outreach and involvement, including tribal, environmental justice, and public advisory activities in accordance with the Federal Advisory Committee Act; and development of annual reports.

APPROPRIATION TITLE: Investigations, Fiscal Year 2008

1. Surveys

Coordination with Other Federal Agencies, State, and Non-Federal Interest Other Coordination Programs

The Corps' FY 2008 request for Lake Tahoe is \$100,000. This funding is required to continue work associated with the Lake Tahoe Federal Interagency Partnership as directed in Executive Order 13057. The Federal Interagency Partnership is working with state and local agencies and public interest groups to arrest further deterioration of Lake Tahoe while maintaining a viable economic climate. FY 2008 activities will include \$100,000 for full active participation in Partnership Activities (includes working with local and state agencies, public advisory committees, Southern Nevada Public Land Management Act (SNPLMA) program participation, and staff work to support District, Division and HQ executive level involvement).



## 2. Collection and Study of Basic Data

### a. Flood Plain Management Services

SCOPE: This Corps of Engineers program stems from Section 206 of the 1960 Flood Control Act (PL 86-645), as amended, which authorizes the Secretary of the Army to compile and disseminate data on floods and flood damage potential and to provide guidance in their use in flood-related planning to State and local agencies. This information and guidance supports planning and implementing actions that reduce the flood hazard through wise use of flood plains. The Flood Plain Management Services Program provides flood hazard information, interpretation, and guidance for sites or short reaches of stream or coast and technical and planning assistance to states, communities and Indian Tribes; develops and disseminates guides and pamphlets to convey the nature of flood hazards and to foster public understanding of the options for dealing with flood hazards; and participates with the Federal Emergency Management Agency and local governments in the conduct of pre-disaster hurricane evacuation and preparedness studies for mobilizing local community responsiveness to natural disasters in high-hazard coastal areas.

#### SUMMARIZED FINANCIAL DATA:

Allocation Requested for FY 2008	\$5,625,000
Allocation for FY 2007	\$5,625,000
Change in FY 2008 from FY 2007	\$0

JUSTIFICATION: The funds requested for FY 2008 are to address the growing number of requests from states, regional and local governments, Indian Tribes, and other non-Federal public agencies. An increase in funds allocation will enable states and local communities to become more involved in the application of flood plain management measures. It will provide them site-specific flood and flood plain data and assistance; assist with efforts to identify flood hazards in smaller communities under growth pressures; facilitate special studies that concentrate on the prevention of future flood damages, giving increased emphasis to the application of non-structural measures; and enable critical pre-disaster hurricane evacuation and preparedness studies for states and counties along the Atlantic and Pacific Oceans, the Gulf of Mexico, and US islands in the Caribbean and Pacific.

ACCOMPLISHMENTS: Responses to requests from Federal and non-Federal agencies, communities, Indian Tribes and individuals for flood-related information, interpretation, and guidance continue to number into the tens of thousands and involve property valued at billions of dollars. The Corps participated in pre-disaster hurricane evacuation and preparedness studies for high-hazard areas in coastal states and territories; provided support for updating and improving mathematical models of flood plain hydrology and hydraulics; developed training programs in flood plain hydrology and hydraulics; and prepared flood-proofing studies.

APPROPRIATION TITLE: Investigations, FY 2008

2. Collection and Study of Basic Data

c. Other programs

(1) Stream Gaging (U.S. Geological Survey)

SCOPE: The Corps of Engineers cooperates with the U.S. Geological Survey in this effort, and contributes funds for all or part of the cost of the operation and maintenance of about 2,500 stations that are of special importance to the Corps mission. The Corps established this continuing, cooperative program in March 1928, so that streamflow data would be available to meet special needs concerning the Corps water resources responsibilities.

SUMMARIZED FINANCIAL DATA:

Estimated Five-year (FY 2008-2012) Program Cost	\$3,000,000
Allocation Requested for FY 2008	600,000
Balance to Complete Five-year Program after FY 2008	2,400,000
Allocation for FY 2007	600,000
Change in FY 2007 from FY 2006	0
Average Annual Allocation for FY 2003-2007	590,400

JUSTIFICATION: The Corps of Engineers makes extensive use of streamflow records in the planning, design, construction, and operation of water resources projects. The Basic network of stream gaging stations operated by the Geological Survey under its normal functions without support from the Corps is inadequate to meet all the special needs of the Corps water resource development responsibilities. Accordingly, a cooperative program was established under which funds are transferred to the Survey to cover, partially, the cost of operating specific stations. In the optimum development and management of water resources, it is essential that continuous records of streamflow be maintained at specific sites over a long period of years to provide a reliable measure of water resources available for various uses. This budget item covers only the non-project portion of the cooperative program. To continue the operation of stations of special interest to the Corps, an estimated total of \$16,200,000 will be required by the U.S. Geological Survey during FY 2008, exclusive of funds received from other cooperative sources. The operation and maintenance cost of these stations will be financed from three sources, as follows: (1) \$560,000 appropriated directly to the U.S. Geological Survey for special Corps stations; (2) \$600,000 from this budget item for stations not directly attributed to the Corps projects; and (3) approximately \$15,000,000 from Corps funds budgeted elsewhere for authorized projects and studies. The basic program will remain at the same level as in previous years. The need and capability in this area exceeds the requested budget amount.

ACCOMPLISHMENTS: Records for the streamflow stations supported by transfer of funds are used primarily to operate Federal flood reduction projects. In the past ten years these projects have reduced flood damages by an average of \$21 billion annually. Not only are these gages used by the Corps, but 100 percent of the data are used by the National Weather Service as the basis for its public flood forecasts. In addition, the data are published on the Internet by the Corps and/or in a regular series of reports by the U.S. Geological Survey and provide valuable information for many Federal and state agencies and the public.

COORDINATION: This program is fully coordinated with the U.S. Geological Survey. Costs for conducting the work are compiled by representatives of the Survey to identify a basis for the transfer of funds to that agency.

APPROPRIATION TITLE: Investigations, FY 2008

- 2. Collection and Study of Basic Data
  - c. Other Programs
    - (2) Precipitation Studies (National Weather Service)

SCOPE: This is the Hydrometeorological Studies Program conducted for the Corps of Engineers by the National Weather Service (NWS). The NWS performs analyses of storm rainfall and other meteorological data required to develop hydrologic criteria for use by the Corps in planning, design and water control management of flood control and water resources development projects, and in floodplain management studies. The Corps transfers funds to the NWS to pay for the work.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY2008-2012) Program Cost	\$ 1,125,000
Allocation Requested for FY 2008	225,000
Balance to Complete Five-Year Program after FY 2008	900,000
Allocation for FY2007	225,000
Change in FY 2008 from FY2007	0
Average Annual Allocation for FY 2003-2007	267,500

JUSTIFICATION: The scientific services provided by the National Weather Service under this program consist of: (1) review of the meteorological aspects of storm data compiled under the Hydrologic Studies Program conducted by the Corps; (2) precipitation depth-duration-frequency estimates for regions and the nation; (4) development of meteorological parameters pertaining to hurricanes, northeasters and other wind phenomena; and (5) other studies necessary to accomplish the Corps mission. Funds in the amount of \$225,000 will be required in FY 2008 to continue the program at a level consistent with Corps needs. The entire cost of the Corps hydrometeorological studies program is funded under this budget item.

With the technology and systems for updating precipitation frequency demonstrated, we now stand ready to update precipitation frequency estimates for the rest of the U.S. and its dependencies. With expected funding of \$225K, efforts in FY 2008 will be to complete work on updating precipitation frequency estimates for the State of Hawaii, , and commence the update and revision of the precipitation frequency estimates for the portion of California not already included in NOAA Atlas 14 Volume 1. Additionally, the NWS maintains the Precipitation Frequency Data Server web portal and prepares an annual report on nationwide flooding.

ACCOMPLISHMENTS: With limited funding of \$225,000 in FY07, the NWS completed the update of precipitation frequency estimates for Puerto Rico and the U.S. Virgin Islands and advanced significantly in the State of Hawaii (scheduled for completion in FY07). Also, the Precipitation Frequency Data Server (PFDS) web portal was maintained with high availability. PFDS serviced over 50,000 requests for precipitation frequency estimates in FY06. The annual report on nationwide flooding and associated assessment of damages was prepared and delivered.

COORDINATION: This program is fully coordinated with the National Weather Service, Office of Hydrologic Development. For the precipitation-frequency study of the Ohio River basin region, the Corps assisted the NWS to obtain significant cost-sharing from the states in the region. The Corps will attempt to obtain cost sharing from the states and other federal agencies for the remaining states.

APPROPRIATION TITLE: Investigations, FY 2008

- 2. Collection and Study of Basic Data
  - c. Other Programs
    - (3) International Waters Studies

SCOPE: The Boundary Waters Treaty of 1909, the Niagara River Treaty of 1950, the Columbia River Treaty of 1961, and other less formal agreements between the Governments of the United States and Canada are concerned with the regulation, control, and use of boundary waters. Under the Boundary Waters Treaty of 1909, the International Joint Commission (IJC) was established and empowered to establish local boards, which conduct investigations and assure adherence to orders of approval pertaining to use of boundary waters issued by the Commission. Corps of Engineers representatives serve on and chair the U.S. Sections of the following IJC Boards: Saint Croix River, Champlain-Richelieu, Lake Champlain, St. Lawrence River, Niagara, Lake Superior, Lake of the Woods, Rainy Lake, Souris-Red Rivers Engineering, Souris River Control, Kootenay Lake, and Osoyoos Lake. Under separate treaties, Corps representatives serve on and chair the U.S. Sections of the Columbia River Treaty Permanent Engineering Board, the Permanent Engineering Board Committee, the Columbia River Treaty Entities, the Columbia River Treaty Operating Committee, the International Niagara Committee, and the International Lake Memphremagog Board. These Boards and Committees hold joint meetings, review report drafts and correspondence, make field inspections, obtain, collect, and analyze hydrologic and hydraulic data, and report their findings to the establishing parties. The degree of study activity varies depending upon the requirements of the Commission or Treaty under which they were established. These efforts assure better control, use, and orderly development of the jointly controlled water resources, and are of importance in attempting to meet water demands resulting from an expanding economy along the United States-Canadian border. Studies are closely related to the Corps of Engineers' Civil Works program and are summarized in the Assistant Secretary of the Army for Civil Works' Annual Report.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2008-2012) Program Cost	\$1,200,000
Allocation Requested for FY 2008	200,000
Balance to Complete Five-Year Program after FY 2008	1,000,000
Allocation for FY 2007	200,000
Change in FY 2008 from FY 2007	0
Average Annual Allocation for FY 2002-2006	322,200

JUSTIFICATION:

The amount requested for FY 2008 will fund Corps of Engineers participation in assisting the U.S. Government meet its obligations under provisions of boundary water treaties and other international agreements between the United States and Canada. CELRD provides support for implementation of the Niagara Treaty of 1950 that governs the split of Niagara River Waters between the U. S. and Canada, and between the uses of the waters.

Northwestern Division engages in activities associated with implementation of the Columbia River Treaty and the Kootenay Lake and Osoyoos Lake Boards of Control. CENWD, together with Bonneville Power Administration and British Columbia Hydro annually develop the Assured Operating Plan and the Detailed Operating Plan for the Columbia River Treaty storage projects. Funds also are used to support the work of the Columbia River Treaty Permanent Engineering Board, including publication of its annual report to the Governments. North Atlantic Division is engaged in support of the Saint Croix River Board of Control and

APPROPRIATION TITLE: Investigations, FY 2008

- 2. Collection and Study of Basic Data
  - c. Other Programs
    - (3) International Waters Studies (continued)

Gulf of Maine Council on the Marine Environment. Work in the Saint Croix R. Basin involves retrieval and analysis of water data to assure compliance with IJC rules and annual inspection of dams and fish passage facilities.

The Corps will continue to carry out its multiple responsibilities to the various IJC Boards of Control and to the several Treaty entities, boards and committees. During FY 2008, additional flow data will be obtained and used to update the rating curve used to verify compliance with Niagara Treaty requirements. In addition, pursuant to the October 1999 Plan of Study for Lake Ontario regulation improvements, the IJC established the Lake Ontario-St. Lawrence River Study Board. Investigations are continuing as the fifth year of a 5-year effort. A Plan of Study for evaluating the Lake Superior regulation criteria outflows is being developed for approval by Governments. A basin-wide hydrologic and regulation model will be implemented. Special studies related to international impacts of evaluation of endangered species compliance related to Columbia River Treaty projects will be continued by CENWD. CENAD will continue normal work in support of the Saint Croix Board of Control and the Gulf of Maine Council on the Marine Environment. Discussions are ongoing with the IJC on expansion of the IJC's mission to include environmental objectives, as described in the report entitled "The IJC and the 21st Century". The Corps will be supporting the IJC as it executes the reference from the governments regarding investigating the feasibility of establishing a demonstration watershed board and its implementation of the reference on diversion, consumption and transfer of international waters. The need and capability in this area exceeds the requested budget amount.

ACCOMPLISHMENTS:

The Corps Division and District commanders and their staffs met all of their many and diverse responsibilities in representing the United States on the previously listed IJC Boards of Control and Treaty entities, boards and committees. The IJC-sponsored special flood damage reduction study of the Red River Basin was closed without completing the full scope of the planned work because of lack of funds from the United States. CEMVD worked with the International Red River Board on the biota assessment for the Devils Lake basin and also supported an interagency modeling and review effort on the Red River of the North mainstem. CELRD has been very active in multiple Great Lakes IJC boards. CENWD continues to coordinate operations of Libby Dam under the 2001 Libby Coordination Agreement. CENWD participated as part of the U.S. Entity to prepare all Columbia River Treaty required Assured Operating Plans (AOP) and resultant Determinations of Downstream Power Benefits (DDPB). The U.S. Entity finalized the annual Detailed Operating Plan (DOP) that may produce results more advantageous to both countries for the current operating year.

APPROPRIATION TITLE: Investigations, FY 2008

2. Collection and Study of Basic Data

c. Other Programs

(4) Hydrologic Studies

SCOPE: The scope of activities under this item is determined annually based on the requests from USACE Commands and Laboratories to meet high-priority needs. These items are not covered under regular Civil Works GI and O&M funding programs. Major activities to be undertaken in the program generally include the collection of basic hydrologic data and the studies of these data for major storm events or certain special hydrologic processes. The information to be derived from this program will improve hydrologic engineering techniques for the planning, design, construction, and operation of water resources projects. The program consists of four sub-items: Storm Studies, General Hydrologic Studies, Sedimentation Studies, and Stream Flow and Rainfall Data.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2008-2012) Program Cost	\$ 1,450,000
Allocation Requested for FY 2008	250,000
Balance to Complete Five-Year Program after FY 2008	1,200,000
Allocation for FY 2007	250,000
Change in FY 2008 from FY 2007	0
Average Annual Allocation for FY 2003-2008	354,000

JUSTIFICATION:

1. Storm Studies: The Storm Studies Program is a continuing investigation of major storms for the purpose of accumulating comprehensive rainfall data. These data are used to refine the regional hydrometeorological information throughout the nation. The up-to-date hydrometeorological information is essential for design of new projects as well as for safety assessment of existing projects. We have substantial need for hydrologic data for initiation and completion of water resources studies. These data are required in the evaluation of flood-producing potentials of river basins, and constitute the major portion of the basic data used in probable maximum precipitation determinations. Funds in the amount of \$50,000 will be required in FY 2008 to work on several storm studies. Storm data gathered in study of the storms occurring in FY 2005 and 2006 in the Manoa Valley in Hawaii that feeds into the Ala Wai Canal over the Big Island of Hawaii will be input into numerical hydrological programs to develop models critical to flood damage reduction studies in Hawaii. The need and capability in this area exceeds the requested budget amount.

APPROPRIATION TITLE: Investigations, FY 2008

2. Collection and Study of Basic Data

c. Other Programs

(4) Hydrologic Studies (continued)

2. General Hydrologic Studies: Studies under this sub-item include needed improvement in the analysis of rainfall-runoff relationships, flood frequency, snowmelt studies, hydrograph development and routing at selected watersheds, model calibrations in urban areas, analyses of past floods, methods for the hydraulic analysis of non-gaged streams, and other studies of related hydrologic nature. Also included are planned upgrades to the internal Corps system of accounting for gages used largely both of control of water resources projects and also for studies of major hydrologic events. Studies of new techniques to improve the accuracy of hydrologic modeling require additional resources. New radar applications in rainfall-runoff forecast is an ongoing need. Funds in the amount of \$100,000 in FY 2008 will be required to continue this sub-item at a level to insure proper and orderly progress. The need and capability in this area exceeds the requested budget amount.

3. Sedimentation Studies: The program is a continuing effort in which funds are used for conducting non-project sedimentation studies, and for the Corps share of an interagency sediment investigation program. The sedimentation studies include: promoting and supporting the standardization and development of equipment, criteria and methodology for the collection, analysis of suspended and bedload sediment characteristics of natural streams; and laboratory studies. The Hydraulics Laboratory, Waterways Experiment Station is sponsored by the Federal Interagency Sedimentation Committee (members from 18 agencies) and constitutes the major work effort under this sub-item. Funds in the amount of \$50,000 in FY 2008 will be required to support the Federal Interagency Sedimentation Project (FISP) located at the Waterways Experiment Station. The need and capability in this area exceeds the requested budget amount.

4. Streamflow and Rainfall Data: This is a continuing program in which funds are used for installation and operation of hydrometeorology gages of non-project nature that are needed by the Corps in addition to the stations in the cooperative programs conducted by the U.S. Geological Survey and the National Weather Service for the Corps. Additionally, gages are needed to observe historical high water marks for validation of hydrologic models. An amount of \$50,000 in FY 2008 is required to continue the establishment and operation of these special-purpose gages, and to determine historical flooding in urban sites. The need and capability in this area exceeds the requested budget amount.

APPROPRIATION TITLE: Investigations, FY 2008

2. Collection and Study of Basic Data

c. Other Programs

(4) Hydrologic Studies (continued)

ACCOMPLISHMENTS

1. Storm Studies: During the period, Corps offices have gathered data on several major storms, reviewed the scope and interim results of ongoing studies by NWS on development of standard project and probable maximum storms at various basins throughout the United States and territories.
2. General Hydrologic Studies: Examples of some of the more important studies accomplished under this program are: determination of rainfall-runoff relationship in urban areas; general hydraulic model calibration; snow cover surveys; and adaptation of hydrologic programs to CADD equipment. Work was completed on the regional frequency studies for Puerto Rico and continued in the Hawaii river basins. Significant work was also accomplished in assessing the effects of debris in hydrological modeling, particularly in the fire-prone western states.
3. Sedimentation Studies: All of the funds allotted to this sub-item assisted in financing the Corps share of the cooperative Interagency Sedimentation Project at the Hydraulics Laboratory, Waterways Experiment Station.
4. Streamflow and Rainfall Data: Stations funded under this sub-item are generally established and operated several years prior to anticipated authorization for project-type activities, in order to provide a background of observed data on which to base the planning and design of projects. Progress continued at these gage sites to collect hydrometeorological data in flood prone areas to document historical flood and calibration of hydrologic models. Recent improvements in the gaging network in Hawaii enabled the Corps to capture key data from two significant storm events in 2005.

COORDINATION: The storm studies are prepared by USACE commands and are reviewed by the National Weather Services in the preparation of probable maximum precipitation estimates for the Corps. The Interagency Sedimentation Project is conducted cooperatively, and jointly funded, by eight Federal agencies. Information concerning streamflow and rainfall data collection by the Corps under this activity is made available to the U.S. Geological Survey and the National Weather Service.



APPROPRIATION TITLE: General Investigations, FY 2008

2. Collection and Study of Basic Data

c. Other Programs

(5) Scientific and Technical Information Centers

SCOPE:

Five information analysis centers (coastal engineering, cold regions engineering, concrete technology, hydraulic engineering, and soil mechanics) located at the U. S. Army Engineer Research and Development Center provide the major interface between the Corps of Engineers and the public and private sectors to gather and disseminate information as required by PL 99-802, Federal Technology Transfer Act of 1986. The function of each center is to acquire, examine, evaluate, summarize, and disseminate newly published scientific and technical information generated within the Corp of Engineers and other activities in the U.S. and abroad.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2008-2012) Program Cost	\$400,000
Allocation Requested for FY 2008	\$50,000
Balance to Complete Five-Year Program After FY 2008	\$350,000
Allocation for FY 2007*	\$77,000
*(Assumed allocation. Final, actual allocations yet to be determined.)	
Change in FY 2008 from FY 2007	-27,000
Average Annual Allocation for FY 2003-2007	\$70,000

JUSTIFICATION:

Public Law 99-802, Federal Technology Transfer Act of 1986, requires technology transfer from Federal agencies to the private sector. In addition, both the Department of Defense and the Department of the Army have objectives of supporting the information needs of engineers and scientists and eliminating unnecessary duplication of R&D. The specified information centers, supported by their host laboratories, critically evaluate and summarize the technical validity and merits of published and unpublished research and technical publications on design, construction, or other technology utilization. User communities have been well established and distribution lists for technology transfer are continuously updated. Electronic media including the World Wide Web are used where appropriate. The effectiveness of activities and services is evaluated on a continuing basis, and technology transfer products and methodology are revised when appropriate. Priority for services will be given to deployed troops, Corps of Engineers staff, and other government personnel.

These centers are a major technology transfer resource between the public, the US scientific and engineering community, and academia for results of over 75 years of research results conducted by the ERDC laboratories in the fields of soil mechanics and foundation engineering, cold regions engineering, concrete technology, hydraulic engineering, and coastal engineering. Each center is supported by multi-disciplinary technical staff and has a comprehensive library of

APPROPRIATION TITLE: General Investigations, FY 2008

materials that have been published over the years. In a typical year, each Center responds to hundreds of information requests on subjects within its purview. These services are free to the users. In addition, services such as literature research, information synthesis, publication location, research reviews, and methodology comparisons on subjects of mutual interest to ERDC laboratories and other interested parties are available on a cost-reimbursable basis.

ACCOMPLISHMENTS IN FY 2007:

The Corps made wide use of the World Wide Web (WWW) for technology transfer. The WWW is widely accessible by both the public and private sectors and provides rapid transfer, at significant cost savings, of technical data, bulleting, general information on ongoing studies, technical notes, and ultimately technical reports. Several thousand technical inquires are received annually, with the internet playing a major role in answering those inquires. Inquires are received from Federal, state, and local government activities, universities, private sector engineers and scientists, and citizens. Responses ranged from furnishing a copy of a report, arranging to speak with an expert, furnishing generalized technical advice, or giving updates on technical developments. The Centers also digitized older ERDC research reports of significant technical value and placed them on the internet for access by the public.

<u>Information Analysis Centers</u>	<u>FY 2008</u>
Coastal Engineering	\$10,000
Cold Regions Engineering	10,000
Concrete Technology	10,000
Hydraulic Engineering	10,000
Soil Mechanics	<u>10,000</u>
	\$ 50,000

COORDINATION:

The Information Analysis Centers and their host Laboratories distribute reports, technical notes, computer programs, GIS data, abstracts, information bulletins, and other scientific and technical information to the Defense Technical Information Center (DTIC), Corps libraries, depository libraries, and identified user communities to ensure wide circulation and availability. WWW homepages are maintained on the Internet for public accessibility. Reports are also available for searching through the Corps Library Program's computer system LS/2000. DTIC publicizes reports through its own DOD database and forwards the reports to the National Technical Information Service (NTIS), Department of Commerce. NTIS places reports into a compendia of Selected Water Resources Abstracts and an annual cumulative edition, with conveniently indexed and cross referenced identification of what is being or has been done in water resources research and related scientific and engineering fields by whom, where, and when.

APPROPRIATION TITLE: Investigations, FY 2008

2. Collection and Study of Basic Data

c. Other Programs

(6) Coastal Field Data Collection

SCOPE:

Inaccurate and insufficient observation data results in project design errors for coastal navigation and storm damage reduction. For example, wave data with a 20% error that are used to design a coastal rock structure will yield a 70% error in the stone size used to build the structure. Oversized stone makes initial construction costs much higher and undersized stone results in early failure and higher than necessary life-cycle repair costs. Cost-effective mission accomplishment requires accurate and complete data. This program systematically measures, analyzes, and assembles the data Corps field offices use to accomplish the Corps mission in coastal navigation and storm damage reduction including winds, waves, currents, water levels, and bottom configuration, sediment, and geomorphology. Some of these data are nationwide or regional supporting many projects at once. Any one project would not have the funding to develop and maintain these types of high-quality, extended datasets.

The Coastal Field Data Collection Program provides required baseline data for all coastal projects, both federal and non-federal. The data is developed and maintained through eight significant activities: 1) National coastal wave history for project design, 2) coastal wave measurement for validation & verification of simulated data and real-time use, 3) Coastal observatory for long-term coastal measurements to improve our project design capabilities, 4) Participation in the interagency Integrated Ocean Observing System or IOOS, (5) Regional beach processes study in Southern California, (6) Measurements of Typhoon winds, waves and storm surges in island and reef environments, which provides data to (7) the Surge Wave Island Modeling Studies (SWIMS) effort to model island storm surges, and (8) Evaluation of Shore Protection Projects.

AUTHORITY: The basic authority for the Coastal Field Data Collection Program is 33 USC 426a which originated with the River and Harbor Act of 1945, which originated in the River and Harbor Act of 1930. The latest ER governing the program is ER 1110-2-1406 dated 1990.

JUSTIFICATION

1. National Coastal Wave Histories. Also known as *Wave Information Studies* or WIS, computer simulations generate historic wave climate based on historic weather information for all of the Nation's coasts including the Great Lakes. Surprisingly, most historic measured wave data does not include the direction waves are traveling which is critical in the project design process. Also, measured datasets are typically limited in length and are therefore inadequate for use in design and for long-term project performance studies. The simulated datasets provide all wave characteristics including wave direction, are at least 20-years long, and computed hourly for locations every few miles along the coast. These datasets are routinely used by the Corps, the coastal engineering community, and the public for coastal studies. The data are easily accessible through a website which receives over 20 daily requests for data downloads (<http://frf.usace.army.mil/wis/>). Ongoing activities are to update the wave histories for the Pacific Ocean and Great Lakes. The 10 years of recently completed Pacific Basin information has already been an invaluable source of directional wave information for areas with no measured wave information. This information has been used for projects in Oahu, Maui and American Samoa to select historic wave events, determine wave climates, establish storm wave conditions, and provide directional wave information for sediment studies and harbor design. Future activities include the addition of 10 more years of Pacific Basin wave

APPROPRIATION TITLE: Investigations, FY 2008

information, forensic studies to create a Pacific regional hindcast to fill the need for wave information close to the Pacific coast, and website product enhancements. The goal is to have wave history data for a minimum of 20 yrs with annual updates to the present.

2. Collection and Study of Basic Data

c. Other Programs

(6) Coastal Field Data Collection

2. Coastal Wave Measurements. This program of *Field Wave Gauging*, or FWG, is the only federal program with the objective of providing high-quality shallow-water wave observations nationwide. It is a primary Corps contribution to the *Integrated Ocean Observing System (IOOS)* as outlined by the Administration's Ocean Action Plan and recently approved by the Joint Subcommittee on Ocean Science and Technology (JSOST). Waves deliver energy to the coast, and wave observations are imperative for operational guidance of dredging, navigation, maintenance, and emergency operations. High quality, wave observations are also required for the design of beach and navigation projects and to implement Regional Sediment Management strategies. Gauging efforts are coordinated with the National Data Buoy Center (NDBC) of NOAA, and with the Coastal Data Information Program (CDIP) operated by the Scripps Institution of Oceanography through the State of California (<http://cdip.ucsd.edu>). The data are analyzed and made available online in real-time to the Corps, our partners and the public. Nearshore gauging is conducted cooperatively through agreements with other states and agencies and regional observing systems of the IOOS. FWG supports directional sensors in 15 NDBC buoys and partially or fully supports 24 nearshore gauges. The popularity of the program is evident from the usage/data downloads of CDIP information. In FY06, they recorded 177,000 daily hits, up 30% from the year before and 4 gigabytes of daily downloaded data (up 44%). Observations are currently concentrated on the west coast. The long-term goal is to expand the program to 70 locations and to provide coverage over large reaches of the East and Gulf Coasts and Great Lakes where observations are urgently needed. For example, there were no deepwater directional wave measurements along the east coast of Florida during the 2004 hurricanes which could have been used to alert Corps and other emergency operation officials during the events, and for post-storm assessments. The same was true for Hurricane Katrina and the central Gulf Coast in 2005, a fact that hampered the post-Katrina diagnostic efforts. Two new stations were added in FY06 (Oregon and Florida). Each station has an initial and long-term annual maintenance cost.

APPROPRIATION TITLE: Investigations, FY 2008

2. Collection and Study of Basic Data

c. Other Programs

(6) Coastal Field Data Collection

3. Coastal Observatory for long-term observations. Critical to measuring, analyzing and providing useful coastal data products for Corps Districts is the collection of intensive, long-term, high-resolution data for improving project design and performance. The Field Research Facility in Duck, North Carolina (<http://frf.usace.army.mil/>), is a unique real-world coastal facility that collects a comprehensive suite of wave, current, meteorological, bathymetric, and topographic data, typically required, but often unavailable at any Corps project site. The facility is used to evaluate oceanographic measurement techniques and equipment, collect high-resolution data during storms, conduct large interagency field experiments, and collect spatially and temporally intensive long-term measurements required to better understand complex coastal processes. These data are made available online and in real time to engineers and scientists in the Corps, other agencies (NOAA, NSF, Navy, USCG, USGS, NASA), universities, and the private sector for researching coastal processes and for developing and verifying numerical models and coastal engineering tools that predict wave environments and sediment movement affecting coastal projects, navigation safety, dredging quantities and project impacts. They also are crucial for evaluating and improving the data products produced by other program sub-items. As a unique coastal observatory, the FRF is a significant Corps contribution to the Integrated Ocean Observing System (IOOS) as specified in the President's Ocean Action Plan. Field Research Facility measurements emphasize the collection of geophysical data. However, the Corps and the IOOS require a broader range of observations including chemical and biological parameters as well as a greater interest in estuarine ecosystems.

4. Participation in the Integrated Ocean Observing Program (IOOS). Supports the Corps participation in the IOOS through financial support of Ocean.US, the interagency office for Ocean observation (<http://ocean.us>). The Corps is a signature member of the Ocean.US Memorandum of Understanding. Other participating agencies are Navy, NASA, NSF, NOAA, USGS, EPA, OSTP, Homeland Security, MMS. Corps participation in Ocean.US and IOOS workshops and meetings helps to insure that the IOOS is serving Corps requirements and that Corps districts and divisions are both contributing to, and benefiting from the IOOS. When implemented, the IOOS will result in a wide range of new real-time coastal data being made available to Corps users and partners for use in planning, operations, and emergency response.

APPROPRIATION TITLE: Investigations, FY 2008

2. Collection and Study of Basic Data

c. Other Programs

(6) Coastal Field Data Collection

5. Regional beach processes study in Southern California. Planning for Regional Sediment Management (RSM) activities (shoreline protection, beach maintenance, coastal inlet dredging and related engineering activities) requires an understanding of the coastal processes and sediment budget over regions extending tens of miles up and down coast. In this *Southern California Beach Processes Study* (SCPBS), coastal processes are monitored along a 110-mile-long littoral cell extending from the Mexican border to Long Beach in Southern California (<http://cdip.ucsd.edu/SCBPS/homepage.shtml>), with concentration on the reach between Dana Point and La Jolla. This unique populous region is characterized by narrow continental shelves, swell-dominated wave climates and cliff-backed beaches. Though environmentally and economically important, there are few data in existence that document long-, and short-term changes to the area. Monitoring activities involves semi-annual airborne Lidar mapping and other techniques for determining seasonal beach and cliff variation combined with wave measurements (collected under the FWG sub-item) and modeling to quantify the impact of coastal storms and El Nino events over multiple years. Lidar mapping has proven to be of significant value in the study of recent coastal hurricane impacts, and this study is providing a unique complement to East and Gulf coast data. The comprehensive nature of this monitoring, permit an analysis of the potential risk associated with the use of a less-comprehensive monitoring program for application to other regions of the country. This effort will contribute new findings and insight to ongoing RSM research activities and the data are critical to effective sand management in Southern California. Data collected to date are very popular with some 147,000 web hits/month (an increase of 235%) and the database framework developed has been adopted by the Corps Los Angeles district to distribute their coastal data.

6.) Measurements of Typhoon winds, waves and storm surges in island and reef environments. Tropical cyclones and hurricanes affect Pacific and Caribbean islands differently than the continental United States. Consequently, existing ocean wave forecast models, cyclone intensity scales, and design tools for cyclone conditions are inappropriate or unproven for use in the islands. The objective of the Pacific Islands Land Ocean Typhoon (PILOT) Experiment is to provide quality and timely data required to more accurately document characteristic cyclonic effects in the islands. The objectives specifically address requirements developed by the Corps' and FEMA Islands Task Force. A unique series of measurements are being made across reefs by the Corps in partnership with the University of Hawaii and the Scripps Institution of Oceanography, on both the Island of Guam, because of its high likelihood of typhoon passage, and also in Hawaii. Observations acquired to date suggest that storm waves propagating across island reefs are attenuated far greater than on typical continental beaches and greater than existing wave transformation models accommodate. Moreover, the data also confirm that waves on reefs are extremely sensitive to even small changes in the mean water level. Because wave conditions, even though distantly generated, are affected by local winds, the program is developing, through the University of Hawaii, a technique for observing low-level winds using standard weather observation radars. Plans for FY07 include expanding the program to observations in the US Caribbean Islands. This sub-item takes advantage of the expertise available in other program sub-items and collected data will support the IOOS.

APPROPRIATION TITLE: Investigations, FY 2008

2. Collection and Study of Basic Data

c. Other Programs

(6) Coastal Field Data Collection

7. Surge Wave Island Modeling Studies (SWIMS). This activity is developing numerical models and techniques appropriate for typhoon surge simulation and forecast in the islands. Typically, islands are mountainous with narrow coasts and a reef shield that offers protection from storm waves. However, typhoons can greatly raise water levels and waves resulting in coastal inundation, damage, and loss of life. Methodologies for analyzing hurricane/typhoon waves and their interaction with island coasts, including fringing coral reefs, have not received attention commensurate with the importance and complexity of the processes. A next generation island coastal storm surge and wave model will be developed using data collected under the PILOT sub-item. The model will also be applied and evaluated for longer, irregular reaches of coastline, using coastal inundation data on Kauai after Hurricane Iniki and with data from physical hydraulic model tests. Once developed, the modeling methodology will be applied initially to selected Hawaiian Island sites with exceptional importance for coastal inundation planning.

8. Performance of Shore Protection Projects. The objective of this task is to improve future shore protection projects through evaluating the performance of existing projects with emphasis on system economic and benefit performance. This data will contribute to the development of performance indicators—an Administration mandate to which the Corps agency is responding. Economic and social data are central to assessment of project performance but traditionally have been a low priority. Projects are evaluated, authorized and constructed based on economic benefits. Data sets which can be used to demonstrate economic benefits achieved by these projects are the key to long term program success. Congress, OMB, Corps' senior leaders, other agencies and those in project areas find this information central to their decision making but difficult to obtain, dated and limited. FY08 work will produce standardized templates for consistent, ongoing data collection and organization. This effort will have a strong interagency component to maximize the use of existing data and enhance credibility. Non governmental organizations and other interest groups will also be involved to leverage resources and identify needs and sources. Both national and field requirements for tools and techniques for benefit assessment will be included. Information posting will be coordinated with the prototype National Coastal Data Bank. This program will benefit from the hurricane impact assessments done following Hurricane Isabel in 2004, the Florida hurricanes of 2004, and Hurricane Katrina in 2005.

APPROPRIATION TITLE: Investigations, FY 2008

2. Collection and Study of Basic Data

c. Other Programs

(6) Coastal Field Data Collection

SUMMARIZED FINANCIAL DATA:

<u>PROGRAM ITEM</u>	<u>Ceiling FY08</u>
1. Wave Information Study	220,000
2. Field Wave Gauging	200,000
3. Field Research Facility	890,000
4. Participation in the National Ocean Observing System	30,000
5. Southern California Beach Profile Study	15,000
6. Pacific Islands Land Ocean Typhoon (PILOT) experiment	30,000
7. Surge Wave Island Modeling Studies (SWIMS)	10,000
8. Performance of Shore Protection Projects	<u>5,000</u>
Total	1,400,000

Program totals

Estimated Five Year (FY 2008-2012) Program Cost -	
Allocation Requested for FY 2008	1,400,000
Allocation for FY 2007*	4,084,000
(* Assumed allocation. Final, actual allocations yet to be determined.)	
Change in FY 2008 from FY 2007	(2,684,000)
Average Annual Allocation for FY 2003 2007	4,031,000



Appropriation Title:

- Fiscal Year 2008

**Transportation Systems**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program - \$350,000  
Allocation for FY 2007 - \$350,000  
Allocation Requested for FY 2008 - \$350,000  
Change in FY 2008 from FY 2007 - \$0

AUTHORIZATION or SCOPE:

The Transportation Systems Program supports USACE Corps Districts and Headquarters personnel in accomplishing their navigation project planning and evaluation responsibilities through the provision of integral information components. The process of planning improvements for waterway system and harbor navigation projects necessitates the consideration of the needs, opportunities, benefits, and costs associated with placement of project improvements within the context of the project-specific area as well as within the context of the overall national transportation system. The Transportation Systems Program is managed by CECW-P and technically supported by CEIWR and is a continuous, on-going effort to ensure the development of viable and practical analytical techniques, sources of information, tools and methods; the development of deep draft and shallow draft vessel operating and replacement cost data which can be applied by District offices; the provision of timely updates of the world deep draft vessel fleet, commodity, and cargo flow forecasts; the publication of reports documenting the results of research associated with the Transportation System Analysis Program and relevant areas of the NETS Program; and the provision of technical services and support to District offices and Headquarters personnel. The goals of the Transportation System Program are as follows: (1) to improve the technical quality and accuracy of navigation planning studies as well as provide for consistency in analytical procedures and technical basis for review across the wide array of planning conditions encountered by District personnel; (2) to improve the strategic planning of navigation system(s) improvements; and (3) to reduce the costs of analysis, planning, and operation of the waterborne navigation system. These goals are accomplished by providing District and headquarters analysts with useful and consistent information and analytical tools and procedures which result in end products which reflect responsible and worthwhile investment of Federal civil works funds.

JUSTIFICATION: The budget estimate provides for carrying out the following work:

The requested funding for the Transportation Systems would be used to update models and analysis used for the planning and evaluation of ports, harbors and inland waterways, and the modernization of planning methods and associated computer models to support District navigation studies nationwide. Funds would be used to continue to develop, improve, and provide inland and ocean vessel operating costs used to estimate transportation cost reduction benefits for Corps navigation studies; to the extent possible within the limits of resources, continue to develop and provide commodity and fleet forecasts of waterborne traffic for deep and shallow draft navigation projects from industry forecasting experts, and to update deep draft vessel characteristics for use by Corps field planners; to provide rail, barge and truck models for use in estimating origin-destination transportation cost savings by Corps Districts; to provide consulting technical support services to Corps District offices; to complete review of the tidal-delay model that would standardize related procedures, thus minimizing the effort and cost for each study needing to evaluate this component.

Appropriation Title:

- Fiscal Year 2008

FUNDING PROFILE

(d) Transportation Systems

<u>Actual FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>
\$ 360,000	\$ 350,000	\$ 350,000

PROPOSED ACTIVITIES FOR FY 2007 and 2008: Within constrained budgets activities for FY 2007 funds will be limited to update and publication of self-propelled deep-draft vessel operating costs (SPDDVOCs); update of fuelbunkerage costs for cargo vessels and dredge plant; update and publication of shallowdraft\inland vessel operating costs; obtain limited world trade and commodity flow forecasts; acquire and make available automated waterborne transit distance tables. Provide oversight of described products developed via contractual services and limited technical support to the field and HQUSACE.

ACCOMPLISHMENTS IN PRIOR YEARS: Accomplishments in prior years include update and publication of FY 04\05 shallow draft\inland and deep-draft vessel operating costs; updated fuel costs (with posting to HQUSACE homepage); completed an update of vessel characteristics for self-propelled carriers; secured and distributed information from Global Insight, Sparks Companies, and REEBIE Transportation models; updated the barge, rail and truck transportation models; and provided technical support to HQUSACE for limited project reviews and adaptation of vessel operating costs where required in addition to investigation of dredge plant bunkerage costs.

APPROPRIATION TITLE: Investigations, FY 2008

2. Collection and Study of Basic Data

c. Other Programs

(8) Environmental Data Studies

JUSTIFICATION: The Environmental Data Studies Program request is \$75,000. Funds will be used to continue development of an Environmental Database System, to support collection and sharing of environmental information and to support the development of performance measures for the Environmental Business Program.

ACCOMPLISHMENTS FOR FISCAL YEAR 2006: Investigated cost alternatives for development of an Ecosystem Restoration database and outlined criteria for database performance including collaboration/integration with established databases.

OBJECTIVES FOR FISCAL YEAR 2007: Continue to analyze the functions, application and structure of ecosystem restoration database to incorporate the requirements of performance-based budgeting, the ecosystem restoration PART, and the Annual Wetlands Report as well as a tracking system for project mitigation.

APPROPRIATION TITLE: General Investigations, FY 2008

2. Collection and Study of Basic Data

c. Other Programs

(8) Remote Sensing Systems Support

This request supports the overall technology transfer requirement of the Corps Civil Works Program for Remote Sensing systems, which is the responsibility of the Cold Regions Research and Engineering Laboratory (CRREL) through its Remote Sensing/Geographic Information Systems (GIS) Center of Expertise.

SUMMARIZED FINANCIAL DATA

Estimated Five-Year (FY2008-2012) Program Cost	\$1,500,000
Appropriation Requested for FY 2008	\$150,000
Balance to Complete Five-Year Program after FY2008	\$1,200,000
Appropriation for FY 2007 * Assumed allocation. Final actual allocations yet to be determined.	\$150,000
Increase of FY 2008 from FY 2007	0

JUSTIFICATION: The Remote Sensing/GIS Center is the Corps' Center of Expertise for Civil Works Remote Sensing and GIS technologies, providing mission essential support as part of the USACE 2012 organization. Through centralized management of this function, the Center provides cost-effective support through technology transfer and applications development for Corps mission responsibilities in all business practice areas: navigation, flood and coastal storm damage reduction, hydropower, regulatory, environment, emergency management, recreation, water supply, and work for others. An enterprise GIS approach is an essential component of this support. Continuing interaction with other researchers and practitioners throughout the Corps, government, the private sector, and academia assures that state-of-the-art and state-of-the-practice knowledge of evolving trends that are relevant to USACE activities are available for the Corps and that duplication of effort is avoided.

Declines in manpower require working smarter, better, and faster. Contributing to this effort, the Center develops approaches for the integration of data from the disparate sources necessary for system wide land and water resources management including: regional sediment management, regional water management, and ecosystem processes and assessment; basin studies; water control; support to emergency management; and compliance with the attendant environmental regulations and related policies. The Center maintains cognizance of state-of-the-art sensors, data collection, analysis, and storage systems, commercial software, and bridging software that integrates these with operational technologies and delivers them to the Corps' divisions, districts, and other agencies' activities. Technology is transferred through telephone and short, no cost assistance to the field. The existence of the Center ensures that the necessary support can be rapidly directed toward solving operational problems that require specialized expertise. The PROSPECT training program in remote sensing and GIS, managed by Center staff, provides another avenue for the transfer of knowledge to those who are, or soon will be, using these technologies. Training also is conducted in the field through workshops, conferences, and distance learning. White papers, pilot projects, Corps and other publications, including Engineering Letters, Circulars, and Manuals, and the Internet, also are used to transfer procedures and lessons learned to end users.

APPROPRIATION TITLE: General Investigations, FY 2008

ACCOMPLISHMENTS IN FY 2007:

1. As the Center of Expertise, served as key resource and technology point of contact for the Corps of Engineers for Civil Works remote sensing and GIS. The team of geospatial experts at the Remote Sensing/GIS Center provided access to required expertise to meet the needs of USACE personnel with questions about imagery or Geographic Information Systems.
2. Provided guidance and technical support to the Corps' Geospatial Community of Practice (COP) and provided leadership to the remote sensing, hydrology and hydraulics, and emergency sub-COPs. A number of the COPs in USACE have technical issues that are related to the geospatial technologies. The Remote Sensing/GIS Center of Expertise funds staff to participate in the activities of the COPs to assure that appropriate linkage to the geospatial technologies is available.
3. Supported one-stop service requests from Corps districts and divisions. The Remote Sensing/GIS Center provides no cost support to USACE elements having problems that can be solved in less than 3 days.
4. Provided leadership and technical support to strategic and enterprise USACE geospatial initiatives: System Wide Water Resources Program; Levee Database development; Readiness XXI Technology Transfer Program Management Team; Geospatial Operations and Maintenance Business Interlink (gORM) team member; Emergency Management Remote Sensing, GIS, and Modeling Group; and Hydrology and Hydraulics modeling software development and support team member.
5. Provided technical support to Corps District offices for the development of implementation plans for Geospatial data management including development enterprise geospatial data approaches. This supports includes discussions with district personnel concerning current and desired approaches, consideration of what is occurring in all divisions in the district, and enterprise issues.

PROJECTED ACCOMPLISHMENTS IN FY 2008:

1. As the Center of Expertise, served as key resource and technology point of contact for the Corps of Engineers for Civil Works remote sensing and GIS. The team of geospatial experts at the Remote Sensing/GIS Center provided access to required expertise to meet the needs of USACE personnel with questions about imagery or Geographic Information Systems.
2. Provided guidance and technical support to the Corps' Geospatial Community of Practice (COP) and provided leadership to the remote sensing, hydrology and hydraulics, and emergency sub-COPs. Although the COPs are gaining maturity, questions relating to the integration of the geospatial technologies into the COPs business areas still arise. Expertise is provided from the Remote Sensing/GIS Center to see that accurate information is available.
3. Supported one-stop service requests from Corps districts and divisions. The Remote Sensing/GIS Center provides no cost support to USACE elements having problems that can be solved in less than 3 days.
4. Provided technical support to Corps District offices for the development of implementation plans for Geospatial data management including development enterprise geospatial data approaches. This supports includes discussions with district personnel concerning current and desired approaches, consideration of what is occurring in all divisions in the district, and enterprise issues.

5 February 2007

APPROPRIATION TITLE: General Investigations, FY 2008

5. Provided leadership and technical support to strategic and enterprise USACE geospatial initiatives: System Wide Water Resources Program, Missouri River Program; Readiness XXI Technology Transfer Program Management Team; Emergency Management Remedial Action Program; Geospatial Operations and Maintenance Business Interlink (gORM) team member; and Hydrology and Hydraulics modeling software development and support team member.

5 February 2007

APPROPRIATION TITLE: General Investigations, FY 2008

2. Collection and Study of Basic Data

c. Other Programs

(10) Automated Information Systems Support - Tri-Service CADD/GIS Technology Center

SCOPE: This effort provides technical support to engineers and scientists utilizing BIM, CAD, GIS and facility management technologies in the planning, design, construction, operation and maintenance of Corps projects. As there is no way of calculating the benefits which individual districts/projects receive from these technologies the Corps does not propose to charge projects and programs for the Civil Works share of its maintenance costs.

In 1992, the former Army Corps of Engineers' Computer Aided Design and Drafting (CADD) Center, located in the Army Engineer Waterways Experiment Station (WES), was expanded to an Army, Navy, Air Force (Tri-Service) center, including the addition of Geographic Information Systems (GIS) technology, by a joint agreement between the Corps, the Naval Facilities Engineering Command, and the Air Force Civil Engineer. Its purpose was to reduce duplication of effort between the three services in the management of CADD/GIS technology for facilities and environmental engineering. Since that time, the Defense Logistics Agency (DLA), the General Services Administration (GSA), USGS, FBI, Smithsonian Institution, National Capital Planning Commission, U.S. Marine Corps, U.S. Coast Guard, National Institute of Building Sciences, National Geospatial-Intelligence Agency (NGA), EPA, and NASA have joined this effort. As a result, this Center is a multi-agency vehicle to set standards, coordinate CADD/GIS systems uses, promote system integration, support centralized acquisition, and provide assistance for the installation, training, operation, and maintenance of CADD/GIS systems within the DoD facilities and environmental communities, including the Corps districts. All Corps districts that use BIM, CADD and GIS in mapping, planning, real estate, design, construction, operations, maintenance, and homeland defense and readiness benefit from the Center's efforts.

In FY07, the Center was re-chartered to focus its activities on the needs of the tri-services and OSD. This change reverses the trend towards adding other federal agencies. The focus continues on CAD and adds Building Information Modeling (BIM) to the Center's activities) and developing standard GIS data models that address the Civil Works business domains.

For FY 2008, the OMA funding portion is estimated at \$2,090,000. The Civil Works portion is requested at \$350,000 and the Naval Facilities Engineering Command portion is \$250,000. The Air Force Civil Engineer Command's \$100,000 and the U.S. Marine Corps' \$100,000 are used to support the Spatial Data Standards administered out of the Topographic Engineering Center. The \$350,000 requested for FY08 for the Civil Works portion will support over 2,000 users of BIM/CADGIS and facility management technologies for Civil Works projects.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2008-2012) Program Cost	\$3,000,000
Civil Allocation Requested for FY 2008	350,000
Balance to Complete Five-Year Program After FY 2008	2,650,000
Allocation for FY 2007*	398,000
Change in FY 2008 from FY 2007	-48,000
Average Annual Allocation for FY 2003-2007	\$392,000

(\* Assumed allocation. Final, actual allocations yet to be determined.)

APPROPRIATION TITLE: General Investigations, FY 2008

2. Collection and Study of Basic Data

c. Other Programs

10) Automated Information Systems Support - Tri-Service CADD/GIS Technology Center (continued)

JUSTIFICATION: All Corps districts use CAD and GIS computer systems for Civil Works engineering, design, mapping, planning, and facility management. Many have begun the use of BIM as an engineering, and O&M tool. All engineering drafting tables have been replaced with CAD platforms or computer mapping systems and most Corps environmental and natural resource analysis are being performed on GIS platforms. The geospatial data standard efforts of the Center were coordinated with the American National Institute of Standards to develop a National GIS Standard which was approved in November 2001 and includes civil works and homeland defense features. Standards and productivity enhancement tools developed by the Center are used for both in-house and contractor produced drawings, maps and analyses, which assure that all Corps offices have the ability to exchange their work among themselves and with others, including the private sector. The Center is actively coordinating its CAD standards 3.0. with the National Institute of Building Sciences and has created a National CAD Standard, thus reducing the redundancy with the private sector and reducing cost for both government and the private sector. In 2006, the Center began coordination and developmental support for the US National BIM Standard. The BIM standard addresses the latest building information model technology within the US building and construction industry. The Center ensures that the Corps obtains the maximum return on its investment in BIM, CAD and GIS by coordinating development efforts and distributing end products to Corps offices. The BIM, CAD and GIS systems at field offices can achieve maximum productivity when they take advantage of the economies of scale offered by sharing the development and use of common data standards, procedures, and applications. This sharing is accelerated through a concerted effort by the Center, working with various field working groups, to draw from field expertise and dissemination of this knowledge in the form of lessons learned and standards to benefit all Corps users. Comprehensive data standards supported by the Center permit government and industry users to produce equivalent designs, maps and analysis on a variety of computer systems using commercial off-the-shelf BIM, CADD and GIS software.

ACCOMPLISHMENTS IN FY 2007:

1. Release 2.5 of the A/E/C CAD Standard (both document and software tools) was released via the web. This release was distributed by several software vendors as part of their application (e.g. ProSoft). Software updates to implementation applications were incorporated in the new release. The A/E/C CAD Standards content was revised to make it compatible with the latest released version of the National CAD Standard. Requirements for Building Information Modeling Standards (BIM) were developed and incorporated in Release 2.5. A BIM Manager's Workshop was developed and conducted in October.
2. The GIS Spatial Data Standard for Facilities, Infrastructure, and Environment (SDSFIE) Release 2.52.6 was completed. The SDSFIE was transferred to the Topographic Engineering Center for further development to address ACSIM and OSD requirements.
3. The Center administered the Enterprise License Agreement (ELA) it negotiated with Bentley Systems Inc. on behalf of the US Army Corps of Engineers in late CY2005. The ELA provides access to all of Bentley's software applications and meets the Corps' Science and Engineering Technology program goal to reduce software acquisition costs.
4. The Center continued its development of a BIM expertise. A BIM Road Map and Implementation Guide was developed. A Road Map was also completed for the use of the Bentley ProjectWise software as a collaborative tool for BIM, CAD, and GIS. BIM projects for Civil Works were supported (L&D 22) to demonstrate the use of BIM in civil works projects.
5. The Center continued its deployment role for the collaborative engineering tool ProjectWise within USACE.
6. SDSFIE web site was stood up to help users implement the GIS standards.



APPROPRIATION TITLE: General Investigations, FY 2008

ACCOMPLISHMENTS IN FY 2008:

1. A Corporate dataset (originally developed in FY07) for BIM models will be enhanced to include additional Civil Works and Military objects.
2. Vendor interoperability for cost estimating, construction sequencing, O&M, specification generation will be initiated as products mature.
3. Interoperability between BIM products (vendors) will be addressed.
4. Contract Language for BIM deliverables will be updated and distributed to partnering organizations.
5. Software compliance checker for BIM will be released.
6. ProjectWise interoperability tool will be updated to address new technology in vendor applications.
7. BIM Training Classes will be open to partnering agencies.
8. SDSFIE Release 3.0 was completed
9. SDSFIE Training Materials were updated and web site for user support upgraded

2. Collections and Study of Basic Data

c. Other Programs

(11) Flood Damage Data Program

SCOPE: The Flood Damage Data Program is required to facilitate the collection and maintenance of basic flood damage data to support Corps field offices in accomplishment of flood damage reduction studies. Planning and evaluation of flood damage reduction projects requires knowledge of actual damages caused to various types of properties. The relationships between flood depth, flood duration and velocity, value and type of property, and the amount of damage are essential to making accurate and supportable estimates of the value of projects. The distributions of damages resulting from the various factors involved are needed for the risk analysis framework adopted for water resource studies. Damage data are obtained in rare instances when a damaging event occurs and funded studies are underway. However, in most instances when flooding occurs there are no current studies in the area or other funding mechanism to collect the requisite data to be used in future analysis or to report and accurately record the damages incurred and account for the effect of the factors that caused the damages. Previously no centralized flood damage data source existed which retrieved basic data for research efforts and for specific project studies. The major purpose of the program is to improve the technical quality and accuracy of flood damage data, to improve the understanding of the interrelationships of the characteristics of flooding on property damage, to improve the formulation of flood damage reduction projects, and reduce the costs of feasibility studies. Coastal damage data collection will be needed to adapt to new coastal protection policies and to respond to concerns from the Office of the Assistant Secretary of the Army (Civil Works) in the review of recent coastal protection projects. The activities of the program are to: (1) conduct actual flood damage surveys following flood events for riverine and coastal events; (2) develop, maintain, and improve the economic database for flood damage reduction projects; (3) calculate flood depth-damage functions for riverine and coastal flooding based on actual damage data; (4) develop and maintain a floodplain inventory application that would be used to apply flood damage estimation models to feasibility, reconnaissance, and continuing authority studies; and (5) provide information to communities of hazard mitigation plans and grant applications.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2008-2012) Program Costs	\$3,500,000
Allocation Requested for FY 2008	220,000
Balance to Complete Five-Year Program after FY 2008	3,280,000
Allocation for FY 2007	\$248,000
Change in FY 2008 from FY 2007	\$0
Average Annual Allocation for FY 2003-2007	\$262,800

JUSTIFICATION: The \$220,000 requested in FY 2008 for Flood Damage Data would be used to develop and maintain data collection survey forms and data collection techniques, to collect post-flood damage data, to employ the flood damage database to estimate a National model where regional or local flood characteristics can be specified to estimate flood damage relationships, to update and maintain a computer application for

applying flood damage models to floodplain inventory data, and to develop generic business flood damage relationships. Funds would be used to monitor data collection, to collect damage data for riverine and coastal flood events, and data analysis and the development of generic damage relationships, including associated flooding costs which might be appropriate to National Economic Development procedures, and to test the effectiveness of flood warning and flood proofing procedures. Funds would also be used to enhance a website to share results of the analysis.

## 2. Collections and Study of Basic Data

### c. Other Programs

#### (11) Flood Damage Data Program (continued)

#### ACCOMPLISHMENTS:

1. Flood damage surveys, using material from OMB-approved questionnaires have been developed, reviewed, and pre-tested.
2. Data collection techniques and data tabulation procedures have been developed. Data collection procedures have been documented in a primer for Corps field personnel and contractors.
3. Over 2,200 residential surveys and approximately 1,400 nonresidential surveys have been completed for properties in 19 states. A database has been created from these surveys and analysis is continuing. Several reports have been issued documenting the case studies and damage function computation.
4. Generic residential content and structure damage functions have been released for single-family homes.
5. Generic business structure damage functions and vehicle damage functions have been computed and documented.
6. A research design report has been completed for further development of risk-based damage function calculation, using additional data from building industry component costs models and data collected as part of this program.
7. A residential depth-damage function application has been released for Corps-wide use. The application will be used to determine the depth-damage relationships based on building characteristics and county-specific building costs. The model has incorporated structure and content estimation and structure and content damage for a comprehensive array of structure types, foundation types, exterior building material, quality, and period of construction. The model has been released to Corps districts for integration with the HEC-Flood Damage Analysis Package for evaluation of flood damage reduction benefits. Training for the use of the model has been conducted for Corps districts and MSC's at regional workshops.
8. A review of potential methodologies and data sources for estimating flood damage to roads has been completed. A preliminary model for estimating flood damage to roads has been released and field-tested. The model has been peer reviewed by district economists. A guide for use of the model has been developed along with a guide to applying hydrologic and road information.
9. Approximately 300 records have been collected on homes that have suffered coastal flood damage.
10. A research design report has been completed for further development of risk-based damage function modeling for coastal storm damage.

APPROPRIATION TITLE: Investigations, FY 2008

### 3. Research and Development

The Corps must pursue an aggressive R&D effort to take advantage of rapidly developing technologies and techniques that will promote significant monetary savings and greater reliability, safety, enhanced efficiency, and environmental sustainability in planning, design, construction, operations and maintenance of civil works activities.

The Civil Works R&D program is formulated to directly support the established Business Lines of the Civil Works Program including: flood and coastal storm damage reduction, inland and coastal navigation, environment (including natural resources, compliance, mitigation, restoration, and stewardship), water supply, hydropower, recreation, emergency management, and regulatory. The Civil Works R&D needs and requirements are identified based on the current Civil Works Program Strategic Plan, Corps divisions and district input, and the existing WRDA authorities. The R&D effort is a problem-solving process by which the Corps systematically examines new ideas, approaches, and techniques and develops field-ready products. The request for \$17,300,000 of General Investigations funds for the FY 2008 program would accomplish the very highest priority R&D needs. This will include \$2,000,000 for Environmental Benefits Assessment, \$1,125,000 for Navigation Economic Technologies (NETS), and \$1,000,000 for coastal storm and hurricane engineering modeling as recommended by the Chief of Engineers 12 Actions for Change, and \$ 1,590,000 for Facility Condition Indexing distributed within the Navigation and the Flood and Coastal Storm Damage Reduction research areas. Other R&D recommendations developed through the 12 Actions for Change including an initiative to develop Flood and Coastal Storm Economic Models are being addressed within the FY 2008 program.

Results of the Corps' GI R&D effort are directly incorporated into practice within the Civil Works Program through revisions or additions to Engineer Regulations, Engineer Manuals, Technical Guidance Manuals, Engineer Technical Letters, or Guide Specifications. Numerous other means of technology transfer are also used such as training courses, workshops, demonstrations, and other professional contacts. The Corps Civil Works R&D Program provides essential Product Lines with field ready end products and a high return on investment for the Corps, other Federal agencies and the Nation.

The Corps is currently developing facility condition index tools for Navigation, Flood Damage Reduction, Recreation, and Hydropower projects. Each business line is in a different state of development. Some work has been undertaken through Research and Development programs and focused performance based budgeting efforts. Recreation has developed a web-based condition indexing tool as part of its RECBEST budgeting process. Hydropower has begun to implement HydroAMP, an interagency effort focusing on various component condition index tools. Navigation has work units focused on lock and dam condition evaluations and coastal structures asset management decision tools. Flood And Coastal Storm Damage Reduction has Risk and Uncertainty and Dam Safety Risk Assessment Portfolio R&D efforts focused on developing probabilistic models for quantifying seepage and piping, reliability of gates and other operating components, and uncertainties for breaching parameters of embankment dams. We will continue to develop the tools for condition indices for all Corps assets, and expect these tools to be applied to all business lines within 2 years.

APPROPRIATION TITLE: Investigations, FY 2008

### 3. Research and Development

#### COORDINATION:

The Corps conducts Civil Works R&D through the U. S. Army Engineer Research and Development Center (ERDC) and the Institute for Water Resources (IWR). The ERDC consists of seven research laboratories:

- Coastal and Hydraulics Laboratory, Vicksburg, MS
- Cold Regions Research and Engineering Laboratory, Hanover, NH
- Construction Engineering Research Laboratory, Champaign, IL
- Environmental Laboratory, Vicksburg, MS
- Geotechnical & Structures Laboratory, Vicksburg, MS
- Information Technology Laboratory, Vicksburg, MS
- Topographic Engineering Center, Alexandria, VA.

The IWR is located in Alexandria, VA, and its Hydrologic Engineering Center (HEC) in Davis, CA. Policy guidance and executive oversight are provided by the Civil Works R&D Steering Committee comprised of Deputy Director of Civil Works, CW division chiefs, and the Director of Research and Development. The Directors of ERDC and IWR are responsible for execution of the CW R&D program.

In order to most effectively use the limited R&D resources and to avoid unnecessary duplication of research effort, the Civil Works R&D Program maintains external technical exchange and technology transfer efforts with other Federal and major water resource agencies including the TVA, Bonneville Power Administration, Western Area Power Administration, EPA, NSF, Department of Agriculture (NRCS), Park Service, NOAA, DOI (USBR, Forest Service, FWS, USGS, DHS (USCG, FEMA, US Border Patrol), DOT (FHWA, FAA, MARAD), NASA, International Boundary Water Commission, International Joint Commission, DOE (NRC, FERC), the Navy, and state and local governments.

Corps researchers also maintain contact with the research activities of universities and industry through regular membership in such organizations as the American Society of Civil Engineers, the Civil Engineering Research Foundation, the American Concrete Institute, the American Society of Testing and Materials, the International Conference on Coastal Engineering, the American Association of Port Authorities, the American Society for Photogrammetry and Remote Sensing, Society of Environmental Toxicology and Chemistry, the Coastal Society, the Offshore Technology Conference, International Society of Soil Mechanics and Foundation Engineering, U.S. Society of Dams, and International Committees on Large Dams, the International Association for Hydraulic Research, the Association of American Geographers, Western Dredging Association and the International Navigation Association. The Corps also participates extensively with the Transportation Research Board, the Water Science and Technology Board, and the National Research Council in coordinating and leveraging research activities.

APPROPRIATION TITLE: Investigations, FY 2008

3. Research and Development

SUMMARIZED FINANCIAL DATA:

Estimated Five Year (FY 2008 - FY 2012) Program Cost	\$116,100,000
Allocation Requested for FY 2008	17,300,000
Balance to Complete Five Year Program after FY 2007	98,800,000
Allocation for FY 2007 *	22,000,000
(*Assumed allocation. Final, actual allocations yet to be determined.)	
Change in FY 2008 from FY 2007	-4,700,000
Average Annual Allocation for FY 2002-FY 2007	22,000,000

The proposed FY 2008 R&D Program is structured to directly support the Civil Works Business Lines, their mission requirements and established performance objectives at project, watershed or river basin scales. The technical foundation of the R&D program includes:

- a. Navigation (including Hydropower)
- b. Flood and Coastal Storm Damage Reduction (including Emergency Management, Water Supply, and Recreation)
- c. Environmental (including Regulatory)
- d. System Wide Water Resources

Navigation (including Hydropower)

The Corps provides inland and coastal navigation critical to the national economy and defense. Navigation research delivers environmentally sustainable products that improve efficiency, reliability, and capacity of this complex, aging transportation/power network. The research framework integrates infrastructure engineering, power physics, economics, innovative construction, coastal and riverine hydrodynamics and processes, monitoring and sensing technologies, operations research, environmental solutions, and emerging technologies to create effective solutions in concert with the multiple demands, requirements, and constraints of real world commodity transport and power production problems. Research efforts target navigation channels, locks, jetties, breakwaters, harbors, dams and power plants to optimize among life-cycle and reliability trade-offs, assure defensible economic assessment, and provide better investment decision tools for predicting performance and deterioration with time, and for scheduling and prioritizing maintenance and repairs balanced with the consequences of delays. Essential to this effort is the development of tools for determining the condition of infrastructure components to make risk-based prioritizations for funding. R&D efforts for development of condition index products include: Developing a standardized method and associated computer program for life-cycle engineering analysis of coastal rubble mound breakwaters, Improved Condition Indexing for Coastal Structures, Monitoring of Concrete Navigation Structures, Inspection and Condition Assessment of Steel Hydraulic Structures, and Condition Monitoring and Predictive Maintenance for Infrastructure. The combined investments for these risk-based condition index work units is \$1.1 million, of which \$300,000 is funded under the Coastal Inlets Research Program (Operations and Maintenance Appropriation).

APPROPRIATION TITLE: Investigations, FY 2008

### 3. Research and Development

#### Flood and Coastal Storm Damage Reduction (including Emergency Management, Water Supply, and Recreation)

Corps projects across the Nation prevent flooding and storm damage. In the daily and seasonal operation of hundreds of Corps projects, national requirements for water supply and opportunities for recreation and environmental stewardship are also balanced. The Nation expects the Corps to guarantee that its existing projects maximize efficiency and effectiveness, and that new projects incorporate the most advanced knowledge and capabilities in planning, design, construction, operation, and maintenance. Through R&D, the Corps develops technology that optimizes daily operations of water resources projects to meet multiple objectives, including water supply and environmental stewardship. Through R&D, the Corps creates new solutions to challenging engineering problems in building, maintaining, upgrading, and operating the Nation's water resources infrastructure such as dams, locks, spillways, and channels. Through R&D, the Corps provides guidance and tools to understand the natural setting of water resource projects, to incorporate environmental & economic objectives, to assess alternative solutions, and to make optimal decisions. The technological requirements of emergency management are addressed to make possible the most rigorous planning and preparedness and the most efficient and effective response and recovery. Improved Condition indexing of Flood and Coastal Storm Damage Reduction facilities includes technologies for risk-based evaluation of structural components such as dams, gates, levees, dunes, dikes, and walls. This work will be conducted in collaboration with the National Dam Safety - Portfolio Risk Assessment and the National Flood Project Inventory Programs. Advancements in understanding the role of geotechnical properties, hydrodynamic loading, material fatigue, structure aging, and life-cycle O&M in contributing to dam and flood management safety, performance, and reliability will be developed. These will be coupled with improved methodologies for inspection and condition evaluation as well as a need to develop better methods for determining the reliability of flood management systems.

#### Environmental (including Regulatory)

The Corps has ecosystem restoration and environmental stewardship & management responsibilities on more than 11 million acres of land and water resources. Due to the enormous scope of this mission, it is imperative that Corps field personnel be able to apply the latest technologies for ecosystem restoration and natural resource inventory. The scale of these activities ranges from large projects such as the Everglades down to much smaller, local wetlands/stream restoration projects. The broad scope of these environmental activities (as well as the frequent changes to the legislative mandates that govern them) demands sound research and development to address these critical needs. The goal of this R&D is to provide cost-effective/innovative technologies for project planning, design, engineering/construction and operation/maintenance. Product lines include Ecosystem Evaluation, Restoration, Environmental Stewardship and Management. A major emphasis is on developing technology and approaches for Environmental Benefit Assessment. Products are concise, how-to guidance documents that provide rapid/low-cost technologies and methods for high priority field needs. This technology is critical to the success of the Corps' Continuing Authorities Program (CAP) as well as larger GI-funded projects.

APPROPRIATION TITLE: Investigations, FY 2008

### 3. Research and Development

#### System Wide Water Resources

The goal of System-Wide Water Resources R&D is to provide the Corps of Engineers and its partners the capabilities to balance human development activities with the natural system in a sustainable manner through regional management and restoration of the Nation's water resources over broad temporal and spatial scales. The capabilities provided include science-based water resource management methodologies, implementation guidance, computational frameworks and technologies, and decision support. These capabilities are built from sound scientific principles reflecting an improved understanding of inter-relationships among key system attributes such as hydrology, hydraulic processes, geomorphology, chemistry, ecology, and socioeconomic. Capabilities will be served via a seamless, integrated architecture allowing projects to be considered at multiple scales during project planning, design, construction, operation, and maintenance. Current R&D emphasis in this area is on urban flood damage reduction and stream restoration technologies, regional sediment management, aquatic ecosystem management, assessment and restoration technologies, and regional and corporate frameworks for data collection, management and analysis. Each of these efforts is being pursued through extensive partnering and collaboration with federal and state resource management agencies, academia, and the private sector.



APPROPRIATION TITLE: Investigations, FY 2008

3. Research and Development

PROJECTED CIVIL WORKS R&D FUNDING ALLOCATIONS (FY 07-08))

<u>BY RESEARCH AREA</u>	<u>FY 2007 ALLOCATION*</u>	<u>FY 2008 BUDGET</u>
a. Navigation (including Hydropower)	\$ 6,700,000	\$ 4,600,000
b. Flood and Coastal Storm Damage Reduction (including Emergency Management, Water Supply, and Recreation)	\$ 4,500,000	\$ 3,300,000
c. Environmental (including Regulatory)	\$ 1,700,000	\$ 2,700,000
d. System Wide Water Resources	\$ 9,100,000	\$ 6,700,000
	<u>\$22,000,000</u>	<u>\$17,300,000</u>

\*(Assumed Allocation. Final, actual allocations yet to be determined.)

<u>BY CW BUSINESS LINE</u>	<u>FY 2007 ALLOCATION*</u>	<u>FY 2008 BUDGET</u>
a. Navigation	\$ 8,300,000	\$ 7,100,000
b. Flood & Coastal Storm Damage Reduction	\$ 8,000,000	\$ 5,200,000
c. Environmental	\$ 5,700,000	\$5,000,000
	<u>\$22,000,000</u>	<u>\$17,300,000</u>

\*(Assumed Allocation. Final, actual allocations yet to be determined.)

APPROPRIATION TITLE: Investigations, FY 2008

3. Research and Development

a. Commercial Navigation

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2007-2011) Program Cost	\$31,400,000
Allocation Requested for FY 2008	4,600,000
Balance to Complete After FY 2008	26,800,000
Allocation for FY 2007	6,700,000
Change in FY 2008 from FY 2007	-2,100,000

JUSTIFICATION:

The Corps' commercial navigation mission facilitates commercial navigation through investments in waterborne transportation systems (channels, harbors, and waterways) that are cost-effective and environmentally sustainable. The U.S. Marine Transportation System (MTS) consists of over 300 ports, 1,000 harbor channels, and 25,000 miles of navigation channels. The MTS is already operating at near-full capacity in many areas and is being challenged by new vessel designs and traffic loads that exceed its channel, harbor, and lock capacities. Over 50 percent of the Corps' 191 lock sites (240+ locks) have been in service for more than 50 years. Research and development (R&D) can help reduce the costs associated with delays due to closures for both scheduled and unscheduled repairs, as well as reduce the risk of catastrophic failure of a major infrastructure component.

This R&D area provides advanced and innovative tools and technology for the Corps to improve navigation functional performance, reduce unit costs, and improve safety. The Corps is expected to apply robust, reliable, and comprehensive capabilities to assess the economics and effects of alternative plans for projects and to select the most balanced and sustainable solutions. R&D delivers efficient and effective capabilities to plan, design, construct, operate, maintain, and upgrade transportation projects in inland and coastal locations and in all climates, from warm to ice-affected. Capabilities to improve system reliability are needed in an asset management framework to extend project life and reduce life cycle costs. Engineering, economics, and environmental aspects are integrated in the development of processes and design models, economic models and decision support software, infrastructure condition assessment techniques, and economic and risk analysis frameworks, infrastructure and design guidance, and innovative monitoring, operation and maintenance technologies.

Navigation area economic R&D provides the framework and analytical tools that are key to quantifying problems, evaluating alternative competing solutions, and making informed investment decisions. Risk analysis provides a framework for organizing and quantifying underlying uncertainties in and management of existing facilities. Navigation Economic Technologies (NETS) provides enhanced and standardized evaluation tools and methods for shallow and deep draft navigation project life-cycle analyses. Peer reviewed procedures will be developed to improve traffic forecasts, economic benefits, and uncertainties in major improvement projects.

APPROPRIATION TITLE: Investigations, FY 2008

3. Research and Development

a. Commercial Navigation (continued)

FY 2008 ACTIVITY:

- More accurately assess environmental impacts of navigation on inland waterways by developing a model of vessel generated currents and sedimentation needed to estimate channel erosion and off-channel deposition.
- Demonstrate the potential for increasing inland navigation throughput by reducing premature failures of mechanical and electrical equipment at navigation locks through analysis of condition monitoring data.
- Improve planning for maintenance and emergency response for the concrete portion of navigation locks and dams by providing structural engineers with a versatile fully automated data management system that will monitor, analyze, and report real-time structural conditions.
- Decrease costs by reducing installation time of float-in concrete structures by developing models of fluid/structure interactions.
- Lower lock approach wall design and construction costs by expanding the newly developed (FY07) structural design methodology with additional types of flexible reinforced concrete walls to accommodate different foundation soil conditions.
- Minimize structural failures and optimize use of maintenance resources by providing guidance on concrete repair methods and initial guidance for concrete monitoring.
- Extend lock life with minimal impacts on lock throughput by reducing failure of concrete patches through development of specifications for materials for rapid repair of concrete.
- Improved methods for justifying navigation improvements by providing the ability to address issues of multimodal competition with the finalization of the Regional Routing Model.
- Provide the Corps with the ability to conduct system wide constrained optimization over time while considering reliability by completion of the Navigation System Simulation Model.
- Improve regional planning for lock improvements by modifying the Ohio River Navigation Investment Model to respond to National Academy of Science concerns by incorporation of shipper response into the ORNIM suite.
- Improve economic justification procedures for inland navigation projects by providing the Corps with the ability to perform spatial equilibrium commodity forecasting by generalizing the techniques demonstrated in the Global Grain Model.

FY 2007 ACCOMPLISHMENTS:

- Reduced potential for loss of life and loss of navigation at navigation locks during high flow conditions by demonstrating wireless display of real time current measurements at lock approaches to towboat captains.
- Increased safety and reduced dredging costs through improved ship simulations for optimum design of wider channels to accommodate larger vessels.
- Reduced likelihood of navigation dam failures by development of risk-based methodology to assess and predict scour protection performance.
- Evaluated concrete repair technology for cost-effective application to navigation structures with reduced impacts on navigation throughput.
- Released beta version of improved coastal structure condition index tool, to assist in risk-based decision making for major rehabilitations.

APPROPRIATION TITLE: Investigations, FY 2008

3. Research and Development

a. Commercial Navigation (continued)

- Improved barge impact predictions for flexible lock walls, lowering costs of new locks.
- Unified coastal structures condition assessment through release of a beta version of a revised condition index system that uses GPS and digital technology for more quantitative measurements.
- Facilitated use of consistent methodologies across Corps' district for evaluating deep draft waterway improvements by fielding the deep draft version of HarborSym, including training through the Deep Draft Center of Expertise.
- Improved capability to model intermodal transportation through time, understanding mode, source and destination switching resulting from changed transportation system attributes, through release of a beta version of a Regional Routing Model.
- Improved ability to evaluate non-structural as well as structural inland waterway improvements by fielding the beta version of Navigation System Simulation Model.
- More accurately predicted shipper response to changes in waterway attributes by users of the Ohio and Mississippi river transportation network through completion of shipper response studies on the Upper Mississippi and Ohio Rivers.

b. Flood and Coastal Storm Damage Reduction

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2008-2012) Program Cost	\$20,000,000
Allocation Requested for FY 2008	3,300,000
Balance to Complete after 2008	16,700,000
Allocation for FY 2007*	4,500,000
Change in FY 2008 from FY 2007	-1,200,000

(\*Assumed allocation. Final, actual allocations yet to be determined.)

JUSTIFICATION:

The Corps of Engineers is responsible for more than 600 dams, operates over 400 major lakes and reservoirs, maintains 8,500 miles of levees, and has over 100 coastal storm-damage reduction and related projects associated with its Flood and Coastal Storm Damage Reduction mission. Flooding that occurs in the United States costs about \$4 billion annually. Without the Nation's investment in flood and coastal storm damage reduction infrastructure through the Corps, that cost would be many times higher. Over the years, Corps flood protection projects have prevented an estimated \$706 billion in damages, most of that within the

APPROPRIATION TITLE: Investigations, FY 2008

3. Research and Development

b. Flood and Coastal Storm Damage Reduction (continued)

last 25 years. The cumulative cost of building and maintaining these projects to date is \$119 billion; therefore, every dollar spent on flood protection has prevented more than six dollars in damage. Despite this protection, annual damages in flood plains continue to rise due to changes in land use and urban development. In addition, the 2000 census showed that more than 50% of the US population lives within 50 miles of a coast and is therefore vulnerable to dangerous coastal storms and costly flooding. Consequently, over the past several years, Federal shore protection expenditures increased to more than \$100 million per year to protect the public and related economic investments.

The Corps manages existing water resources projects around the country to maintain a flood-protection infrastructure for the public's welfare. Simultaneously, the Corps balances requirements for hydropower, water supply, environmental stewardship, and recreation. As enabling technologies are developed, the Corps must upgrade and improve water resource projects, use the most advanced capability to assess the risk of alternative operational scenarios, and apply robust, reliable, and comprehensive capabilities to assess the economic and environmental effects of alternative plans for projects and to select the most balanced and sustainable solutions. R&D delivers efficient and effective capabilities to plan, design, construct, operate, maintain, and improve water resource projects in all climates and settings, from warm to ice-affected, and from inland to coastal.

Capabilities that prevent loss of life, minimize property damage, and reduce the life-cycle costs of projects are critical. These capabilities include advanced processes and design models, economic models and decision support software, infrastructure condition and risk assessment tools, infrastructure design guidance, innovative operation and maintenance technologies, flood-alert instrumentation and expedient emergency response capabilities, and the capability to take advantage of new real-time data sources (e.g. precipitation radar) to accurately forecast real-time flow and stages. Other research needs specific to Flood and Coastal Storm Damage reduction, identified through the Chief of Engineers' 12 Actions for Change will be incorporated into the R&D program.

This R&D component provides advancements in hydrologic and hydraulic simulation, water resources project optimization, tools for effective alternative analyses for solutions, infrastructure safety, structural design and performance, and assessment of the risk and uncertainty associated with project designs. This R&D component also improves the technology available to emergency managers for emergency planning, preparedness, response, recovery, and assessment.

FY 2008 ACTIVITY:

- Provide ability to evaluate the reliability of dams through development of risk-based tools for evaluation of failure of concrete and embankment dams, spillway gate failure, spillway erosion, and model for estimating probability of maximum flood.
- Optimize evaluation of complex inland and coastal flood damage reduction measures by improvement of standardized risk-based economic models.
- Improve efficiency of watershed, floodplain and dam break studies by integrating advanced geospatial methods for mapping hydrologic, hydraulic and sediment transport processes and improving hydrologic frequency analysis.
- Improve formulation and operation of flood control projects in cold regions by providing the capability to better assess impacts of river ice.
- Reduce cost and improve efficiency for dam, levee, grade control & streambank protection projects by providing guidance for various traditional and non-traditional structures to produce improved designs that are cost effective and environmentally sustainable.

APPROPRIATION TITLE: Investigations, FY 2008

3. Research and Development

b. Flood and Coastal Storm Damage Reduction (continued)

- Reduce cost and level of effort for evaluation of river structures alternatives by providing a cost effective model for assessing project performance at level sufficient to determine ecological impacts.
- Reduce potential for life loss and damage element loss by enhancing near real time system-scale monitoring, evaluation and data management capability for flood control project infrastructure.
- Reduce uncertainty associated with water allocation through development of improved computational and analytical methods for water supply project operation, real-time performance evaluation and probabilistic forecasting.
- Improve formulation procedures by providing the capability to determine the level of services provided by ecosystem restoration alternatives and non-structural flood proofing measures.
- Improve economic evaluation of flood damage reduction projects by providing road damage model for inland flooding.

FY 2007 ACCOMPLISHMENTS:

- Extended dam safety risk assessment technologies and determination of project performance probabilities.
- Improved Corps emergency management capability by integrating existing technology components into a geophysical, remote sensing, and geospatial applications system to support rapid emergency response assessments of inland and coastal flood control structures.
- Improved flood damage reduction project formulation process by providing planning guidance for consideration of benefits associated with regional economic development and other social effects, advanced decision support tools for a collaborative planning, and providing web-accessible catalog of management measures.
- Enhanced Corps' capability to implement risk-based design and formulation of shore protection projects by release of operational guidelines and beta version of model to estimate cost and benefits and associated risk and uncertainty of alternatives.
- Improved reliability of water management project design and operations by providing improved outlet structure computational methods, soil moisture parameter adjustment capabilities for real time forecasting, and ensemble forecasts for complex water allocation systems.
- Developed capability for analyzing complex river stabilization features, mapping of sediment and temperature outputs from hydraulic models, coincident frequency analysis, and GIS extension with existing models for in river hydraulic and flood damage reduction studies.
- Provided software framework that integrated existing hydraulic and hydrologic models to increase efficiency of watershed-scale project planning analysis.

APPROPRIATION TITLE: Investigations, FY 2008

3. Research and Development

c. Environmental

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 2008-2012) Program Cost	\$9,700,000
Allocation Requested for FY 2008	2,700,000
Balance to Complete after FY 2008	7,000,000
Allocation for FY 2007*	1,700,000
Change in FY 2008 from FY 2007	1,000,000

(\*Assumed allocation. Final, actual allocations yet to be determined.)

JUSTIFICATION:

Since the Water Resources Development Act of 1986, there have been dramatic increases in authorized ecosystem restoration studies, projects and programs. At the same time, the Corps has continued to operate and maintain 25,000 miles of inland and coastal navigation waterways, 5,500,000 surface acres of reservoirs, 237 navigation locks, over 1300 ports and harbors, 75 hydropower projects, 879 flood control projects, and thousands of acres of adjacent lands as part of its water resource mission. Wide-ranging environmental compliance, management, and restoration efforts have become crucial parts of the Corps water resource management mission. The Corps must consider environmental issues related to the operation and maintenance of its existing projects as well as the restoration of degraded ecosystems. In addition, the Corps must proactively address potential negative environmental impacts resulting from proposed activities. The Environmental Technologies research area addresses the Corps' highest priority environmental issues through the development and application of state-of-science, cost-effective, time-saving technologies including: 1) ecological and engineering guidelines for dam removal, 2) engineering & biological technologies for the quantitative evaluation of aquatic resources, 3) guidance for improved restoration of rivers, streams and riparian zones, 4) standard design criteria for wetlands and special aquatic site restoration projects, and 5) standardized natural resource inventory technologies for use on all Corps projects. The user-oriented products will provide scientifically defensible / field validated solutions to the Corps' highest priority environmental problems. They will also reduce unnecessary regulatory burdens provide environmental benefits, and maintain a high return on taxpayer investment.

Quantifying the environmental benefits of proposed Corps ecosystem restoration projects is essential for decision makers to be able to select those projects that will yield the highest social, economic and environmental services. The scientific community has criticized current state-of-the-science assessment approaches regarding the underlying model assumptions, oversimplified relations, excessive data requirements, complexities in integrating impacts, and the lack of meaningful metrics to permit biologically effective decisions. Moreover, current assessments are static and frequently insensitive to important system dynamics, not applicable across multiple scales, and incapable of predicting future conditions. Corps decision makers need robust assessment tools that incorporate modern ecosystem principles, are easy to apply, offer significant user flexibility to meet individual project requirements, and that provide output quantifiable relevant to the Corps' Performance Measures. These environmental benefits analysis tools will be provided in brief user-focused technical guidance documents, web-based decision support systems, classroom & CD/internet based training, and product technical support as required.

APPROPRIATION TITLE: Investigations, FY 2008

3. Research and Development

c. Environmental (continued)

FY 2008 ACTIVITY:

- Provide a list of validated models that accurately predict biological response to Corps' aquatic ecosystem restoration projects.
- Provide technical guidelines for the restoration of coastal wetlands and special aquatic sites.
- Develop guidance that links physical process models with environmental analysis of ecosystem restoration projects.
- Develop a new environmental benefits metric for ecosystem management projects.
- Provide a PC-based GIS tool for integrating and displaying results from environmental benefits analysis models.
- Provide techniques for conducting Level One & Level Two inventories of special status species on Corps operational projects.
- Provide Version 2.0 of the Ecosystem Management & Restoration Information System – a hybrid Internet-CD resource for Corps' practitioners.
- Provide technical guidance for prairie management and restoration on Corps lands.

FY 2007 ACCOMPLISHMENTS:

- Developed guidance on validation of post-project benefits of restoration projects in small watersheds.
- Provided guidelines for planning and execution of dam removals.
- Provided techniques for conducting multi-functional riparian and stream restoration projects.
- Provided decision support system to rank potential wetland restoration projects based on functional replacement.
- Developed guidance on advantages and limitations of ecosystem assessment models and methods.
- Evaluated innovative new technology for large-scale submerged aquatic vegetation plantings.

d. System-Wide Water Resources.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (or 7) (FY 2007-2012) Program Cost	\$55,000,000
Allocation Requested for FY 2008	6,700,000
Balance to Complete after FY 2008	48,300,000
Allocation for FY 2007*	9,100,000
Change in FY 2008 from FY 2007	-2,400,000

(\*Assumed allocation. Final, actual allocations yet to be determined.)



APPROPRIATION TITLE: Investigations, FY 2008

3. Research and Development

d. System-Wide Water Resources (continued)

JUSTIFICATION:

In view of the importance of sustainability in water resources management, the Corps is adopting a watershed or basin-wide approach, which adds a system-wide perspective to project planning, design, operations and maintenance activities. This spatially expanded perspective is necessary because water resources projects and resultant changes in land/water use have consequences well beyond project footprints. Key to sustainability is the balance among environmental, economic and societal concerns. The System-Wide Water Resources component of the Civil Works GI R&D Program is designed to provide the Corps with the technical capabilities required to meet its mission responsibilities at project, watershed, and large basin scales, while effectively engaging stakeholders and decision makers with potentially competing interests (e.g., environmental vs. economic).

Wide-ranging proactive environmental compliance, management, and restoration efforts are an integral part of the Corps responsibilities in water resources management. Recent U.S. figures have estimated \$16 billion per year in damages caused by point- and non-point-source pollution, with up to 1 billion tons per year of eroded soils and industrial and agricultural contaminants being deposited in the Nation's waterways. These impacts are severely affecting multiple project uses, impeding navigation, impeding ecosystem restoration efforts, and negatively affecting human and ecological health. An integral part of the Corps' mission is to ensure that project planning, construction, operation, and maintenance activities solve critical environmental problems, while ensuring economic viability and societal acceptance. The System-Wide Water Resources component is providing, at a regional scale, scientifically proven and demonstrated solutions to the Corps' highest priority environmental problems, reducing unnecessary regulatory burdens, and providing environmental benefits, while maintaining a very high return on taxpayer investment. The broadened focus of this research, which addresses systemic water resource management issues, will enable the Corps to more effectively meet legal requirements such as the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA).

Maintaining navigable waterways and flood channels in the face of continuing sediment deposition consumes a substantial portion of the Corps' budget. More effective sediment management on a regional scale can reduce dredging costs and potentially adverse environmental impacts by diverting sediment from channels and into deposition zones. Sediment and associated nutrients/contaminants also have important effects on the environment. Thus, a better understanding of sediment processes in an environmental context is critical in relation to habitat and water quality concerns regionally. Also, attention to sediment processes in the Corps O&M program will improve cost effectiveness in planning and designing navigation projects, estimating channel shoaling, locating optimum dredged-material placement, and assessing the impact of navigation projects and structures on adjacent waters, shorelines, and downstream areas.

Decision makers both within the Corps and among stakeholder organizations require accurate and reliable data for the effective planning, design, construction, operation, maintenance, and rehabilitation of projects. Annual expenditures for collection, analysis, and management of geospatial data alone are estimated to average almost \$200 million. This component of the overall Program will provide significant savings, owing to the development of more effective and efficient data collection, management, and exploitation technologies. To further reduce costs, a new framework approach is being developed to integrate and manage data and decision support software in a consistent, corporate manner. The developed information framework will integrate many of the data, technologies, models, and decision support tools across the Corps' business activities for the many different communities of practice that support regional water resource management activities. The framework will include all aspects of informatic development, including but not limited to automated information systems, information security, enterprise GIS, metadata standards, model/decision support tool interoperability, data visualization, and knowledge management.

APPROPRIATION TITLE: Investigations, FY 2008

### 3. Research and Development

#### d. System-Wide Water Resources (continued)

As new and innovative technologies and methodologies are developed in this component, it will be critical to transfer information concerning these innovations to the Corps, other Federal, state, and local agencies, and to the public as quickly and efficiently as possible so that they can be effectively applied. It will be equally important to validate the applicability of the innovative technologies through demonstrations, which are a key element of this component. Examples include innovative use of remote sensing for environmental monitoring and satellite linked GIS/GPS laptops to assist with onsite environmental analyses that can be connected quickly on a system scale.

The System-Wide Water Resources component of the Program will continue to develop and deliver technology to support decisions that are scientifically, technically, and economically sound in formulating and executing watershed projects. The products of this component serve a wide variety of needs and interests, ranging from decision makers to technical specialists to stakeholders and partners. New technologies are being delivered to users via the Internet in a consistent, yet personalized, web-based format, together with tutorials explaining their characteristics and use. Analytical tools provided by this component serve a range of needs, ranging from screening level assessment capabilities to detailed numerical models. Many tools will be interconnected with standard linkages. The scientific rigor of these tools continues to increase with gains in scientific knowledge, as part of the continued maintenance and upgrading of capabilities. . Research needs specific to an integrated and comprehensive systems approach as identified through the Chief of Engineers' 12 Actions for Change will be incorporated into the R&D program. This includes work on Flood and Coastal Storm Economic Models and also on improved Coastal Storm risk/engineering Models.

#### FY 2008 ACTIVITIES

- Develop Flood and Coastal Storm Economic Models
- Develop MORPHOS (a coastal storm and hurricane engineering model.)
- Demonstrate tiered approach to ecological assessments in complex river and coastal systems for system-wide assessments with various levels of available information.
- Demonstrate prototype decision support system for efficacy analysis of ecosystem restoration project alternatives in complex river systems (e.g. the Upper MS River Basin).
- Demonstrate large-scale data acquisition tools for complex watershed studies (e.g. Western States, arid region).
- Continue refinement of 1, 2, and 3 D material transport models to predict biological response in rivers, reservoirs, and estuaries.
- Demonstrate data fusion technologies (combined sensors) for large scale ecological assessments for riverine, estuarine, and coastal areas and impacts related to water resource management activities.
- Continue refinement of coupled multi-dimensional hydrodynamic models and ecological response models for more accurate forecasting of near-term and future conditions as a result of water resource management and ecosystem restoration alternatives.
- Develop applications of multi-dimensional hydrodynamic models that quantify nutrient and sediment transport at multiple spatial scales in watersheds.
- Demonstrate innovative application of tracer technologies for large-scale nutrient tracking, fate, and subsequent biological response in river and estuarine systems.
- Demonstrate standardized data acquisition and management techniques for more efficient watershed and aquatic systems assessments (e.g. the Everglades and coastal Louisiana).

APPROPRIATION TITLE: Investigations, FY 2008

- Develop applications of sustainability indicators for assessing biological response to adaptive management techniques for restoration of aquatic systems.
- Demonstrate coupled multi-dimensional surface water and groundwater modeling in complex watershed (e.g. karst topography of the Edwards aquifer in Texas).

FY 2007 ACCOMPLISHMENTS:

- Advanced the computational structure of both one-dimensional and multi-dimensional hydrology and hydraulics models to accommodate sources and sinks of water for more accurate water budget estimates and applied to large and complex watershed studies and reduced run times by as much as 30% for complex hydrodynamic modeling.
- Improved parameter estimation tools for reducing uncertainty in hydrology and hydraulics models for improved forecasting.
- Improved 3-D ground water and surface water interactions for wetting and drying for more accurate representation of physical and biological response to water level fluctuations in riverine, reservoir, and estuarine environments.
- Beta tested 3-D hydrodynamic modeling of salinity using an adaptive hydraulics grid for more accurate predictions of water movement and material transport in estuarine and coastal environments.
- Developed improved sediment transport kinetics for 1, 2, and 3 dimensional hydraulic models for more accurate estimates of sediment movement in rivers and estuaries.
- Refined linkages among multi-dimensional hydrodynamic models for systems approach to sediment and nutrient transport and fate assessments.
- Refined linkages among multi-dimensional hydrodynamic models and selected ecological models for habitat and operational assessments.
- Advanced ecological model applications for fish passage, trophic evaluations, and restoration alternative analysis using linked hydrodynamic, agent-based, and trophic response models.
- Developed innovative approaches (e.g., combined hyperspectral, thermal, and visual) remote sensing technologies for ecosystem assessment and monitoring and applied to evaluation of ecosystem impacts associated with hurricanes.
- Developed innovative spatial monitoring/assessment technologies using isotopes and geochemical markers for sediment and nutrient fate and effects applications and applied to assessment of impacts of freshwater diversions on biological communities.
- Developed alpha application of assessment and forecasting technologies for decision making in watershed management, river restoration activities, and implementation of coastal restoration projects.
- Developed and applied data management retrieval and standard methods for large scale assessments associated with hurricane impacts and Everglades restoration activities.
- Demonstrated 3-D hydraulic modeling for surface and ground water interactions for complex systems such as South Florida (Everglades).
- Demonstrated 2-D hydrologic modeling with nutrient and sediment transport capabilities for complex watershed with surface and subsurface drainages typical of the upper Mid-West (e.g., Minnesota River Basin).
- Demonstrated coupled biological habitat and hydrologic models for assessment of water resource management activities on flora and fauna in rivers, reservoir, and estuarine systems.

# CONSTRUCTION

APPROPRIATION TITLE: Construction, FY 2008

**Aquatic Plant Control (APC) Program**

Allocation FY 2007

\$3,000,000

Tentative Allocation FY 2008

\$3,000,000

GENERAL: The Aquatic Plant control research is the nation's only Federally authorized research program for technology that is necessary to manage non-indigenous aquatic plant species. The objective of the research is to develop cost effective, environmentally compatible aquatic plant control technology, including biological, chemical, and integrated control methods. Research involving management strategies and applications and ecological factors are also being conducted. The control technology, management strategies and ecological understanding resulting from APC research forms the national base in the APC area, and is applied not only to control aquatic plant infestations in public waters nationwide, but is also essential to cost effective, environmentally compatible, aquatic plant control for the operation and maintenance of Corps projects. Nearly 3.0 million acres nationwide are now infested with problem aquatic plants. The Corps manages over 5.6 million surface acres of water at its reservoir projects alone, with significant additional acreage as part of navigation projects. Eurasian watermilfoil, hydrilla, alligatorweed, and other exotic species continue to expand from local infestations, many of which are interfering with navigation, flood control, hydropower production water quality and aquatic habitat. New colonies of objectionable aquatic plants continue to be found, such as hydrilla in the southeast and Eurasian watermilfoil in the Midwest. Direct applications of technologies developed by research under the Aquatic Plant Control Program have resulted in the reduction of waterhyacinth in the Gulf Coast States and California of over 3 million acres. In addition, technology developed by the APC research program has resulted in a nationwide reduction of alligatorweed. The Aquatic Plant Control Program is authorized by Section 104 of the River and Harbor Act of 1958, (P.L. 85-500), as amended by Section 104 of the River and Harbor Act of 1962, (P.L. 87-874), Section 302 of the River and Harbor Act of 1965 (P.L. 89-298), and Sections 103, 105, and 941 of the Water Resources Development Act of 1986 (P.L. 99-662), Section 225 of the Water Resource Development Act of 1996 and Section 205 of the Water Resource Development Act of 1999 (P.L. 106-53). The APC program has an annual expenditure ceiling of \$15,000,000.

BUDGET REQUEST: The \$3,000,000 requested for Fiscal Year 2008 will be used for continued research efforts for aquatic plant control technologies to support the operation and maintenance of Corps projects. Efforts will focus on control methods for submersed aquatic plants (i.e. Eurasian watermilfoil, hydrilla, and giant salvinia), with emphasis on biological control agents, chemicals, integrated control methods, management strategies and ecological factors that impact non-indigenous aquatic plant species. Research efforts are fully coordinated with other Federal, state, and local agencies to prevent duplication of effort and to ensure that research under this program is consistent with, and complementary to, the research efforts of others. The cost of research dealing with problems/outputs of regional or nationwide importance is 100 percent Federal.

## 1. Construction, General

### 12 Actions for Change to Improve Construction

Total Estimated Federal Cost	Allocation Prior to FY 2007	Allocation FY 2007	Tentative Allocation FY 2008	Additional to Complete After FY 2008
72,700,000	250,000	TBD	4,600,000	67,850,000

#### SCOPE:

USACE has embarked on an ambitious program for quickly incorporating the lessons learned from Hurricane Katrina into "Twelve Actions for Change". The 12 Actions are interrelated and interdependent. Specifically, through the Construction General funding of the 12 Actions, USACE will improve its ability to implement a systems approach to risk-based construction and major rehabilitation by communicating the residual risk associated with levees both within and outside the Corps; providing methods to support levee certification in collaboration with FEMA and major stakeholders; developing and implementing improvements to professionalism and accountability in organizational decision-making that will ensure effective system performance, to include regionalization of technical specialty areas; balancing competing interests to hold the public safety paramount in organizational decision-making; developing new methods and procedures for clear and candid communications to allow the public to make informed decisions on risk; enhancing our management of technical expertise and professionalism to rebuild public confidence in our ability to provide safe, reliable water resources systems fully integrating engineering and ecosystem restoration; integrate and infuse updated technologies for rapid characterization of levee, dike, dam, and floodwall stability under a variety of loadings, for rapid, cost-effective, and sustainable protection of levees and dikes from protected side erosion by waves and overtopping, and for sustainable emergency repair protocols and techniques for flood damage reduction infrastructure for broad range of structure classes and situations; and updating policy and guidance for design, construction, and major rehabilitation of USACE systems. These results represent accomplishments in Actions 2, 3, 8, 9, 10, 11 and 12, and are strongly linked to successful execution of Actions 1, 4, 5, and 6.

FY 2008 funding builds upon work accomplished using 2006 emergency supplemental appropriations for the Interagency Performance Evaluation Task Force, Hurricane Protection Decision Chronology, and 2007 funding to respond to critical needs identified by these groups and by the National Academy of Science, the American Society of Civil Engineers' External Review Panel, and others in the wake of Hurricane Katrina. The Corps will incorporate the new methods, processes, and technologies throughout the life cycle of USACE systems, for all business lines.

#### JUSTIFICATION:

Using the Program Assessment Rating Tool, an assessment of the USACE Flood and Storm Damage Reduction Program determined that a need exists to evaluate how completed flood and coastal storm damage reduction projects help reduce the Nation's overall flood damages; provide greater coordination between USACE, FEMA, and other federal, state, and local agencies that set floodplain and coastal zone management policies; and improving risk communication and public involvement in risk reduction strategies. The 12 Actions for Change will heighten responsible and competent public service professionalism with an emphasis on life safety to integrate teams and organizations to operate together; implementing systematic accountability; developing certification requirements for technical professionals and products; ensuring professional integrity and accountability in organizational decision making; and more effectively involving other Federal agencies and stakeholders in the process of managing flood and coastal storm risks.

#### FY 2007 Accomplishments:

FY 2007 funding enabled USACE to update planning and engineering guidance to incorporate safety and resilient safeguard measures that will preclude rapid formation of failure mechanisms in local protection systems; begin conducting workshops to expedite updating engineering and planning guidance (obtaining rapid

feedback on critical issues and transferring changes into practice); begin improving professionalism and accountability in decision making by developing certification requirements for critical engineering services and products, strengthening performance evaluations, establishing a Quality Manager / Principal Engineer position who will ensure engineering integrity with public safety as the highest priority, and planning for periodic organizational reviews for all offices; begin developing new messages and methods for communicating the significance of residual risks to the public and conducting pilot tests; begin developing new ways to involve the public in evaluating alternatives, making decisions, and preparing for flood emergencies; begin improving the understanding and capability of the engineering workforce to reduce residual risks of proposed alternatives, to design effective modifications required for safety, and to assess the safety and reliability of completed local protection systems; begin improving our capability to make emergency repairs, provide resilient engineering systems, and accounting for all realistic failure mechanisms by investing in the research and development (R&D) required to develop innovative solutions

FY 2008 Activities:

In FY08, Actions 2, 3, 8, 9, 11, and 12 (Employ Risk-based Concepts in Planning, Design, Construction, Operations and Major Maintenance; Continuously Reassess and Update Policy for Program Development, Planning Guidance, Design and Construction Standards; Assess and Modify Organizational Behavior; Effectively Communicate Risks, Manage and Enhance Technical Expertise and Professionalism; and Invest in Research, respectively) will be emphasized, and the output of these Actions is strongly linked to successfully executing the FY07 program in these Actions and the FY07 and FY08 programs in Actions 1, 5, 6, 7, and 10 (Employ an Integrated Comprehensive Systems-Based Approach, Employ Adaptive Planning and Engineering Systems, Focus on Sustainability, Review and Inspect Completed Works, and Establish Public Involvement Risk Reduction Strategies). Fiscal Year 2008 funding will be used to infuse the methods, technologies, and processes developed in 2007 to USACE Districts and major stakeholders; will update planning and engineering systems guidance to reflect recommendations made by IPET and related groups; continue R&D for innovative methods to rapidly characterize levee, dike, dam, and floodwall stability and provide sustainable protection from erosion by waves and overtopping, as well as sustainable emergency repair; pilot regionalization of technical specialties, regional Risk Managers, and district Principal Engineers; develop a plan for periodic organizational reviews; continue to improve the understanding and capability of the engineering workforce to reduce residual risks of proposed alternatives, to design effective modifications required for safety, and to assess the safety and reliability of completed local protection systems; and pilot improved risk communication methods that increase public involvement in risk reduction.

APPROPRIATION TITLE: Construction, FY 2008

**Dam Safety and Seepage/Stability Correction Program**

Allocation FY 2007	\$11,000,000	Tentative Allocation FY 2008	\$39,000,000
Evaluation Studies	\$ 0	Evaluation Studies	\$29,000,000
Post-Evaluation Work	\$11,000,000	Post-Evaluation Work	\$10,000,000

GENERAL: The Dam Safety and Seepage/Stability Correction Program provides for studies and modification of completed Corps of Engineers dams. There are over 700 dams under the Corps jurisdiction. While no Corps dams are in imminent danger of failure, some have been identified as having a higher risk of a dam-safety incident than originally anticipated based on new data or the likelihood of extremely large floods and seismic events. The Corps has started the implementation of a Portfolio Risk Analysis program and has completed screening over 20% of the Corps dams. The evaluation studies funded under the Dam Safety and Seepage/Stability Correction Program are for dams identified with very high risks of a dam-safety incident. Dam Safety Assurance modifications are made to provide for passage of the maximum probable flood (PMF) based on changes in the climate of the area. Other dam safety assurance modifications are designed to insure that the dam retains the reservoir during and after a major earthquake. Seepage problems at USACE dams are usually related to increase reservoir levels above the previous pool of record at a dam. Other seepage problems arise due to water seeping through the contact between the dam and bed rock. Static instability generally involves movement that starts at a slow rate and could result in massive displacement of large volumes of material if not corrected. Seepage/stability correction projects are classified as major rehabilitations. Dam modification work is proceeding under existing authorities on projects where cost-effective risk reduction measures have been identified in accordance with national priorities.

BUDGET REQUEST: The \$39,000,000 requested for Fiscal Year 2008 will be used (1) for high priority studies (\$29,000,000) and (2) to continue post-evaluation work (\$10,000,000) on high risk dam safety assurance, seepage control, and static instability correction projects.

- (1) For Evaluation Studies \$29,000,000 is requested. The Corps Screening Portfolio Risk analysis has identified 26 Dam Safety Action Class I and II critical projects for studies during Fiscal Year 2008. These are the highest priority projects where studies have not been completed in prior years. These studies were previously budgeted under the Operations and Maintenance appropriation.

Dam Safety Assurance Studies

Ball Mountain Lake, VT  
 Cherry Creek Lake, CO  
 East Branch Clarion River Lake, PA  
 Hidden Dam, CA  
 Isabella Dam, CA  
 Keystone Lake, OK  
 Mansfield Hollow Lake, CT  
 Rough River Lake, KY

Blakely Mountain Dam, AR  
 Dover Dam, Muskingum River, OH  
 Eau Galle River Lake, WI  
 Hop Brook Lake, CT  
 John Day Lock and Dam, OR & WA  
 Lake Shelbyville, IL  
 Martis Creek, CA & NV

Seepage/Stability Correction Major Rehabilitation Studies

Beach City Lake, Muskingum Basin, OH  
 Dale Hollow, TN  
 Herbert Hoover Dike, FL  
 LCADA-Whittier Narrows Dam, CA  
 Nolin River Lake, KY  
 Zoar Levee @ Dover Dam, Muskingum Basin, OH

Bolivar Dam, Muskingum Basin, OH  
 Green River Lake, KY  
 J.E. Roush Lake, KY  
 Mohawk Dam, Muskingum Basin, OH  
 Salamonie Lake, KY

- (2) For Post-Evaluation Work \$10,000,000 is requested for Fiscal Year 2008. These funds will be used to continue post-evaluation work on high risk dam safety assurance, seepage control, and static instability correction projects, once their evaluation reports are approved.



APPROPRIATION TITLE: Construction, FY 2008

**Employees Compensation (Payments to the Department of Labor)**

Allocation FY 2007	\$21,000,000	Tentative Allocation FY 2008	\$21,000,000
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GENERAL: Public Law 94-273, approved April 21, 1976, 5 USC 8147b, provides that each agency shall include in its annual budget estimates a request for an appropriation equal to costs previously paid from the Employees Compensation Fund on account of injury or death of employees or persons under the agency's jurisdiction.

BUDGET REQUEST: The \$21,000,000 requested for Fiscal Year 2008 represents the total costs of benefits and other payments made from the Employees Compensation Fund during the period July 1, 2005, through June 30, 2006, due to injury or death of persons under the jurisdiction of the Corps of Engineers civil functions and also includes \$1,200,000 for the investigation of fraudulent claims for workers' compensation benefits.

APPROPRIATION TITLE: Construction, FY 2008

**Estuary Restoration Program (Title I of P.L. 106-457)**

Tentative Allocation FY 2007	\$5,000,000*	Allocation FY 2008	\$5,000,000
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GENERAL: The Estuary Restoration Act of 2000, Title I of P.L. 106-457 authorizes the Secretary to carry out estuary habitat restoration projects recommended for implementation by the Estuary Habitat Restoration Council and meeting various criteria. Each project must address restoration needs identified in an estuary habitat restoration plan, be consistent with the estuary habitat restoration strategy developed under the Act, include a monitoring plan that is consistent with the standards for monitoring developed under the Act and include satisfactory assurance from the non-Federal interests proposing the project that the non-Federal interest will have the capability to carry out items of local cooperation, including maintenance. Except when innovative technology is involved the Federal share may not exceed 65 percent of the cost of the project. Non-Federal interests shall provide lands, easements, rights-of-way and relocations and are responsible for all costs associated with operating (including monitoring), maintaining, replacing, repairing, and rehabilitating the projects. Nine projects are in various stages of implementation. Examples include a dam removal on the Eastern Shore of Maryland, filling of mosquito ditches to restore wetlands in Florida, and reconnecting a back water slough thus restoring tidal floodplain wetland habitat in Oregon. FY 2007 and FY 2008 funds would be to support new projects.

BUDGET REQUEST: The \$5,000,000 requested for Fiscal Year 2008 is to continue the program of estuary habitat restoration, including initiation of new projects.

\*Assumed allocation. Final actual allocations yet to be determined.

APPROPRIATION TITLE: Construction, FY 2008

Navigation Projects

**Inland Waterways Users Board**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost for Continuing Program	\$225,000
Appropriation for FY 2007	210,000
Allocation Requested for FY 2008	225,000
Change in FY 2008 from FY 2007	15,000

AUTHORIZATION: The Inland Waterways Users Board was established by Section 302 of the Water Resources Development Act of 1986, (PL 99-662) and pursuant to the Board's charter, approved by the Secretary of the Army on March 3, 1987. The Board is an advisory committee subject to the requirements of the Federal Advisory Committee Act (PL 92-463).

JUSTIFICATION: The \$225,000 requested for Fiscal Year 2008 is to support, operations and expenses of the Inland Waterways Users Board, established by Section 302 of the Water Resources Development Act of 1986, (PL 99-662) and pursuant to the Board's charter, approved by the Secretary of the Army on March 3, 1987. The Board is an advisory committee subject to the requirements of the Federal Advisory Committee Act (PL 92-463).

- (1) Funds in the amount of \$40,000 are requested to meet the estimated expenses of the eleven member Board for its travel, meeting, and other needs to meet the requirements of the Charter. Board member travel expenses have increased from prior years due to inflation, primarily for airfares.
- (2) Funds in the amount of \$185,000 are requested for Corps of Engineers expenses related to its responsibilities as an advisory committee sponsor and to facilitate reevaluation of the financial structure of the Inland Waterways Trust Fund. The Director of Civil Works has been designated Executive Director to the Board, and he has designated staff members to provide continuing Board support. Corps expenses will include personnel costs for administrative Board meeting support, including staff travel, clerical, printing, and related materials. Additionally, increased staff time is anticipated due to the need to reevaluate the financial basis of the Inland Waterways Trust Fund, which falls under the advisory purview of the Board. The fund is rapidly approaching insolvency. The Office of Management and Budget (OMB) and the Office of the Assistant Secretary of the Army (Civil Works) has directed that alternatives to the current Inland Waterway Fuel Tax be assessed and a possible new funding mechanism be developed. Legislative and administrative changes to the fund will begin to be implemented during FY 08. Proposed alternatives will require intensive coordination with the Board.

ACTIVITIES IN FY 2007: FY 2007 activities include Corps personnel costs to coordinate, attend, and provide analytical support for three scheduled meetings of the Inland Waterways Users Board pursuant to their charter. Support also includes Board meeting logistics, including staff travel, clerical, printing, and related materials. Additional staff time is supporting a reevaluation the financial basis of the Inland Waterways Trust Fund, which falls under the advisory purview of the Board. The fund is rapidly approaching insolvency. The Office of Management and Budget (OMB) and the Office of the Assistant Secretary of the Army (Civil Works) has directed that alternatives to the current Inland Waterway Fuel Tax be assessed and a possible new funding mechanism be developed.

PROPOSED ACTIVITIES FOR FY 2008: FY 2008 proposed activities include Corps personnel costs to coordinate, attend, and provide analytical support for up to three anticipated meetings of the Inland Waterways Users Board pursuant to their charter. Support will also include Board meeting logistics, including staff travel, clerical, printing, and related materials. Additional staff time will be required to support legislation and implementation of alternatives to the current Inland Waterway Fuel Tax, as directed by ASA(CW) and OMB. Proposed alternatives will require intensive coordination with the Board and other inland navigation stakeholder groups.

# OPERATION AND MAINTENANCE

Appropriation Title: Operation and Maintenance, General – Fiscal Year 2008

Asset Management and Facilities Equipment Maintenance (FEM)

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$ 7,424,800
Appropriation for FY 2007	4,000,000
Allocation Requested for FY 2008	4,000,000
Increase of FY 2008 Over FY 2007	0

AUTHORIZATION: EO13327 and DOD (ASD (C<sup>3</sup>I)) memorandum, 10 Jul 95, selecting the FEM system as a DoD migration system for CMMS

JUSTIFICATION: Facilities and Equipment Maintenance (FEM) system is a Department of Defense migratory Computerized Maintenance Management System (CMMS). The Joint Logistics Systems Center (JLSC) developed the system to meet the needs of DoD maintenance organizations. This system was designated as a DoD migratory system in 1995. FEM is the Corps tailored version of MAXIMO Enterprise Base Systems (MRO Software, Inc.), which is a Commercial-Off-The-Shelf-System (COTS) package. FEM is deployed at the Corps' two consolidated data processing centers, and integrates O&M business processes into a cost-effective asset management program. It supports and consolidates functions within each O&M business line providing the capability to track life cycle costs of all assets. FEM is being deployed in FY05/FY06 within the Northwest Division. Development is ongoing to meet the requirements of E.O.13327 for asset management and to update the COTS product to web-based applications.

PROPOSED ACTIVITIES FOR FY 2008. FEM will be deployed in 4 MSCs with a focus on O&M business line champions and best business processes. Resolution of procurement, inventory and timekeeping interface requirements with CEFMS and other corporate legacy systems will be ongoing. Planning for FY08 deployment to the residual FOAs. Reconfiguration to web based application. USACE Asset Management Plan will be revised to comply with OMB requirements. Inventory data will be compiled to meet FRPC reporting requirements. Ongoing development of performance metrics to be accomplished.

ACCOMPLISHMENTS IN FY2007:

1. Completed FEM deployment in NWD, LRD, MVD
2. Initiated reconfiguration to web based applications.

Appropriation Title: Operation and Maintenance, General – Fiscal Year 2008

3. Completed draft AMP in collaboration with OMB
4. Completed real property inventory to meet FRPC requirements
5. Stood-up corporate asset management PDT

Appropriation Title: Operation and Maintenance – Fiscal Year 2008

**Aquatic Nuisance Control Research**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$2,500,000
Appropriation for FY 2007	690,000
Allocation Requested for FY 2008	690,000
Increase of FY 2007 from FY 2008	0

AUTHORIZATION: The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (PL 101-646).

JUSTIFICATION Invasive species cost the public over \$137 billion annually. It is now estimated that over 100 nuisance species are introduced into U.S. waters annually, which can impact operations and maintenance on Corps' facilities, as well as threaten valued natural resources. Zebra mussels alone cost the public over \$1 billion annually. Methods of prevention and more effective, inexpensive methods of control of invasive species must be developed to prevent impacts to public facilities and protect valuable natural resources.

Research efforts have been expanded under the Aquatic Nuisance Species Research Program (ANSRP) to address invasive aquatic species that impact the nations' waterways infrastructure and associated resources. Methods for prevention, control, and restoration of natural resources will be developed. Prevention methodology focusing on dispersal barrier technology will be investigated. The development of strategies to apply control methods involves engineering design, operations, and maintenance of facilities and structures. Control strategies are being developed for (a) navigation structures; (b) hydropower and other utilities; (c) vessels and dredges; and (d) water treatment, irrigation, and other water control structures. Methods to reduce invasive species impacts to threatened and endangered species and restore natural habitat will be investigated. Due to the introduction of the Northern Snakehead Fish and West Nile Virus, the Corps has experienced a significant increase in the number of field assistance requests at our operating projects. Numerous dredged material disposal areas in the Atlantic, Gulf coast and Great Lakes region have mosquito abatement programs. Due to the introduction of the West Nile Virus, local communities want greater assurances that mosquito populations at our disposal sites are controlled to the maximum extent practicable. Following introduction of the Northern Snakehead Fish, a number of Corps reservoir projects have had to take interdiction measures to prevent their introduction.

PROPOSED ACTIVITIES FOR FY 2008:

1. Provide strategic guidance for management and control of silver and bighead carp in large river systems.
2. Provide guidance on the efficacy of using barriers to restrict fish movement on navigable waterways.
3. Develop best management practices for prevention and control of armored suckermouth catfish in lakes/streams in Florida, Texas, and Hawaii.
4. Provide new chemical controls and bio-based screening criteria for Harmful Algal Blooms.
5. Examine the causal agent of Avian Vacuolar Myelinopathy (AVM) blamed for bald eagle deaths on Corps reservoirs.

ACCOMPLISHMENTS IN FY 2007:

1. Evaluated the effectiveness of electrical barriers on preventing Asian Carp movement into Lake Michigan.
2. Developed long-term management and control strategies for silver and bighead carp in big river field studies.
3. Developed chemical and biologically-based control and screening criteria for harmful algal blooms.

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4. Developed assessment techniques to measure the impacts of new introductions of ANS.
5. Developed a hybrid Internet-CD aquatic nuisance species information system for economically / environmentally important ANS species in North America.



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Budget/Management Support for O&M Business Programs

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$5,500,000
Appropriation for FY 2007	4,640,000
Allocation Requested for FY 2008	5,365,000
Increase in FY 2008 from FY 2007	725,000

Performance Based Budgeting Support Program

**AUTHORIZATION:** The Government Performance and Results Act of 1993 (GPRA) and under general authorities contained in various laws.

**JUSTIFICATION:** The President's management agenda and GPRA requires that the Corps implement performance based budgeting for Civil Works Operations and Maintenance, General Program. The Performance Based Budgeting Support Program addresses this requirement by the collection, management and distribution of data; seeking new methods for linking performance to annual budget requests; and for analyzing the potential economic impacts on customers of varying budget levels.

- a. **Civil Works Business Function Information:** Provides critical data and information related to Civil Works project inventories, outputs and performance measures; and for the operational and strategic management of Corps' projects, programs, budget development and studies that directly support the Navigation, Hydropower, Recreation, Environment (Stewardship & Compliance), and Flood Damage Reduction Business Line missions. This information supports the Corps O&M program and is the sole source for the Corps, other Federal agencies, partners, stakeholders, and public. These funds include supporting the database management, integration, standardization, operation, enhancement, quality control, user assistance, training, compliance with security requirements and CEEIS services. It is reported under OMBIL-Plus in ITIPS and the OMB 300b submittal accounting for \$1,400,000 of the overall OMBIL-Plus costs. With out this program being funded will result in the Corps being unable to have any performance measurement for budgeting, management and the PART.
- b. **Civil Works Performance Measurements:** Work includes improvement of performance measurements to be incorporated into the budget decision-making process; support for the Office of Management & Budget's Performance Assessment Rating Tool (PART) initiative; and support for the future Corps budget preparation process. Efforts focus on the refinement of corporate performance principles; and program and project level performance measures that focus on anticipated performance and output at different levels of funding in accordance with the revised finance and accounting cost codes that now align with the five O&M business processes - navigation, hydropower, flood damage reduction, recreation and environmental stewardship. These measurements, at different organizational levels, provide the analytical basis to identify the incremental return on investment in Corps programs at various funding levels and to make adjustments in priorities both at the program and project levels concerning efficiency of facilities or services. Comparison of measurements among projects at all levels helps focus management attention on corrections of program or project deficiencies.
- c. **Civil Works Business Analysis:** This task analyzes data using statistical and other analytical techniques and tools to uncover relationships among budget, expenditures and performance within and between Corps business processes. The relationships and statistics drawn from the data may provide evidence to support an increase in expenditures to improve performance. This task will also develop effective graphics to explain relationships found in the data and allow decision-makers to visualize cause and effect. This task links the data gathering, collection and distribution, and use of data in the decision-making process.

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PROPOSED ACTIVITIES FOR FY 2008: Requested FY 2008 funds will provide continuing support of Civil Works O&M integrated information systems; centrally distributed performance measures, outputs and system inventory information; and evaluation of new measures. FY 2008 funds will also support enhanced development of output-oriented performance measures of the incremental return on investment in Corps Civil Works program areas, including acquisition and training in decision-making software. Additional business lines of water supply and enhanced support to flood damage reduction (FDR).

ACCOMPLISHMENTS IN PRIOR YEARS: Included were newly fielded centralized natural resource collection system and user's training in OMBIL data entry and access. The One-stop access for much of Civil Work's budget performance information was expanded for budget submittals in lieu of separate data calls. With fiscal year 2007 funds of \$654,000, the program will be severely curtailed. Funds will be used to continue the activities associated with the Civil Works Business Function Information through mid-year. The Performance Measurements and Business Analysis efforts are not being undertaken in fiscal year 2007.

Appropriation Title: Operation and Maintenance – Fiscal Year 2008

Recreation Management Support Program

**AUTHORIZATION:** This program is conducted under the general authority of PL 78-534, the Flood Control Act of 1944 (58 Stat. 887).

**JUSTIFICATION:** The recreation program serves almost 400 million recreation visitors and generates about \$40 million in revenue annually. Visitors spend over \$12 billion annually to engage in recreation at Corps projects; over 500,000 full and part time jobs are associated with this spending.

The RMSP supports the recreation program through the conduct of focused management studies to improve operational efficiencies and the provision of technical assistance, to include technology transfer and technology support and maintenance for recreation specific automated information systems. The RMSP supports strategic planning for and performance monitoring of the Corps recreation business program, subject to the Government Performance and Results Act (GPRA).

The RMSP has 3 major components, which together provide comprehensive support to the Corps Recreation Business Program:

1. **Focused Management Studies.** RMSP provides focused management studies and reports to acquire and analyze information about recreation trends, accessibility, emerging issues, user conflicts, visitor diversity, use fee impacts and similar elements affecting the Corps recreation program. Analyses are conducted to support the recreation area modernization program, implementing facility and service standards, and in similar product delivery improvement efforts. Information and technology transfer pursuant to these studies is funded by the RMSP. Ongoing trends analysis provides valuable data on which to base decisions about necessary short and long term adjustments to the program to meet public needs.
2. **Management/Technical Assistance.** RMSP provides technical assistance to the Recreation Community of Practice in the development of management tools, which quantify recreation program outputs and relate them to customer needs and budget allocations for the purpose of measuring performance. This includes gathering and analyzing information about customer satisfaction with the Corps recreation program. RMSP assures the field workforce is equipped with "state-of-the-art" skills and knowledge to deal with a rapidly changing public. RMSP provides technical support and maintenance for visitation collection and analysis, fee collection and reporting, economic analysis, inventory, and similar automated information programs. RMSP provides short-term assistance to projects in solving specific technical problems.
3. **Support to Recreation Program Strategic Planning.** Funding to support the activities of the Recreation Leadership Advisory Team (RLAT) is included. The Team is composed of representatives from the division, district and project levels of the Corps natural resources management program. It provides input, advice and support to the Corps strategic planning for the recreation business program.

**PROPOSED ACTIVITIES FOR FY 2008:** Minimum/Recommended Program: The Recreation Budget Evaluation System (RecBEST) will be refined to increase the capability to monitor and report Recreation performance measures and evaluate and prioritize budget submissions in response to OMB guidance. The Recreation module of the Natural Resource Management Gateway will be further developed to address high priority needs. Demonstrations will be conducted to identify and quantify the benefits of the Corps recreation program and improve effectiveness in addressing the needs of ethnic minority visitors. Emphasis will be placed on improving recreation use monitoring procedures that will be incorporated into recreation performance measures. Customer satisfaction survey methods and benchmarking capabilities will be refined and fully integrated into program performance measures. Technical support will be provided to field staff to implement improved procedures. Support will be provided to standing NRM committees and task forces including: Recreation Program Performance Improvement Initiative, Recreation Entrance Fee Policy Development, Partnerships Demonstration Program, Water Safety, Career Development etc. Support will be provided to Headquarters Recreation program staff regarding strategic planning, development of program evaluations and other high priority Headquarters initiatives. **Capability Program:** Accelerate development of tools for field managers to implement the Recreation Program Performance Improvement Initiative (RPPII).

5 February 2007

ACCOMPLISHMENTS IN FY 2007:

Past products include Recreation Budget Evaluation System (RecBEST), visitation estimation methodology and data collection and reporting tools, economic impact methodology and analysis tools, customer satisfaction survey and benchmarking tools implemented at all CE projects, studies on recreation preferences of ethnic groups including cross-cultural communication issues, and support for development of a strategic context as a foundation for transitioning to a performance based environment, to include performance based budgeting. The Natural Resources Management Gateway was developed as a knowledge management tool for the NRM community and is compatible with other Corps KM and Community of Practice initiatives. The Gateway also provides information to the public about outdoor recreation opportunities on Corps projects and is integrated with RecreationOneStop resources. Guidance and appropriate tools were developed to improve interpretive services associated with the CE recreation program that advance the public's understanding of the environment and the Corps Environmental Operating Principles. Support to Headquarters was provided to refine the recreation business program strategic plan, utilizing input from the RLAT and stakeholders. Goals and objectives were refined, and actions identified to achieve them. Innovative partnership approaches were developed and field guidance prepared to improve stakeholder participation. Stakeholder outreach was conducted to develop partnerships for strategic initiatives.

Stewardship Support Program

AUTHORIZATION: This program is conducted under the authority of ER 1130-2-540, Chapter 7.

JUSTIFICATION: The Stewardship Support Program was established in FY 02 to provide broad support to Environment-Stewardship function at operating projects by assisting in the identification of national program needs, the development of new national program activities, strategic program planning, and the recommendation of national stewardship program funding priorities. Support will be provided in refining the Environment – Stewardship business program strategic plan and goals, and budget processes, to address the targeted outcomes of the overall Corps CW Strategic Plan, using input from the Stewardship Advisory Team, other associated Corps business programs and stakeholders. Goals and objectives will be refined, and actions will be identified to achieve them. Funding this program from a single source reflects the nationwide application and supports standardization in program direction and outputs.

The SSP supports the Environment–Stewardship program by addressing issues or initiatives that have a broad applicability to many USACE Civil Works projects. The three basic components of the SSP are:

(1) Focused Management Actions and Studies. These activities are to implement a course of action or practice within field office activities, a region, or nationwide. Examples of management actions might include developing/ assembling an array of management practices for establishing riparian habitat, or creating a forum to share common experiences, build teams, and disseminate information. Examples of management studies might include the riparian corridors research or conducting studies on management of threatened and endangered species.

(2) Policy Guidance and Management Support. Such activities relate to the development and/ or implementation of guidance. Examples of policy guidance included facilitating cooperative agreements with stewardship non-governmental organizations, or amending the annual Budget Engineer Circular to provide emphasis on conducting inventories of regionally or nationally significant resources.

(3) Information Exchange. These activities are designed to build, integrate, and share our knowledge base to support greater understanding of the environment and the impacts of our work.

5 February 2007

PROPOSED ACTIVITIES FOR FY 2008:

1. Focused Management Actions and Studies: A national assessment of environmental threats that impact environmental stewardship is needed. This assessment would identify the level threat experienced by projects from, for example, invasive species, shoreline erosion, or adjacent land uses. This assessment would assist in prioritizing work efforts and funding for stewardship. In addition, a study to determine benchmarks for various costs related to stewardship activities is needed in order to adequately compare work efforts in budgeting and performance output efforts.
2. Policy Guidance and Management Support: Policy guidance development is needed to support inventory and master plan implementation. Inventories and Master Plans are the focus of two of the Environment-Stewardship strategic goals. Specific guidance is needed to assure common understanding of their requirements and to assure a level of standard output is achieved. Stakeholder outreach tools are recommended to achieve a greater level of stakeholder and customer input in program implementation. A survey, specific to the Environment-Stewardship program, is planned to identify areas of needed management and customer satisfaction improvement. Continued development of the budget evaluation tool, E-S BEST, is essential to improve the Environment-Stewardship budget development process. Refinement of this tool is critical to assist in prioritizing proposed budget packages and developing various budget scenarios to improve the efficiency and effectiveness of the Stewardship program. Strategic planning is also required in order to accomplish the CW strategic goals. The Environment-Stewardship program requires the update of its program strategic plan in order remain in accord with the CW strategic objectives and to assist in accomplishing the CW program goals.
3. Information exchange. NRM Gateway development in support of Environment-Stewardship initiatives in necessary and should continue. This information exchange tool is designed improve communication within the NRM community and preserve the organization's institutional knowledge. Stewardship components of the NRM Gateway will be developed in priority order based on input from the Stewardship Advisory Team (SAT). Technology transfer of best management practices is also required. Best management practices related to inventory implementation; the management of riparian resources, and significant resources such as native prairie lands will be developed and shared. Support for SAT will be provided to facilitate team meetings and other SAT initiatives.

ACCOMPLISHMENTS IN PRIOR YEARS: The allocation of project operations and maintenance funds to conduct specified nationwide (multiple project) activities to improve the efficiency and cost effectiveness of the Environment-Stewardship business program has been employed, with subcommittee staff knowledge and concurrence, since the late 1990s for activities similar to those identified for FY 2007. Past products of the Stewardship Support Program include the initial set of Environment-Stewardship program performance measures, which are in accord with the Government Performance and Results Act and used to measure and monitor priority program outputs and outcomes; the pilot version of the Environment-Stewardship Budget Evaluation System (E-S BEST) used to assist in developing budget scenarios and ranking budget proposals. Components of the Environment –Stewardship portion of the Natural Resources Management (NRM) Gateway, a knowledge management tool for the NRM community, have been completed and others are underway. Support to Headquarters was provided to develop and refine; the Environment-Stewardship business program strategic plan, the program management plan for the Environment-Stewardship Community of Practice, and the annual Environment- Stewardship program development guidance.

Optimization Tools for Navigation (OTN) Program

AUTHORIZATION: Related efforts are necessary to provide practical quantitative and predictive tools and data for minimizing and optimizing the costs of dredging of Federal navigation projects, leveraging development and improvement of channel design criteria across the Corps, the U.S. Navy, and other government/academic institutions. These efforts are essential to providing data and analysis for efficient and effective management of critical national waterborne navigation infrastructure.

Appropriation Title: Operation and Maintenance – Fiscal Year 2008

JUSTIFICATION: To maintain the Nation's Federal navigable waterways, approximately 220 million cubic yards of material are dredged in the U.S. annually. In addition, the national "2020" plan for deeper and wider channels to support emerging commercial cargo vessel designs brings great uncertainty on credible prediction of maintenance requirements. Changing political, engineering, environmental, and demographic factors will increasingly influence project costs. Technological change and emerging vessel hull configurations in the shipping industry require prudent foresight and ongoing efforts to adequately plan for future maintenance dredging activities. Many channel design and dredging requirements, related underkeel clearance and other safety margins have been based on dated physical models and conservative "rules of thumb" on the part of waterway users. New technologies for more precise measurements suggest that current channel design guidance and general rules may be notably overstating vessel clearance needs, resulting in costly and unneeded dredging. The Corps is conducting a vessel hull modeling activity jointly with the Institute for Water Resources (IWR), Engineering Research and Development Center (ERDC) and the U.S. Naval Academy (USNA) that with further development of the CADET (Channel Analysis Design Evaluation Tool) computerized program will render advanced technologies for methods of analysis and compilation of new physical and numerically-generated data sets descriptive of vessel movement and response within confined waterways. Resulting datasets and analytical procedures will in turn be practically applied to more accurately determine channel dimension requirements associated with evolving or foreseeable vessel designs. This vessel hull modeling effort will also generate essential data on hull designs, vessel dynamics and channel configuration in order to optimize and minimize ongoing and future maintenance dredging requirements. Another component known as the Operation & Management Assessment System (OMPAS) is being developed with the Waterborne Commerce Statistics Center (WCSC). This component will use domestic and foreign trade data to determine and analyze the loaded drafts of vessels of all recorded vessel calls for individual harbors and channels and will offer the potential to optimize maintenance dredging requirements for individual channel reaches and potentially across much of the overall Corps dredging program.

PROPOSED ACTIVITIES FOR FY 2008: Proposed FY 08 funds of \$265,000 will be used to continue ongoing vessel model hull and A-frame planning and construction in collaboration with ERDC, NAVSEA-CARDERO, and the Naval Academy in Annapolis, Maryland, and for the exchange, coordination, and technical support for both the vessel motion unit and the research and reference database being assembled for U.S. naval vessel requirements. FY 08 funds will also support continued linkage of IWR, ERDC and CARDERO activities with the computerized application known as CADET. Funds will also be used to support efforts by the Waterborne Commerce Statistics Center to develop bridging software programs to link foreign trade databases with vessel characteristics databases.

ACCOMPLISHMENTS IN PRIOR YEARS: FY 06 and FY 07 funds were used to initiate the vessel hull modeling effort in conjunction with ERDC, the USNA and NAVSEA-CARDERO. FY 06 and FY 07 activities included scoping the effort, agreement on task delegation among participants, coordination and securing participation from the Navy, evaluating physical model basin requirements and preparation by ERDC, and initiation of model vessel hull construction in conjunction with improvements to the computerized application known as CADET. Work was initiated by the WCSC to scope requirements for development of software programs to link foreign trade databases with vessel characteristics databases. Also in FY 06/07 the program helped support the physical modeling and design for bulbous bow modifications for the Corps Dredge ESSAYONS. The remainder of FY07 will see further advancements in CADET, vessel hull modeling, and initial technical development for OMPAS.

## 1. Operation and Maintenance

### 12 Actions for Change to Improve Operation and Maintenance

Total Estimated Federal Cost	Allocation Prior to FY 2007	Allocation FY 2007	Allocation FY 2008	Additional to Complete After FY 2008
62,000,000	200,000	TBD	8,737,000	53,063,000

#### SCOPE:

USACE has embarked on an ambitious program for quickly incorporating the lessons learned from Hurricane Katrina into “Twelve Actions for Change” which recognizes that sustainability is critical for infrastructure where failures would have major life and safety or economic consequences. The 12 Actions are interrelated and interdependent, and will be fully integrated for execution. Specifically, through Operation and Maintenance funding of the 12 Actions, USACE will improve its ability to perform operation and maintenance using a systems approach that incorporates risk-based asset management to prioritize investment; develop processes to enhance multi-objective decision making for post-construction evaluation of project outcomes to be supported by enhancing data collection on project operations, repairs and modifications using existing O&M databases and integration with P2 and geospatial databases; update or develop methods and technologies , for analyzing the engineering and operational reliability of local protection systems; develop risk analysis concepts fully, including social and environmental impacts; integrate multiple efforts for consistency across business lines considering the life cycle of the system and its components; scaleable and adaptable for practical application; update policy and guidance for operations and maintenance; incorporate adaptive management and flexibility into decision making for the system life cycle to account for dynamic conditions and nonlinear processes such as subsidence, climate variability, altered seismicity, variable development and land use trends, shifts in rainfall-runoff relationships, and channel migration; and reinforce the integration of asset management and the USACE’s Environmental Operating Principles (EOPs) into the life cycle of USACE infrastructure. These results represent accomplishments in Actions 1, 2, 3, 5, 6, 7 and 12, and are strongly linked to successful execution of Actions 4, 8, 9, 10, and 11.

FY 2008 funding builds upon work accomplished using 2006 emergency supplemental appropriations for the Interagency Performance Evaluation Task Force, Hurricane Protection Decision Chronology, and 2007 funding to respond to critical needs identified by these groups and by the National Academy of Science, the American Society of Civil Engineers’ External Review Panel, and others in the wake of Hurricane Katrina. USACE will incorporate the new methods in related programs funded in the Operation and Maintenance account.

#### JUSTIFICATION:

Using the Program Assessment Rating Tool, an assessment of the USACE Flood and Storm Damage Reduction Program determined that there exists a need to evaluate how completed flood and coastal storm damage reduction projects help reduce the Nation’s overall flood damages; provide greater coordination between USACE, FEMA, and other federal, state, and local agencies that set floodplain and coastal zone management policies; and improving risk communication and public involvement in risk reduction strategies. A related assessment of the Environmental Stewardship Program noted that USACE needs to take a more proactive management approach that involves better knowledge of its resources; the improved understanding of adaptive management approaches to dynamic conditions and nonlinear processes under this program will assist in achieving Environmental Stewardship goals. Similarly, the asset management initiatives in this program will assist the Hydropower business line, for which the assessment reported that USACE lacks an overall short- and long-term asset management strategy. The 12 Actions for Change will allow the USACE to support the implementation of flexible, adaptive management to accommodate the range of uncertainty over the life cycle of the system, thus reducing the occurrence of failures and poor performance that adversely impact public health and safety.

#### FY 2007 Accomplishments

FY 2007 funding enabled USACE to improve the methods for Inspection of Completed Works (ICW) to include an assessment of engineering safety and operational adequacy based on the results of IPET and the HPDC; begin to link or upgrade existing O&M databases to be capable of tracking incremental changes in the watershed and infrastructure; develop guidance for levee certification; improve the methods and technology for gage survivability during major coastal storms; improve the engineering reliability models of levees and floodwalls due to the effects of surges and overtopping; begin developing the methods for incorporating adaptive and asset management and sustainability into decision making (particularly a nationwide standard that accounts for changes in the vertical geodetic datum and subsidence); and update guidance.

#### FY 2008 Activities

In FY08, Actions 1, 2, 3, 5, 6, 7, and 12 (Employ an Integrated, Comprehensive Systems-Based Approach, Employ Risk-based Concepts in Planning, Design, Construction, Operations and Major Maintenance; Continuously Reassess and Update Policy for Program Development, Planning Guidance, Design and Construction Standards; Employ Adaptive Planning and Engineering Systems; Focus on Sustainability; and Invest in Research, respectively) will be emphasized, and the output of these Actions is strongly linked to successfully executing the FY07 program in these Actions and the FY07 and FY08 programs in Actions 8, 9, and 10 (Assess and Modify Organizational Behavior, Effectively Communicate Risk, and Establish Public Involvement Risk Reduction Strategies, respectively). Fiscal Year 2008 funding will be used to continue updating policy and guidance for operations and maintenance; continue development of supporting technologies to improve the effectiveness of post-authorization evaluations and assessments of incremental change; enhance the use of adaptive management in project operation and maintenance; begin to implement the nationwide datum and associated subsidence standards and certification; develop framework for Learning Watersheds and conduct workshops to infuse sustainability into practice; develop supporting methods and technologies to support the transformation of ICW from project element inspection to a risk-based system assessment; advance the understanding of risk and reliability modeling of surge and overtopping; and continue progress on gage survivability.



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**Coastal Inlets Research Program**

SUMMARIZED FINANCIAL DATA:

Ceiling

Estimated Annual Cost of Continuing Program	\$4,000,000
Appropriation for FY 2007	2,475,000
Allocation Requested for FY 2008	2,475,000
Increase of FY 2008 from FY 2007	0

AUTHORIZATION: This effort is funded by the Operation and Maintenance, General Appropriation and is necessary to provide quantitative predictive tools and data for reducing the cost of dredging of Federal navigation projects and for supporting national security efforts to protect waterways and ports.

JUSTIFICATION: In FY05, the Corps spent \$628 Million to dredge 213 Million cu yd for maintenance of Federal navigation channels. Dredging costs have increased approximately \$14 Million each year from FY63 through FY05 due to increases in the number, length, and depth of navigation channels<sup>1</sup>. To be competitive, harbors and ports must deepen and widen navigation channels to accommodate larger, more advanced vessels. Dredging in and around the more than 500 inlet and harbor channels is a significant portion of this cost, as the age of stabilization and sediment-retaining structures such as jetties, interior revetments, and jetty spurs approach exceeds 100 years. The inlet-structure system does not function in isolation of the adjacent beaches, estuaries, and bay. Thus, storm protection and environmental implications of ongoing and future dredging actions must be considered within the holistic inlet system. The Corps needs knowledge and tools to better forecast future channel shoaling, design solutions to reduce dredging magnitudes and costs, while improving navigability of the nation's waterways and maintaining the integrity of the inlet-adjacent beach-estuary-bay system.

PROPOSED ACTIVITIES FOR FY 2008:

(1) Wave climatology will be developed for all coasts (including the Great Lakes) and implemented within the AMDT. The AMDT will be tested in hindsight mode with data from FY07. (2) Incorporate equations to represent cohesive sediment transport and flocculation within the three-dimensional sediment transport model in the Coastal Modeling System (CMS) Surface Water Modeling (SMS) System. (3) Develop Inlet Navigation Toolbox, a web-based suite of simple analytical programs for rapid, desk-top rule-of-thumb predictions for inlet behavior. (4) Conduct idealized modeling within the CMS-SMS and develop analytical tools for predicting the increase in channel shoaling as a function of channel deepening and widening.

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<sup>1</sup> <http://www.iwr.usace.army.mil/ndc/dredge/ddcosts.htm> .

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ACCOMPLISHMENTS IN FY 2007: The CIRP successfully completed all of the project requirements and completed the following products:

1. Implemented Asset Management Decision Tool (AMDT) within the eCoastal framework. A structure for the AMDT was developed and data for the AMDT was coasts of the U.S., including the Great Lakes, populated the database. This system provides a rational framework for assessing and prioritizing repair of navigation structures.
2. Developed and tested shoreline change prediction within the Surface Water Modeling (SMS) System. The Coastal Modeling System (CMS) within the PC-based SMS package was upgraded to include prediction of shoreline change. The previous CMS included modeling of circulation (tide, wind, wave, freshwater influx), wave transformation, and sediment transport at regional and local scales. This upgrade including shoreline change prediction created a desk-top tool with the capability to evaluate the implications of dredging activities on adjacent coastal and bay beaches. A workshop was held for District, Division, and Industry personnel transferring the new capability.
3. Implemented 3D sediment, temperature, and salinity transport prediction within the SMS-CMS. Three-dimensional modeling of non-cohesive sediment transport, temperature evolution, and salinity transport was released within the SMS-CMS. This new capability allows prediction of how potential engineering modifications at inlets (e.g., lengthening jetties or deepening channels) and within the regional system (e.g., adding a dam on a river) modifies three-dimensional sediment transport and salinity intrusion within the inlet-estuary-bay-river system. This new capability was applied and validated at the Mouth of the Columbia River, Washington/Oregon.
4. Upgraded wave prediction within the SMS-CMS. An advanced wave prediction model was developed, tested, and implemented within the SMS-CMS. This advanced model more accurately predicts the complex interaction of wave-structure and wave-ship interactions within inlet navigation channels, including wave runup and overtopping of coastal structures, vessel-induced wakes and currents, and vessel-channel interaction.
5. Incorporated environmental variables in the Advanced CIRCulation (ADCIRC) model. Modeling of sediment transport and morphology change in inlet, estuarine, and bay systems was improved by incorporating environmental variables such as salinity, temperature, precipitation, and evaporation in the regional Inlet Modeling System-Advanced CIRCulation model (CMS-ADCIRC). These new features were transferred to District, Division, and Industry personnel in workshops.
6. Implemented implicit modeling of two- and three-dimensional sediment transport within the CMS. Implicit models have the potential to run up to 50 times faster than explicit models. The existing 2- and 3D sediment transport models within the CMS were rewritten to add an implicit solver, and these codes were tested at several sites with a 10- to 50-time reduction in simulation length. Rapid evaluation of operation and maintenance activities at navigation channels is even more accessible to District and Division engineers with the implicit version of these PC-based models. The 2D and 3D implicit versions were tested and validated at the Mouth of the Columbia River. A group of District and Division personnel were trained and are beta-testing the implicit codes.
7. Developed a comprehensive geomorphologic model of stabilized coastal inlet morphology to improve bypassing. Stabilized and dredged inlet systems create disequilibrium in the regional system when first constructed. Over decades to centuries, the inlet system evolves into a new equilibrium with the wave, current, and sediment transport regime. This guidance provides a model for a stabilized inlet system so that future modifications to the inlet navigation channel can be best designed to reduce channel shoaling and minimize adverse environmental and erosional conditions. The model was documented in a Technical Note and draft journal paper.

Appropriation Title: Operation and Maintenance, General – Fiscal Year 2008

**Cultural Resources (NAGPRA/Curation)**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$3,000,000
Allocation Requested for FY 2007	2,000,000
Allocation Requested for FY 2008	1,500,000
Increase in FY 2008 from FY 2007	0

AUTHORIZATION: The Native American Graves Protection and Repatriation Act (NAGPRA) enacted on 16 November 1990 contains data gathering, reporting, consultation, and permitting provisions that have near-term and long-term implications for Civil Works programs and projects.

JUSTIFICATION: The Native American Graves Protection and Repatriation Act (NAGPRA) addresses the recovery, treatment, and repatriation of Native American and Native Hawaiian cultural items by Federal agencies and museums. As defined by the Act, cultural items are human remains, associated funerary objects, unassociated funerary objects, sacred objects, and objects of cultural patrimony. In FY 1994, the Corps began the process of inventorying human remains and associated funerary objects and completing summaries as mandated by the legislation. In addition, the Corps is responsible for curation of cultural resource materials collected from its water resources development projects. A Mandatory Center of Expertise (MCX), located at the St. Louis District, provides overall management of the Corps NAGPRA programs and serves as an information source and a centralized base for curation compliance and contracting. The MCX will facilitate the assurance of consistent nationwide program implementation and operation. The Corps is responsible for the curation of at least 46,255 cubic feet of artifacts collected from its water resources development projects and at least 3,511 linear feet of associated records. Curation of these materials, the largest volume of all federal agencies responsible for this activity, is required by a number of public laws with implementing guidance in 36 CFR Part 79. Corps collections represent over 80 percent of the total DoD collections. These extensive collections are located hundreds of curation facilities across the nation. The MCX, in providing NAGPRA inventories, will assist in establishing the extent of Corps holdings. The costs are to accomplish NAGPRA work and to fund MCX curation support to the districts.

PROPOSED ACTIVITIES FOR FY 2008: The MCX and Corps Commands will continue the process of inventorying Native American and Native Hawaiian human remains and associated funerary objects and complete summaries of unassociated funerary objects, sacred objects, and objects of cultural patrimony as mandated by the legislation. Information will be made available to interested individuals and groups through notices in the Federal Register. Through MCX provided funding, districts will continue to be engaged in formal consultation with tribes and organizations for the legislated purpose of repatriating cultural objects for which there are legitimate claims. The MCX will continue to fulfill its chartered activities in support of other military services and DoD, lead in the implementation of an agency-wide, long-term plan for the curation of USACE archeological collections (heritage assets). The MCX will also continue to work closely with USACE commands on the implementation of final guidelines and procedures for field collection of archeological materials and the long-term treatment of those collections. In this regard, the MCX will act as a source of expertise for processing and rehabilitation of USACE collections. Finally, the MCX will provide leadership in the development of a training curriculum on the treatment of heritage assets and working in consultation with all stakeholders, take initial steps to make this training available to USACE and other appropriate DoD managers and decision makers. As Corps compliance with NAGPRA Sections 5 – 7 approaches completion, the MCX will place staffing and other resources in a position to accelerate the rehabilitation and long-term management of archeological artifacts collections and associated records that are assessed to be at the greatest risk of deterioration or damage.

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ACCOMPLISHMENTS IN PRIOR YEARS: A Mandatory Center of Expertise (MCX), located at the St. Louis District, was established to provide overall management of the Corps NAGPRA programs and has served as an information source, a centralized base for curation compliance and contracting. The MCX has facilitated the assurance of consistent nationwide program implementation and operation. The MCX, in providing NAGPRA inventories, has assisted in establishing the extent of Corps holdings. Associated with efforts to complete NAGPRA, the MCX began the process of effectively managing the Corps curation efforts. Corps reporting compliance with NAGPRA will approach approximately 75% by the start of FY07. A phased task plan for curation has been developed.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2008

**Dredge Wheeler Ready Reserve**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$10,500,000
Allocation for FY 2007	8,000,000
Allocation Requested for FY 2008	<b>8,000,000</b>
Increase of FY 2008 over FY 2007	0

AUTHORIZATION: Section 237 of the Water Resources Development Act of 1996 (WRDA 96) contained a provision requiring the Corps hopper dredge WHEELER to be placed in a ready reserve status.

JUSTIFICATION: Section 237 requires that no individual project funds may be used to fund the dredge in its ready reserve status unless the dredge is specifically used in conjunction with a project. Prior to Fiscal Year (FY) 1998, the costs for operation of the WHEELER had been reimbursed from project funds from the Operation and Maintenance, General appropriation, and subsequently charged to the Harbor Maintenance Trust Fund account as eligible navigation costs subject to reimbursement. In FY 1998, the WHEELER was placed in a ready reserve status as required by the above referenced section of WRDA 96.

PROPOSED ACTIVITIES FOR FY 2007: The hopper dredge WHEELER, will remain in ready reserve status, and will be required to be able to perform emergency dredging work, but will not be assigned any scheduled hopper dredging work. The dredge will be placed in an active status in order to perform work in those instances when private industry fails to submit a responsive or responsible bid for advertised dredging, or where industry has failed to perform under an existing contract.

ACCOMPLISHMENTS IN PRIOR YEARS: The WHEELER was kept at the dock, with sufficient crew to respond to any unforeseen requirement within 72 hours and to work for approximately three continuous weeks. The dredge was maintained in a fully operational state and periodically performed routine dredging operations to test equipment and keep the crew trained and prepared. The WHEELER performed approximately 60 days of training during the year. In every year but one, since being placed in ready reserve status, the WHEELER was called out to perform urgent dredging to assist industry dredges in restoring navigation channels and waterways.

Appropriation Title: Operation and Maintenance – Fiscal Year 2008

**Dredging Data and Lock Performance Monitoring System**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost for Continuing Program	\$1,595,000
Appropriation for FY 2007	1,062,000
Allocation Requested for FY 2008	1,062,000
Increase of FY 2008 over FY 2007	0

AUTHORIZATION: These efforts are necessary to provide dredging and lock data for efficient management of Congressionally authorized navigation projects, as well as to respond to specific public laws, including PL 96-269 (Minimum Dredge Fleet), PL 100-656 (Small Business Set-Aside), for meeting the Government Paperwork Elimination Act (GPEA) and Clinger-Cohen/IT Management Reform Act.

JUSTIFICATION:

a. **Dredging Data and Lock Performance Monitoring System:** The dredging and lock data collection and processing programs provide information for the Corps operational and strategic management decisions; for performance indicators of the navigation projects and programs; and input for improvement studies in direct support to the Navigation Business Line mission. Information includes Corps performed and contracted dredging (location, quantity, cost etc.); all lock activities (barges and tons of commodities, chamber unavailability, processing times, delays etc.), and physical descriptions of all the Corps owned/operated locks. The funds support the database management, operation, enhancement, quality control, user assistance, training, compliance with security requirements and CEEIS services. Both systems are the sole source of dredging and lock data/information for the Corps, Federal government and industry. These databases are transactional systems within the Corps centralized Operations and Maintenance corporate information system. They are reported under OMBIL-Plus in ITIPS and the OMB 300b submittal accounting for \$725,000 of the overall OMBIL-Plus costs.

b. **Future National Dredging and Port Requirements.** Technological change in the shipping industry is a continual process requiring ongoing analytical efforts to estimate the nation's future maintenance dredging needs. Update of current and future vessel characteristics, channel dimensions, and commodity origins-destinations and other cargo data is needed to support the Corps maintenance dredging program. Tasks include updating of the world fleet composition and forecasts; analysis of current and projected commodity and traffic flows and trade patterns; and the collection and associated analysis of dredging information and performance data in support of CW navigation decisions.

PROPOSED ACTIVITIES FOR FY 2008: Continue to support the Corps Navigation responsibilities and be responsive to changing data needs by maintaining the Lock and Dredging information systems, providing essential upgrades, security and user support; developing additional data warehouse reports to support the data requirements of the performance based budget process, and work with the National Lock Data "Product Delivery Team" overseeing Corps lock data requirements. Update outdated (year 2000) forecasts from the National Dredging Needs Study for the world vessel fleet, commodities and trade; develop voyage ports-of-call information for containerships; assess vessels transiting U.S. ports; and physically model vessel motion to assess and minimize future dredging requirements. Provide dredging and lock analytical, technical, and data support for Corps offices. Provide lock performance measures to monitor lock operations performed by the MEO or contractor as the result of the competitive sourcing of the O&M of Locks and Dams activity.

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ACCOMPLISHMENTS IN PRIOR YEARS: Provided lock and dredging data and information critical for navigation performance measures, the assessment of dredge bidding competition, national and regional trends in dredging costs and quantity, the annual small business reports for SADBUs, and lock availability and performance. Performed operations, maintenance, system upgrades, security and user support for dredging and lock data systems. Finalized the lock data warehouse with all lock data available from a central source. The Dredging Needs Database was updated. Conducted in-depth review of Dredging Information System and implemented changes in response to the GAO study of benefits and effects of the Corps dredge fleet.

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**Dredging Operations and Environmental Research (DOER) Program**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$7,000,000
Appropriation for FY 2007	6,080,000
Allocation Requested for FY 2008	6,080,000
Change in FY 2008 from FY 2007	0

AUTHORIZATION: The Water Resources Development Acts of 1986, 1988, 1990, 1992, 1996, and 1999 contained provisions addressing contaminated sediments in navigation channels, dredged material management, and beneficial uses that mandates a continuing need for innovative and enhanced technology.

JUSTIFICATION: The last comprehensive research effort on contaminated sediments and dredged material management was completed in 1978 under PL 91-611. More recent Water Resources Development Acts contained provisions addressing contaminated sediments in navigation channels, dredged material management, and beneficial uses that mandate a continuing need for innovative and enhanced technology. Contaminant detection limits are now so low that sub-trace levels of toxic substances are identified. High profile contaminants continue to plague numerous Federal and permitted dredging projects. Traditional upland disposal areas have reached or are approaching capacity with few opportunities for new facilities. Aquatic placement is under increased scrutiny due to habitat degradation concerns and expanded listings of aquatic threatened and endangered species such that this economically preferable alternative is contested by increased litigation and substantially higher costs. Environmental standards and controls for all dredged material placement alternatives are increasingly restrictive and continue to grow in number. Risk-based assessments and management have gained acceptance; unfortunately the Corps' corporate technology base is diminishing and must be maintained. Beneficial use/reuse of dredged material is a priority and environmental resource protection is a mandate, however costs are increasing due to the constraints noted above. Continued economic viability and security of the Nation will depend upon our ability to remove, manage and beneficially reuse dredged material in a cost-effective and environmentally responsible manner. Continued engineering and environmental innovation will be essential to keep costs within budget constraints.

The DOER Program is an integral and highly beneficial component of the Corps navigation dredging and environmental protection missions. Dredging and disposal must be accomplished within a climate of increased dredging workload, fewer placement sites, increased environmental constraints, and decreasing fiscal and manpower resources. Balancing environmental protection with critical economic needs while accomplishing dredging activities is a major challenge. The DOER program has validated innovative technologies for managing high profile contaminants and developed risk-based assessments that will significantly reduce testing costs at virtually all harbors. Methods for reclamation and reuse of contaminated sediments from upland disposal areas for beneficial purposes as well as increased capacity are key components of the program that will result in significant fiscal, manpower and time resource savings.

Major focus areas of DOER include, (1) innovative technologies, (2) environmental resource protection, (3) dredged material management, and (4) risk research.



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### PROPOSED ACTIVITIES FOR FY 2008:

1. **Innovative Technologies:** Complete evaluations of a diesel fuel additive designed to reduce emissions, provide fuel savings, and reduce stack gas temperatures for increased engine life. Complete development of overdepth analyses tools to provide operations managers timely information to monitor the amount of overdepth dredging taking place during dredging to improve planning for disposal sites with limited capacity. Complete evaluation of bed levers for “turtle friendly” cleanup operations to reduce amount of time (and money) that hopper dredges are required at the site. Initiate development of navigation channel condition indices calculations of key performance measures related to navigation channel asset management and reliability.

2. **Environmental Resource Protection:** Publish guidance for application of risk assessment-based methods for negotiation of objective environmental windows. Publish results of lab and field studies that identify specific effective protective measures for Threatened and Endangered Species that pose major conflicts with O&M navigation projects. Demonstrate new technologies for determination of critical habitat functions and calculation of population consequences of incidental takes. Publish guidance on restoring CDF capacity by means of optimized beneficial use. Publish documented assessments of fish habitat enhancements linked to open-water dredged material disposal alternatives.

3. **Dredged Material Management:** Guidance for Confined Disposal Facility sediment recycling. Complete guidance document for assessing sediment resuspension during dredging. Version 1 of fluid mud spread model incorporated into Surfacewater Modeling System (SMS) to optimize aquatic disposal site management. Publish studies documenting fluid mud behavior in navigation channels and disposal sites. Version 2 of SMS dredging toolbox with features including dredge look-up tables, additional dredging models and improved GIS capabilities.

4. **Risk:** Enhance sediment transport models through addition of contaminant partitioning and transport algorithms to provide more accurate estimates of contaminant exposure during dredging operations. Release guidance and models for conducting contaminant pathway and screening-level risk assessments for upland confined disposal. Publish case studies using multi-criteria decision analysis methods for dredged material management.

ACCOMPLISHMENTS IN FY 2007: The DOER Program successfully completed all of the project requirements and completed the following products:

1. **Innovative Technologies:** Completed field demonstration and verified design and implementation (QA) procedures of Silent Inspector automated monitoring system for mechanical and cutterhead dredges (all dredge types completed). Completed guidance document for dredging projects conducted in sediments contaminated with Munitions and Explosives of Concern (MEC). Completed feasibility study on the use of draghead screens as a Threatened and Endangered Species (TES) protection measure. Completed evaluation of fluid mud surveying systems and engineering recommendations on implementation of a USACE-wide navigable depth policy. Initiated planning and design of field demonstration/evaluation of a diesel fuel catalyzer that reduces emissions, provides fuel savings, and reduces stack gas temperatures for increased engine life. Initiated investigation of overdepth dredging to provide the USACE with quantitative analyses tools of overdepth dredging by different types of dredges in different types of site-specific conditions.

2. **Environmental Resource Protection:** Expand content of Threatened and Endangered Species Protection website (<http://el.erc.usace.army.mil/tessp/index.cfm>) to advance project planning and reduce impacts of dredging operations. Complete research on methods to minimize losses of threatened or endangered species during inland and coastal waterway dredging. Refine and disseminate new protocols for beneficial use of dredged material for aquatic habitat enhancement and protection of essential fish habitat. Continue collaborative

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efforts with regulatory agencies on research directed toward protection of sturgeon, salmon, sea turtles, piping plover, least tern and selected other species.

**3. Dredged Material Management:** Release Version 1 of SMS dredging toolbox to link dredging models/tools, other relevant models, dredging databases, and GIS databases within a user-friendly graphical user interface. New, more accurate and broadly applicable models of dredged material placement and dredged mound stability tested, published, and distributed to district users. New measurement devices for in-situ dredged aggregate erosion and settling tested, published, and in use for district projects. Demonstration for optimizing nearshore placement of dredged material for littoral zone/beach nourishment. New CDF desalinization guidance.

**4. Risk:** Publish and release through DOTS website models for predicting volatile losses from dredging and disposal activities. Release enhanced version of RECOVERY model for predicting contaminant fate, transport and exposure for dredging and capping operations. Release advanced risk model (FISHRand-Migration) for predicting exposures and risk to humans and wildlife resulting from dredging and disposal activities.

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**Dredging Operations Technical Support (DOTS) Program**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$1,500,000
Appropriation for FY 2007	1,391,000
Allocation Requested for FY 2008	1,391,000
Change in FY 2008 from FY 2007	0

AUTHORIZATION: These efforts are necessary to provide support for management of Federal navigation projects.

JUSTIFICATION: Maintenance of the nation’s navigation projects requires compliance with numerous complex environmental statutes and Presidential Executive Orders. The Dredging Operations Technical Support (DOTS) Program fosters a “one-door-to-the-Corps” concept by providing comprehensive and interdisciplinary technology transfer, technology application, and training essential to all stakeholders involved in Federal and permitted navigation projects. DOTS provides a structured, centralized source of technical information that maximizes ROI of R&D funds by facilitating transfer of existing and new technologies to field office personnel. Expeditious and consistent implementation of National policies and laws pertaining to navigation are supported by demonstration of new, effective technical solutions to problems confronted during the execution of authorized navigation projects. The DOTS Program serves as a direct link to state-of-the-art technologies and ongoing research results for timely application to problems identified by field offices. Emerging environmental concerns often cause uncertainty and unanticipated difficulties in the administration of the Corps’ navigation dredging program. The DOTS program’s technology transfer function provides access to an extensive, up-to-date, consistent technology base whereby timely, proactive responses to technical issues can be made as they emerge. This approach promotes networking and solutions to common problems confronting the navigation dredging community. DOTS supports knowledge-based exchange of information throughout the interagency coordination process. Short-term work efforts to address generic Corps-wide technical problems encountered during maintenance of navigable waterways and infrastructure are major features of the DOTS Program. Technology transfer and demonstration of new techniques with potentially high returns on investment for management of Corps navigation maintenance projects are critical DOTS functions. By disseminating technically sound knowledge to field offices constrained by staff reductions and limited resources, the DOTS Program will continue to perform a critical technology transfer role in support of all O&M navigation projects.

PROPOSED ACTIVITIES FOR FY 2008: Renewed emphasis will be placed on effective transfer of technology developed by the Corps and others engaged in maintenance and management of navigation structures and navigable waterways. Typical technology transfer topics include: management of Confined Disposal Facilities; management of contaminated dredged material; application of innovative risk-based technologies to assess contaminated dredged material; maintenance of coastal inlets and adjacent shorelines; shoreline stabilization and river training methodologies; assessment and management protocols for beneficial uses of dredged material; channel realignments; equipment selection; operational measures for protection of Threatened and Endangered Species; rational application of environmental windows and alternative best management practices; lock and dam maintenance needs; channel and harbor maintenance activities; ship simulation applications; and numerical modeling methods for resolution of engineering and environmental issues. A trend for increasing need for technical responses, evidenced by consistent growth in requests submitted by field offices on an annual basis, coincides with expansion of the DOTS mission to cover all navigation-related issues in addition to dredging and dredged material disposal. In FY 2008 DOTS will support dedicated training exercises tailored to regional issues associated with the above tech transfer topics. DOTS will continue to maintain and expand web-based tools and databases that are becoming routinely sought resources by Corps and non-Corps personnel alike. DOTS will continue to support rapid technical responses for requests from field offices.

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Personnel turnover due to retirement and attrition within the Corps and other regulatory agencies has created a growing demand for training in diverse technological areas. DOTS-sponsored training of Corps staff, personnel with regulatory authority over Corps navigation maintenance activities, and other stakeholders will convey the latest findings on environmental and engineering techniques associated with maintaining navigable waterways. Training topics include dredging and dredged material disposal; coastal and inland channel maintenance needs; water quality and related aquatic environmental issues; new and emerging techniques for accurate determination of compliance with environmental protection statutes regarding management of dredged material and other features of navigation projects; development and preparation of manuals jointly with the EPA that implement the inland and ocean disposal programs; and short-term work efforts to address generic Corps-wide technical dredging and dredged material management problems related to navigation projects.

DOTS will continue to fill a long-standing void with respect to outreach, providing a broad spectrum of educational materials related to the Corps' navigation mission. Relying on internet resources, this activity has rapidly become an extremely effective means of conveying comprehensive, accurate information to a broad audience, including students, educators, and the general public as well as professionals.

ACCOMPLISHMENTS IN FY 2007: The DOTS program successfully met all of its goals established for technical support, technology transfer, and outreach. Technical questions, from Federal and state agencies and private concerns dealing with implementation of the inland and ocean testing manuals, continued to be addressed. As mandated by the 1972 London Convention, the DOTS program annually compiles data and produces reports on ocean dumping activities to the EPA and the International Maritime Organization. The program has conducted 25 sediment management seminars since 1991 that have been attended by over 5,200 personnel from Corps districts, federal, state, and local agencies, industry, and environmental protection groups. Instruction focused on state-of-the-science techniques in regulating, testing, and managing dredged material. The program also continued to support communication among Corps field offices and numerous agencies engaged in development of regional strategies to promote assessment and protection of threatened and endangered species associated with navigation projects. Examples include extensive coordination and renewed effort to minimize take of sea turtles by hopper dredges, and involvement of the American Bird Conservancy in the search for resolution of conflicts between the conduct of navigation projects and Interior Least Tern populations. A joint Corps/EPA task force made significant progress toward formulation of a combined, generic ocean and inland disposal implementation manual. This effort fosters consistency in dredged material testing and management between the Clean Water and Marine Protection, Research and Sanctuaries Acts. This builds upon and serves as a companion to the completed final version of the Upland Testing Manual. Expansion, maintenance and updating of several web-based databases provided enhanced access to important sources of information, such as the Environmental Residue and Effects Database (ERED), which continued to be critical for successful implementation of the CE/EPA ocean and inland testing manuals for dredged material disposal. Additional databases that extend accessibility to related resources, including upland plant toxicology and tools for risk assessment applications were brought online and refined. A new database providing a comprehensive clearinghouse of information pertinent to protection of Threatened and Endangered Species has been added to the website and has seen extensive use by Corps personnel as well as other Federal and state agencies.

The DOTS Program continues to be an exceptionally successful conduit for navigation and dredging-related information, as evidenced by the distribution of thousands of technical manuals, bulletins, technical notes and reports currently found on the DOTS website (<http://el.erdc.usace.army.mil/dots>). The DOTS website provides a comprehensive information retrieval system for all Research and Development products related to regulating, maintaining, and managing the nation's navigable waterways. For example, the DOTS-sponsored Educational Outreach site (<http://education.wes.army.mil>) has become the most active of all Corps websites, visited by over three million users in its first year of operation, and experiences continued growth.

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**Earthquake Hazards Reduction Program**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$270,000
Appropriation for FY 2007	270,000
Allocation Requested for FY 2008	270,000

AUTHORIZATION: This program is being conducted under the authority of PL 101-614, November 1990, National Earthquake Hazards Reduction Program Re-authorization Act and individual project authorizations for maintaining safety of personnel and emergency response capability.

JUSTIFICATION: The purpose of this program is to respond to the requirements of PL 101-614, National Earthquake Hazards Reduction Program (NEHRP) and Executive Order (EO) 12941, Seismic Safety of Existing Federal Buildings. The EO directs all Federal departments and agencies to develop an inventory of their owned and leased buildings and an estimate of the cost of mitigating unacceptable seismic risks in their buildings. The objective of PL 101-614 is to establish and initiate for buildings and lifelines a systematic approach to reducing loss of life, injuries, and economic costs resulting from earthquakes in the United States. Lifelines are defined as public works and utility systems.

PROPOSED ACTIVITIES FOR FY 2007: Continue development of mitigation program options to meet the executive order requirements and the legal opinion concerns, refine the develop technical seismic building evaluation criteria, refine the develop programmatic seismic criteria, refine the develop guidance or the seismic evaluation and risk mitigation of lifeline facilities, and development of building and powerhouse mitigation plan options, improve information transfer by use of videoconference calls and development of a seismic web site, and develop reports on selected study items. USACE has a legal opinion that indicates that once we have identified seismically vulnerable structures we are legally responsible to develop a plan to mitigate these vulnerabilities. The requested funds will be used to improve seismic information and requirement transfer, adjust the agency specific mitigation plan (if necessary), provide the tools for implementation of the program that would lead to supportable, defensible mitigation decisions, provide assistance to districts in the development of mitigation concepts and designs, provide support to HQUSACE in oversight and management of the mitigation program, provide technical support to HQUSACE, maintain technical seismic expertise, identify potential cost savings areas for study, develop guidance for additional lifeline systems not previously covered in commercially available standards or existing USACE guidance, develop guidance for operations personnel, develop a mitigation plan for the USACE lifelines, update and maintain database. The development and updating of guidance for the seismic evaluation and risk mitigation of lifeline facilities will continue as well.

ACCOMPLISHMENTS IN PRIOR YEARS: Over 12,000 owned buildings and powerhouses were inventoried and data collected, seismic screenings of over 700 buildings in all seismic regions, seismic evaluations were performed on over 200 buildings and powerhouses in various geographic regions primarily in high and moderate seismic regions, development of reports for FEMA to be forwarded to Congress on both buildings and powerhouses, development of seismic evaluation guidance for buildings and lifelines: building evaluation criteria, powerhouse evaluation criteria, lifeline criteria for intake towers, navigation locks, and powerhouses, two seismic evaluation seminars for district personnel, technical support to the districts in accomplishing the evaluations, over 30 rehabilitation case studies including seismic mitigation cost estimates (rehabilitation, replacement, or demolition) for buildings, over 25 rehabilitation cost estimate studies for structural or nonstructural powerhouse deficiencies, inventory of USACE owned buildings including powerhouse superstructures, inventory of USACE leased buildings with estimated populations and recommendations for leasing procedures, development of mitigation program options to meet the executive order requirements and the legal opinion concerns, develop technical seismic building evaluation criteria, develop programmatic seismic criteria, develop guidance for

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the seismic evaluation and risk mitigation of lifeline facilities, develop associated costs studies to include asbestos and lead based paint costs associated with rehabilitation, adapt the building and powerhouse inventory database to an Oracle system compatible with the Operations and Maintenance Business Information Link (OMBIL) program and revise building report to reflect the new criteria.

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## Facility Protection

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$ 12,000,000
Appropriation for FY 2007	12,000,000
Allocation Requested for FY 2008	<b>12,000,000</b>
Increase of FY 2008 Over FY 2007	0

AUTHORIZATION: The Energy and Water Development Appropriations Act, 2002 (PL 107-66), Consolidated Appropriations Resolution 2003 (PL 108-7), Energy and Water Development Appropriations Act 2004 (PL 108-137), Consolidated Appropriations Resolution 2005 (PL 108-447), Energy and Water Development Appropriations Act 2006 (PL 109-103), and the President's Budget proposes similar authorization for FY2007.

JUSTIFICATION: In response to the attacks of September 11, 2001, the U.S. Army Corps of Engineers (USACE) evaluated terrorist threat, vulnerability, and consequences at 609 dams, 75 hydropower projects, and 275 navigation locks. From this effort a list of 306 USACE owned and operated critical projects was developed. In FY2002, the Corps completed risk/vulnerability/consequence assessments of all 306 critical projects to identify additional security protection measures directed against terrorist attacks with supplemental funding. The list was further refined to 263 based upon additional prioritization considerations. The design and implementation of security upgrades on these critical projects was initiated in FY2003 with additional supplemental funding. Congress authorized the use of Operations and Maintenance, General funding in FY2004 to continue work on these security improvements along with additional funding under O&M Miscellaneous to assess, design, and construct security improvements at Corps administrative facilities and laboratories, Mississippi River and Tributaries (MR&T) projects, and the Washington Aqueduct. Funds were also authorized for Research and Development (R&D) support, Corps Mandatory Centers of Expertise support, and increased security guard requirements resulting from changes to the Nation's security levels. In FY05 the Corps initiated the design and implementation of security improvements to administration facilities and laboratories. This work continued in FY2006.

PROPOSED ACTIVITIES FOR FY 2008:

- Continue security upgrades at administrative facilities and laboratories
- Continue cyber risk assessments
- Continue improvement of predictive methodologies for explosive attacks against water-backed embankment dams using data from full-scale experiments
- Implement improved predictive methodologies for water-side explosive attacks against earthen levees into the Anti-Terrorism Planner for Dams (ATP-Dams)
- Conduct a full-scale levee blast experiment
- Continue interagency coordination with the Department of Homeland Security (DHS) and other Dams Sector agencies
- Conduct "systems" vulnerability assessments
- Develop and implement regional monitoring plans and systems
- Conduct testing/exercise programs at selected projects

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ACCOMPLISHMENTS IN FY2007:

- Continued security upgrades to administrative facilities and laboratories
- Finalized the Critical Infrastructure Security Program (CISP) Five Year Strategic Plan
- Completed Rapid Recovery Plans (RRPs) and Site Specific Security Plans (SSSPs)
- Completed an assessment of alternative risk assessment procedures for projects, administrative facilities and laboratory security upgrades
- Initiated assessment of reduced risk at critical projects
- Continued interagency collaboration with DHS Dams Sector Government Coordinating Council and Sector Specific Plan for Dams
- Provided input to the Strategic Threat Assessment Report (STAR) and Dam Sector Annual Report
- Completed construction of scaled navigation lock wall physical models and conducted related experimental testing
- Developed full-scale experimental testing on embankment dams subjected to above-ground and waterside blast loading
- Initiated and completed repairs to embankment dam to ensure integrity in preparation for the full-scale levee experiment
- Conducted experiments on physical scale models of navigation lock walls
- Constructed physical scale models of embankment dams and levees
- Conducted experiments on physical scale models of embankment dams and levees subjected to blast loading
- Identified appropriate risk assessment tools and processes for projects, administrative facilities and laboratories
- Initiated automation assessment tool efforts



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**Great Lakes Tributary Model**

SUMMARIZED FINANCIAL DATA:

Estimated Total Program Cost	\$12,500,000
Budget Request for FY 2007	900,000
Allocation Requested for FY 2008	900,000
Increase of FY 2008 from FY 2007	100,000

AUTHORIZATION: Section 516(e), Water Resources Development Act of 1996, as amended by Section 334, Water Resources Development Act of 2000.

JUSTIFICATION: Under Section 516(e) of the Water Resources Development Act of 1996, the Corps is directed to develop sediment transport models for tributaries to the Great Lakes that discharge to Federal navigation channels or Areas of Concern (AOCs). These models are being developed to assist state and local resource agencies evaluating alternatives for soil conservation and nonpoint source pollution prevention in the tributary watersheds. The ultimate goal is to support state and local measures that will reduce the loading of sediments and pollutants to navigation channels and AOCs, and thereby reduce the costs for navigation maintenance and sediment remediation. This program supports the goals of Executive Order 13340 for Great Lakes Restoration, signed by the President in May 2004 and the recommendations of the Great Lakes Regional Collaboration created under this Executive Order.

PROPOSED ACTIVITIES FOR FY 2008: FY 2008 funds will be used to continue or complete development of models at tributaries (Waukegan River, Illinois; St. Louis River, Minnesota; Grand River, Ohio; Cattaraugus Creek, New York; Niagara River, New York; Kinnickinnic River, Wisconsin, and; Fox River, Wisconsin) and continue development of Internet-based modeling tools that may be utilized by local agencies and stakeholders for sub-watershed evaluations. Districts will provide limited, follow-up technical support to state and local partners that are using models developed under this program to reduce loadings of sediments and contaminants to Great Lakes tributaries, thereby reducing future dredging requirements at Federal navigation channels and promoting the restoration of beneficial uses at Great Lakes Areas of Concern.

ACCOMPLISHMENTS IN PRIOR YEARS: Models and related watershed planning tools have been completed or will be initiated at the following tributaries (Waukegan River, Illinois; Grand Calumet River, Indiana; Trail Creek, Indiana; Burns Waterway, Indiana; Saginaw River, Michigan; St. Joseph River, Michigan; Clinton River, Michigan; Grand River, Michigan; Nemadji River, Minnesota/Wisconsin; St. Louis River, Minnesota; Buffalo River, New York; Genesee River, New York; Niagara River, New York; Cattaraugus Creek, New York; Grand River, Ohio; Augleize River, Ohio; Black River, Ohio; Mill and Cascade Creeks, Pennsylvania; Menomonee River, Wisconsin; Kinnickinnic River, Wisconsin, and; Fox River, Wisconsin). Models are being utilized by state and local governments to support decision making on: agricultural and forestry practices; development of Total Maximum Daily Loads (TMDLs) for nonpoint source pollution control; prioritization of conservation practices; management of urban development, and; design of stream restoration projects. This program has enhanced the capabilities of state and local governments to manage programs that reduce the loading of sediments and levels of contaminated in tributaries to the Great Lakes.

## Inland Waterway Navigation Charts

### SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$3,708,000
Appropriation for FY 2007	3,708,000
Allocation Requested for FY 2008	3,708,000
Increase in FY 2008 from FY 2007	0

AUTHORIZATION: PL 85-480, approved 2 July 1958, authorizes the Commander, USACE to publish information pamphlets, maps, brochures, and other material on river and harbor, flood control, and other civil works activities, including related public park and recreation facilities that may be of value to the general public.

JUSTIFICATION: This effort provides Corps' Electronic Navigational Chart (ENC) data for all inland waterways and other federal navigation channels maintained by the Corps to be used by commercial Electronic Chart Systems (ECS), which, when combined with the existing Differential Global Positioning System (DGPS), will improve the safety and efficiency of marine navigation in both inland and coastal waterways of the United States. On inland waterways, the Corps will collect more accurate survey and mapping data than is currently on its paper charts, and produce Inland Electronic Navigation Charts (IENCs) in accordance with navigation users and ECS vendors. When combined in the commercial ECS, the technology will greatly improve the safety and efficiency of navigation. This will allow safe navigation through bridge openings during fog and other bad weather conditions as well as during heavy traffic situations, and provide an accurate display for other systems such as radar and Automatic Identification Systems. The Corps will use the S-57 international data format, which is consistent with electronic chart products produced by the National Oceanic and Atmospheric Administration (NOAA), and the chart products produced by the two agencies will be coordinated for compatibility in adjoining areas. The Corps will also coordinate with the U.S. Coast Guard for aids to navigation information and collaboration on rules for chart carriage by waterway users. In coastal and Great Lakes areas, the Corps will produce standardized channel condition chart products that will provide consistent and reliable information to NOAA for chart updates, in accordance with Water Resources Development Act of 2000, Section 558. Similar channel chart products will be provided to navigation users, and these coastal and Great Lakes channel condition chart products will also follow the S-57 format. Such ENC development and publication activities are in accordance with National Transportation Safety Board recommendations to the Corps, and subsequent commitments made by the Chief of Engineers.

PROPOSED ACTIVITIES FOR FY 2008: Continue development of chart coverage for the Missouri River – 500 river miles; continue development for Tennessee River – 650 miles; update features for the Mississippi, Ohio, Arkansas, Black Warrior-Tombigbee, Cumberland, Ten-Tom, Illinois, Kanawha Rivers – 4,500 miles; complete channel framework development for 50% of coastal and Great Lakes areas; establish standard for paper charts.

ACCOMPLISHMENTS IN FY 2007: New chart development – 660 river miles: Completed initial chart coverage for the Ouachita and Arkansas Rivers; Chart revisions and updates – 5,260 river miles: Published updated chart cells for the Mississippi, Ohio, Atchafalaya, Black Warrior-Tombigbee, Tenn-Tom, Arkansas, Green, Monongahela, Illinois, Kanawha, Lower Tennessee, and Red Rivers. Compiled coastal channel Framework data, initiated paper chart standard development, and began cooperative charting activities with the U.S. Power Squadron.

Appropriation Title: Operation and Maintenance – Fiscal Year 2008

Inspection of Completed Federal Flood Control Projects (ICW)

SUMMARIZED FINANCIAL DATA:

Estimated Total Program Cost (FY2008 - FY2009)	\$ 5,000,000
Appropriation for FY 2007	0
Allocation Requested for FY 2008	\$ 1,780,000
Increase of FY 2008 over FY 2007	\$ 1,780,000

**AUTHORIZATION:** Inspection of Completed Flood Damage Reduction Projects are governed by Engineer Regulation 1130-2-530 and are essential to insure that Federally authorized flood control projects that are operated and maintained by non federal sponsors are properly maintained and operated and are functioning as constructed and intended to protect life and property and obtain the maximum intended benefits.

**JUSTIFICATION:** The Corps has constructed over 400 flood control reservoirs and over 9,000 miles of levee and flood wall systems in this country, which account for a major portion of the projects protecting communities across the nation. Many of these structures protect highly urbanized areas, and all of them require continued maintenance (either by the Federal government or Non-federal interests) after construction in order to provide the intended level of protection.

Operations and maintenance of completed Federal flood control projects and systems is a non-Federal responsibility with oversight provided by the Corps Inspection of Completed Works Program. The Corps conducts periodic inspections of completed Federal flood control works and notifies appropriate parties of the results of such inspections. The Corps' inspections are designed to determine, from visual inspections, if proper maintenance has been accomplished and that there are no obvious deficiencies. These inspections currently do not address hydrologic, hydraulic, or geotechnical issues or assess the current risk associated with the projects conditions that may require more detailed investigations or analyses to insure safe reliable protection from flood risks to public safety.

As a result, improvements to the inspection program to incorporate and provide more comprehensive technical evaluation and assessment methods during routine and periodic inspections and improve communications of the inspection results and the conditions of these projects with project sponsors and the public is necessary.

Improved coordination between the Corps and other Federal, state, and local agencies is essential for proper accomplishment of this program. In addition to satisfying Corps' requirements, the improved inspection results will be made available on the National Levee Inventory Database and will be of great value to local, State, and other Federal agencies tasked with the development and implementation of state and local Levee Safety Programs.

**PROPOSED ACTIVITIES FOR FY 2008:** Activities will include implementation of improved, standardized national inspection criteria and standards for inspections of completed projects to insure uniform, consistent evaluation and assessment of operations and maintenance activities performed by local project sponsors. Implementation of more robust technically focused periodic inspections will be performed on approximately 10% of the federal project inventory beginning in FY08 which will provide better information on project performance trends and information concerning project deficiencies and future maintenance and improvements needed by the public sponsors to insure the project perform as

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intended. FY09 will require \$ 3 million to complete implementation of these inspection program improvements. Sustainment of these inspection program improvements beyond FY09 will be included in the normal Inspection of Completed Works program requirements.

ACCOMPLISHMENTS IN PRIOR YEARS: Implementation of improved, standardized national inspection criteria and standards for inspection ratings of both federal and non-federal flood damage reduction projects have been established to insure nationally consistent evaluation and assessment of operations and maintenance activities performed by local project sponsors. Development of a more robust technical inspection process and risk assessment methodology that will provide improved assessment of the projects performance trends, deficiencies and improvements necessary to insure that projects will perform as intended. Completion of a detailed technical assessment of over 31 miles of federal projects (119) with I-wall construction to ensure I-wall stability and reliability based on lessons learned from the performance of I-wall in New Orleans during Hurricane Katrina. Conducted intensified notification and coordination with project sponsors for all federal projects that have received an unacceptable rating during the projects last inspection to insure that sponsors address and correct project deficiencies. Conducted increased coordination with FEMA regions to ensure that federal project conditions were properly identified and considered as part of FEMA's Map Modernization effort.

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**Monitoring Completed Navigation Projects (MCNP)**

**SUMMARIZED FINANCIAL DATA:**

Estimated Five-Year (FY2008-2012) Program Cost	\$ 10,000,000
Appropriation for FY 2007	1,575,000
Allocation Requested for FY 2008	1,575,000
Increase of FY 2008 over FY 2007	0

**AUTHORIZATION:** These monitoring efforts governed by **Engineer Regulation 1110-2-8151** are essential for providing data for efficient and effective management of critically important Federal shallow- and deep-draft navigation projects for both national economic and security reasons.

**JUSTIFICATION:** The Corps operates and maintains more than 800 navigation projects encompassing more than 25,000 miles of waterways. The Corps requires a national program to identify the best navigation project practices, and to use them to improve all navigation projects' performance. Optimizing Civil Works projects' performance requires that they be monitored upon completion, evaluated against preconstruction projections and present needs, and the lessons learned translated into proactive management guidance for Corps Districts. Information gained from Monitoring Completed Navigation Projects (MCNP), including changes in sediment transport, water levels, currents, waves, flushing, river flows, structure deterioration, and other coastal and river hydraulic phenomena with associated environmental impacts, will be used to verify design expectations, determine benefits, and identify operational and maintenance efficiencies. Information collected from monitored navigation projects will significantly improve projects' performance, and optimize opportunities for environmental enhancement. Information collected and analyzed on a national basis documents successful designs, disseminates lessons learned on projects with problems, and provides upgraded field guidance for solutions that will reduce life-cycle costs on a national scale.

Both shallow- and deep-draft navigation projects located in ports, harbors, rivers, reservoirs, lakes, estuaries, and in the coastal zone are included in this program. Projects that provide maximum cost savings are identified, and those that best address high-priority life-cycle O&M project cost savings are selected for monitoring and evaluation. Monitoring plans are developed jointly by Corps Districts and the US Army Engineer Research and Development Center (Coastal and Hydraulics Laboratory).

Coordination between the Corps and other Federal, state, and local agencies is essential for proper accomplishment of this program. In addition to satisfying Corps' requirements, the data are made available through publications and electronic technology transfer, and will be of great value to local, State, and other Federal agencies tasked with the development and implementation of regional and national coastal and inland navigation management policies. Results are communicated immediately to other member agencies of the Marine Transportation System (MTS).

**PROPOSED ACTIVITIES FOR FY 2008:** All monitored projects were nominated by Corps Division and District offices for inclusion in this MCNP research program.

At **Kaumalapau Harbor, HI**, breakwater where the largest CORE-LOC units ever used by the Corps (35 ton) were used to rehabilitate the structure, in situ wave measurements, wave hindcasts, and wave transformations will be performed to correlate armor unit movement with forcing functions. Breakwater settlement and armor unit movement will be ascertained by airborne laser digital terrain mapping and GPS systems with

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precision sufficient to map individual armor unit movement. Toe stability monitoring will support POH with underwater surveys using the ROV, and settlement and breakage damage will be evaluated. Strength distribution within the units will be determined by analysis of previous destructive testing results from one unit.

At **J. T. Meyers Locks and Dam, KY**, monitoring will continue of damage progression at sections not repaired where steel wall armor may become hazardous to navigation. Repaired concrete sections using expedient materials and armor strips will be intensely monitored to ascertain effectiveness of repair techniques. Efforts will focus on precise inspections to fully observe and evaluate progressive damage process and successful performance of repaired sections. Final Technical Report will be prepared.

At **John Day Lock and Dam, OR**, data analysis and final Technical Report will recommend solutions to hazardous navigation conditions resulting from combination of power house outflow and surface currents from high water passage over gates being entrained in the downstream lock entrance channel.

At **Burns Harbor, IN; Cleveland Harbor, OH; and Keweenaw Waterway, MI**, quarterly monitoring of deterioration of scaled-size test index armor units will continue. Laboratory testing will develop new protocols for armor stone selection criteria more appropriate to large breakwater armor units.

**Periodic Inspections** will publish Technical Report on Lidar and field inspections of west coast jetties. Will survey Alaskan coastal structures using Lidar accompanied by field inspections; will update the e-coastal GIS interface and add periodic inspection data; and will coordinate with other research program work units revising Condition Index System for USACE Asset Management.

At **Montgomery Point Lock and Dam, AR**, acoustic doppler current meters, video cameras, strain gages, seismometers, and wireless telemetry systems will be installed to transmit real-time data to ERDC for analysis so that modification techniques and operating procedures can be developed to eliminate hazardous navigation conditions at low water. Results will be applicable to other lock and dams with similar low flow conditions.

**ACCOMPLISHMENTS IN PRIOR YEARS:** In FY 2007, four Technical Reports were published and disseminated to Corps Field Operating Activities, with improved, updated, and enhanced design guidance.

At **Kaumalapau Harbor, HI**, wave hindcasts were acquired offshore of the breakwater and wave data were collected from buoys. Deepwater waves from the hindcasts were transformed into shallow water, and an electronic transformation look-up table was developed. The first post-rehabilitation onsite inspection of completed 35-ton CORE-LOC breakwater to document the as-built condition was conducted. In situ non-destructive testing of selected CORE-LOC units placed on the breakwater during rehabilitation was performed to document strength variations due to aging and location in the wet/dry zones. Destructive testing of one CORE-LOC unit was performed to better understand internal unit stresses.

At **J. T. Myers Locks and Dam, KY**, damage surveys were conducted to document any additional damage and performance of the FY06 repairs to the lock wall armor. Innovative wall armor repair techniques were developed and applied to the damaged sections without interruption of navigation operations. New vertical wall armor test strips were developed using innovative techniques. Photographic and non-destructive testing was performed to provide durability data for correlation with lock traffic.

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At **John Day Lock and Dam, OR**, monitoring video, velocity, and discharge data collection were completed. Video, velocity, and discharge data were analyzed to understand the mechanism by which hazardous velocity conditions exist at times, due to entrainment of flow from the powerhouse to the spillway as a result of fish passage improvements. A draft Technical Report was prepared describing physical and operational changes necessary to alleviate the dangerous navigation conditions under certain river conditions.

At **Burns Harbor, IN; Cleveland Harbor, OH; and Keweenaw Waterway, MI**, monitoring data were obtained and analyzed quarterly, to evaluate effects of freeze/thaw and wet/dry conditions on scaled-size test index armor units. Evaluated present testing methods and protocols to determine breakwater armor stone acceptance methodology more appropriate to large stone units. Prototype monitoring data were correlated with laboratory analyses of identical samples from various local quarries.

**Periodic Inspections** published LIDAR inspection reports on Burns Harbor and Cleveland Harbor breakwaters, and performed field inspections and LIDAR surveys of Pacific coastline jetties.

**Montgomery Point Lock and Dam, AR**, experiences difficult and hazardous navigation conditions particularly during low water conditions. A comprehensive monitoring plan was developed to investigate all problem aspects, including overflow spillway stone protection, sedimentation, lock approaches, forces on crest gates, impact loads on floating guide walls, and seismic response of this soil founded structure. Solutions developed at this location will be directly applicable to other similar low water hazardous conditions on the Ohio and Mississippi River systems.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2008

**National Coastal Mapping Program**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$2,400,000
Allocation for FY 2007	2,400,000
Allocation Requested for FY 2008	4,000,000
Increase of FY 2008 over FY 2007	1,600,000

AUTHORIZATION: These efforts are essential to providing data for efficient and effective management of critically important National water resources. Regional Sediment Management (RSM) activities are authorized by Section 516 of WRDA 96.

JUSTIFICATION: This is the only Federal coastal mapping program that produces regional, operational, physical and environmental data along the coast on a recurring basis. Regional Sediment Management requires regional measuring and monitoring to provide data and information for decision makers and managers. There are approximately 7,500 miles of sandy coastline in the continental US and no other program in the Corps (or other Federal agencies) provides consistent, recurring, regional data to measure and monitor physical and environmental conditions and their changes over time. It is the quantification of regional conditions and changes that will lead to improved management practices of entire regions and projects within those regions. Without these data, the Corps cannot fulfill its goal of a systems approach to coastal management, including navigation and coastal flood damage reduction projects.

PROPOSED ACTIVITIES FOR FY 2008: The program will complete Lake Superior in the Great Lakes and begin surveying the Pacific Coasts of Washington, Oregon, and California (approximately 1,000 miles of shore total). The surveys, covering about a one-mile wide swath along the coast, will produce standardized regional sediment mapping products, including digital water depths, land elevations, high resolution imagery, shoreline position, sea-bottom type, wetland delineation, submerged aquatic vegetation, water clarity, and land use inventory. These products will be provided for use with GIS based tools to support regional sediment management decisions and project operation and maintenance.

ACCOMPLISHMENTS IN PRIOR YEARS: In 2004 the first year of the Corps national coastal mapping effort, the Corps' South Atlantic Division's sandy beaches were mapped (approx 1,300 miles) to support Regional Sediment Management (RSM) practices using airborne lidar and photogrammetry systems. A total of 1,300 miles of the sandy coasts of Mississippi, Alabama, Florida, Georgia, South Carolina and North Carolina were surveyed. The Corps coordinated with other Federal agencies (Navy, NASA, USGS, and NOAA) to eliminate duplication and leverage programs to maximize survey coverage. This coordination was very successful and has resulted in very close and continuing coordination since 2004. The RSM survey covers from the waterline landward 500 m using topographic lidar and from the waterline seaward using hydrographic lidar. The same area is covered concurrently with very high resolution imagery. Products included seamless digital elevations of the coastal zone, orthorectified imagery, a shoreline position vector, and metadata. These data were distributed to the Corps Wilmington, Charleston, Savannah, Jacksonville, and Mobile Districts. Data were also provided to several States, academia, and industry and to USGS and NOAA where it remains available for download through Federal data archives. This first mapping effort was completed six weeks prior to the first storm of the 2004 hurricane season. These data provided the most complete regional data ever collected, including Federal navigation and shore protection projects, immediately prior to four major hurricanes striking Florida and Alabama. As a result of the multi-agency coordination we produced pre-storm surveys and post-storms surveys coordinated with Navy, NASA and USGS to eliminate duplication. These data were used to assess regional and project hurricane impacts and provided necessary data for planning, engineering, construction and operations. Approximately \$200 million was spent reconstructing shore protection projects based on results determined from these RSM coastal mapping data. State, local, industry and academic organizations are using these data for many coastal management applications, projects and programs.



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In 2005 approximately 1,000 miles of the sandy beaches bordering the Atlantic Ocean were mapped, including Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, and Virginia with the same approach, producing a variety of digital elevation products for regional sediment management actions in the Corps Norfolk, Baltimore, Philadelphia, New York and New England Districts. A few new standardized products were created based on lessons learned from the 2004 season and use of the data by the Corps of Engineers, including bare earth modes and extraction of building footprints, both needed to assess the impacts of hurricanes and coastal storms. These data are available through the Corps, USGS, and NOAA. The NOAA lidar data website alone has recorded 770 downloads totaling 11 billion points. These data are not only supporting the Corps of Engineers, but other Federal, State, and local governments, academia, and industry.

In 2006 approximately 1,000 miles of open lake coasts were mapped with the same approach used in prior years, producing the same standardized products and information for regional sediment management actions and Federal project O&M. The surveys covered Lake Erie and the Pennsylvania, Ohio, and Michigan shores; Lakes St. Clair and Huron; and about 200 miles into Lake Michigan and additional Michigan shore. In addition to the physical conditions previously described, new techniques were developed by teaming with NAVO, USGS, NOAA, industry, and academia that yield information about the environment. For the first time, a hyperspectral imager has been fused with a lidar bathymeter and used operationally to quantify wetlands, submerged aquatic vegetation, sea-bottom type, water quality parameters, and land use. This is the first year where standardized environmental products are being produced for measuring and monitoring regional environmental impacts and changes from our regional sediment management practices. These capabilities were used immediately following Hurricane Katrina to assess the impact of the National Disaster and to base line conditions for both physical and wetland recovers. These data were also used in the Corps of Engineers IPET study to aid in analysis.

In 2007 the National Coastal Mapping Program will complete the Great Lakes, surveying Lake Ontario, the remainder of Lake Michigan and Lake Superior, approximately 1,000 miles. The same standard products will be produced and disseminated to the Corps District offices as well as to NOAA and USGS for dissemination nationally. The National Coastal Mapping Program will continue very close coordination with other Federal agencies collecting these types of data, both through the program and as a Co-Chair on the Interagency Working Group for Ocean and Coastal Mapping (IWG-OCM) under the JSOST.

## National Dam Safety Program – Portfolio Risk Assessment

### SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost for Continuing Program	\$10,000,000
Appropriation for FY 2007	6,300,000
Allocation Requested for FY 2008	10,000,000
Change in FY 2008 from FY 2007	3,700,000

AUTHORIZATION: Dam safety legislation PL 92-367 and PL 99-662, and the National Dam Safety Program Act (Section 215 of PL 104-303) and the Dam Safety Act of 2006 (Public Law 109 – 460).

JUSTIFICATION: The *Federal Guidelines for Dam Safety* provides a framework for safe construction, operation, and maintenance of Corps dams. Dams in the United States must be constructed, operated, and maintained in accordance with sound engineering practices to prevent failure and avoid potential loss of life and destruction of property. This National Dam Safety Program (NDSP) account consists of two parts: (1) the operation of the NDSP including participation with other agencies; and (2) implementation of a portfolio risk analysis program for all 605 of the Corps dams.

(1) The NDSP was established to enhance national dam safety. These funds support the activities under the NDSP, in the interests of the Corps and the citizens of the Nation. The National Dam Safety Program Act strengthens the NDSP, whose purpose is to reduce risks to life and property from dam failure in the United States. The Act also codified the Interagency Committee of Dam Safety (ICODS) to coordinate the Federal actions under the NDSP. The Chief, Engineering and Construction, Directorate of Civil Works (USACE, Dam Safety Officer), or his representative, represents the Department of Defense as a member of ICODS. The Corps also provides a representative to the National Dam Safety Review Board for the Secretary of Defense. The National Dam Safety Program Act expanded the scope of previous dam safety legislation and the requirements for ICODS participation with various states to improve dam safety in the United States. Through ICODS, the NDSP provides support in development of federal guidelines for dam safety, promotion of public awareness programs, publications, training materials, and workshops. The Act also provides for archival research that is supported by Federal dam owning agencies through ICODS and the National Performance of Dams Program. The Dam Safety Act of 2006 extended the National Dam Safety Program Act appropriation authorization for 4 years.

(2) Many Corps dams have a high dam-safety risk due to the likelihood of extremely large floods, seismic events, seepage and piping problems, and other damages and/or deterioration problems. Limited budgets require that the Corps uses risk assessment as a central part of the decision-making process to direct funding to those dam safety issues presenting the greatest risk and uncertainty and to those rehabilitation actions that result in the greatest risk reduction for their cost. For each dam in the portfolio, the risk assessment provides estimates of the probability of failure and consequences by each initiating event. In addition, risk reduction measures are formulated and their cost and effectiveness estimated. The results arrayed by risk level and risk reduction cost effectiveness provide a risk ranking for the portfolio of dams. The values of the portfolio risk assessment (PRA) have been demonstrated in two Corps districts as a part of the on-going R&D efforts. In order to expedite the deployment of Corps-wide portfolio risk assessment and to ensure that the results of the regional and districts portfolio provide a consistent basis for setting national priorities, three USACE PRA cadres have been conducting a screening level PRA during fiscal years 2005, 2006, and 2007. The requested funding is to support the activities to complete the screening level PRA and move forward with an in-depth portfolio analysis of the dams that present the greatest risk.

#### PROPOSED ACTIVITIES FOR FY 2008:

(1) The NDSP account provides effective coordination of dam safety activities across the various regions of the Corps and provides for Corps participation at national dam safety events. The account also provides for District participation on the National Dam Safety Management Team, which advises the Corps Dam Safety Officer on safety of dams policy. The NDSP supports Corps membership and participation in various national and international dams organizations including the Association of State Dam Safety Officials (ASDSO), the US Society on Dams (USSD) and the Dam Safety Interest Group (DSIG). The USSD along with its international counterpart, the International Committee on Large Dams (ICOLD) supports technical knowledge concerning the benefits, engineering, design, and construction of dams. The NDSP fund special briefings for Congressional interests on the safety of dams and the coordination of safety of dams with other federal agencies.

(2) Three USACE National PRA cadres and a national PRA manager will manage the Corps-wide PRA efforts. The members of the cadre will be technical experts within their discipline and will be experienced in dam safety, risk analysis, and the application of probability methods to civil works infrastructure. During FY 2008 the cadres will complete the initial screening level (S)PRA of the Corps dams. The procedures for moving to the next level of analysis will be completed and a detail PRA will be completed on the highest risk dams as previously identified by the screening level PRA's. The results of the screening PRA's will be used in the development of study plans for inclusion in the regular budget cycles and the same results will be used in prioritizing requests for remediation. The database of information from the PRA will be linked to the existing Dam Safety Program Management Tools (DSPMT) and the Operations & Maintenance Budget Information Link (OMBIL) to maximize the use of the information developed.

(3) The national risk efforts also include a national policy and procedures team which develops the guidance, processes, and recommendations that accompany and support the SPRA and PRA assessments. During FY 2008, the policy team will develop two new actions which include the development of standards and decision matrices for prioritizing the routine dam safety related activities (other than studies and remedial fixes) that are funded out of Operations and Maintenance account and have been identified as data gaps in on-going risk assessments. Routine activities include: Instrumentation Readings and Analysis, Sedimentation Studies, Emergency Action Plan Updates, Inundation Map Updates, Seismic Reevaluations, Hydrologic Reevaluations, Hydraulic Steel Structures, Periodic Inspections, Water Control Management Studies, and O&M Manual Updates. The second major activity is the prioritized assignment and execution of beta tests for collecting data in a more efficient and effective manner on those projects that pose the most uncertainty and highest risks.

#### ACCOMPLISHMENTS IN PRIOR YEARS:

(1) The NDSP account provided Corps presentations at the United States Society of Dams (USSD) conference and the Association of State Dam Safety Officials (ASDSO) during FY05 and FY06. This account also supported the Corps response to the 9-11 events in the safety of dams area. The NDSP program account provided field participation in preparing responses to the recommendations of the Corps Peer Review of the Dam Safety Program. Additional funds provide for continued development of the Dam Safety Program Management Tools (DSPMT) and the Dam Safety Program Performance Measures (DSPPM). Both programs are being developed along with the Interagency Committee on Dam Safety (ICODS) to improve both Federal and State safety of dams programs.

(2) The Portfolio Risk Assessment portion of this account FY07, along with initial work has been accomplished during FY05 and FY06 as a centrally funded activity, has completed initial screening analysis of 200 Corps dams. This work included the selection and training of the PRA cadres and the initial screening of over 30 percent of the Corps dams. The results of this work are being used in prioritizing the remediation of dams.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2008

**Nationwide (Multiple Project) Natural Resources Management Activities**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost for Continuing Program	\$2,700,000
Appropriation for FY 2007	3,296,000
Allocation Requested for FY 2008	3,296,000
Increase in FY 2008 from FY 2007	0

AUTHORIZATION: This program is conducted under the general authority of PL 78-534, the Flood Control Act of 1944 (58 Stat. 887).

JUSTIFICATION: On December 10, 1996, House and Senate appropriations subcommittee staff determined it was appropriate to allocate a portion of Civil Works projects appropriated funds to conduct certain, specified operations and maintenance activities that benefit all or a majority of operating Civil Works projects. This determination was formalized in appropriations language in FY 2002. Funding these multiple project activities as single entities, rather than on a project-by-project basis, is efficient and cost effective, reducing administration costs and providing for efficient management and oversight. An example of such an activity is the procurement of park ranger uniforms through a contract administered by the National Park Service. Providing a nationwide funding source for centralized procurement of these items used by all operating projects having a natural resources management program precludes the need for funds to be transferred by each project or district to a single procurement agent, a savings of from 60 to 300 transactions a year.

PROPOSED ACTIVITIES FOR FY 2008:

Nationwide (multiple-project) activities that will be accomplished in FY 2008 with these funds include the following activities:

1. Environmental Management System (EMS) Implementation. The EMS has been implemented at 36 designated projects, with 3 more projects scheduled for implementation in FY07. Funding this as a nationwide activity will allow us to form and train a team of USACE EMS auditors to review and validate EMS implementation completion at required facilities without transferring funds from each project to a central source. The development of case studies and outreach materials for lessons learned provide initiative and support for other facilities/projects wishing to implement EMS in FY08 and future years.
2. Natural Resources Management Career Development/Training Support and Material Development. Funds are used to address training and career development issues for the Natural Resources Management Community. The needs of all 2,000 NRM field staff in the Corps are served through the development of numerous products, including a number of exportable training courses to meet established training requirements. Funding this as a nationwide activity is appropriate because all NRM field staff benefit equally from the work accomplished.
3. Park Ranger/Manager Uniforms. The Corps purchases uniforms for field personnel through an inter-agency contract administered by the National Park Service. Funding this as an inter-agency effort and as a nationwide activity reduces the administrative costs by eliminating the requirement to transfer funds from each individual project to the NPS. Significant economies of scale have been achieved through this arrangement since 1984. Costs include the authorized employee allowance funds (including an HQ-approved increase in replacement allowance), NPS contract administration costs, buy out of discontinued items, program management/committee support, and the purchase of required emblems.

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4. Printing and Publishing - Printing of forms, brochures, and similar materials used by all Corps projects achieves economies of scale and reductions in total administrative and procurement costs. Materials include Annual Day Use Passes and Golden Age and Access Passports and Brochures. Printed materials are stored at the Corps Publications Depot for distribution to all projects upon request.
5. Sign Standards Manual and Software Update and MCX Operation. A Mandatory Center of Expertise provides technical support and assistance to all projects in the operation of the Corps Sign Standards Program, through the maintenance of the Sign Standards Program Manual and software and providing technical assistance to field users. These efforts allow the Corps to maintain a consistent image that we present to the visiting public. Funding this as a nationwide activity assures competent and timely assistance to users, which increases the consistency, effectiveness and efficiency of the sign program.
6. Volunteer Clearinghouse Operation. The Volunteer Clearinghouse is operated under contract with Goodwill Industries to support volunteer efforts at all Corps projects. Funding this as a nationwide activity achieves economies of scale through the use of a single contract and reduces administrative costs by eliminating the need to transfer funds from all projects to the single contracting element.
7. Water Safety Products. The Corps Water Safety National Operating Center produces and distributes water safety products and programs to all Corps projects. Products educate and inform visitors of the dangers associated with water-oriented recreation. Significant economies of scale have been realized through the centralized administration of this program that assures current and critical topics are covered, using effective media targeted to high-risk groups. Drownings and associated lawsuits have been reduced significantly since the implementation of this program in the mid 1980's. Current command emphasis is requiring an even further reduction of fatalities during the next two years.
8. Other Nationwide NRM Activities. The following additional NRM Activities are recommended for funding to achieve cost efficiencies at the national level. Funding for these activities remains the same as FY 2007: Challenge Partnership Seed Funds; Critical Incident Stress Management (CISM) Program; Natural Resources Management Awards; Operations CoP Gateway; Partnership Advisory Committee; Property Protection Program; RecBEST Coach, Assist and Train Team; Recreation Facilities and Customer Service Standards National Operations Center; Visitor Center Initiative/Corps Story; Bilingual Support Team.

ACCOMPLISHMENTS IN PRIOR YEARS: The allocation of project operations and maintenance funds to conduct specified nationwide (multiple-project) activities to improve the efficiency and cost effectiveness of the Corps NRM program has been employed, with subcommittee staff knowledge and concurrence, since the early 1990s for activities similar to those identified for FY 2008.

**Program Development Technical Support (ABS-P2))**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$300,000
Appropriation for FY 2007	300,000
Allocation Requested for FY 2008	300,000
Change in FY 2008 from FY 2007	0

AUTHORIZATION: The Automated Budget System (ABS) has supported gathering, analyzing and submitting project funding requests to respond to all authorized missions within the Corps Operations and Maintenance program. A new automated information system, P2, has replaced ABS for the FY2008 budget process. The transition to P2 from ABS has begun the alignment of all Civil Works budget requests within one automated information system.

JUSTIFICATION: The budget estimate provides for carrying out the following work:

The new AIS, P2 provides the program development capability previously provided by ABS. The transition to P2 from ABS for program development began in FY 2007 and will continue in FY 2008. Work under this activity for FY 2008 will ensure that all relevant business processes and rules within ABS are incorporated into P2. All O&M project data within P2 will be examined as well. There will likely be changes needed to adjust P2 to support the O&M program development based on the initial experiences with the new system. This activity will identify needed changes and recommend steps to implement the changes within P2. The technical support for O&M program development will continue to be provided using P2 rather than ABS tools. The deployment of P2 will shift the efforts here towards development of methods and procedures for setting priorities for all civil works activities and analysis of the entire Civil Works program.

PROPOSED ACTIVITIES FOR FY 2008: Assist O&M program development as supported by P2 for BY 2008. Identify needed changes and recommend steps to implement changes in P2. Develop program development procedures to support the entire Civil Works program development.

ACCOMPLISHMENTS IN PRIOR YEARS: Maintained and updated the software systems, provided new tools to generate reports, provided training and support to managers. Developed program development tools within P2 for BY 2008.

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**Protection of Navigation (Four Items)**

**Protection, Clearing, and Straightening of Channels  
Removal of Sunken Vessels  
Waterborne Commerce Statistics  
Harbor Maintenance Fee Data Collection**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost of Continuing Program	\$6,365,000
Allocation for FY 2007	5,541,000
Allocation Requested for FY 2008	5,541,000
Change in FY 2008 from FY 2007	0

AUTHORIZATION:

Protection, Clearing, and Straightening of Channels - Section 3 of the 1945 River and Harbor Act (as amended by Section 915 (g) of the 1986 Water Resources Development Act) provides continuing authority for limited emergency clearing of navigation channels not specifically authorized by Congress.

Removal of Sunken Vessels - Removal of sunken vessels, or other similar obstructions, is governed by Sections 15, 19, and 20 of the River and Harbor Act of 1899, as amended.

Waterborne Commerce Statistics - The USACE serves as the Federal Central Collection Agency, and is the sole U.S. Government source for U.S. domestic and foreign (U.S. foreign waterborne commerce statistics mission transferred to USACE from Census in FY 1999) waterborne commerce and vessel statistics in conformance with the River and Harbor Act of 1922 as amended.

Harbor Maintenance Fee Data Collection - PL 103-182

JUSTIFICATION: The budget estimate provides for carrying out the following work:

- a. Protection, Clearing, and Straightening of Channels - Work is undertaken as emergency measures to clear or remove unreasonable obstructions to navigation in navigable portions of rivers, harbors and other waterways of the U.S., or tributaries thereof, in order to provide existing traffic with immediate and significant benefit. The amount requested is an estimate based on historical experience. If actual requirements are more than estimated, funds will be reprogrammed to meet demonstrated needs.
- b. Removal of Sunken Vessels - Primary responsibility for removal belongs to the owner, operator, or lessee. If the obstruction is a hazard to navigation and removal is not undertaken promptly and diligently, the Corps may obtain a court judgment requiring removal, or remove the wreck and seek reimbursement for the full cost of removal and disposal. Determinations of hazards to navigation and Federal marking and removal actions are coordinated with the United States Coast Guard in accordance with a memorandum of understanding between the two agencies dated

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16 October 1985. Removal procedures are outlined in 33 CFR 245. If removal requirements are more than estimated, funds will be reprogrammed to meet actual needs.

c. Waterborne Commerce Statistics - The data provide essential information for navigation project investment analyses and annual funding prioritization for operations and maintenance of existing projects; as project output information for computation of performance measures; for input into the U.S. National Accounts; and for regulatory, emergency management decisions, and homeland defense. Activities supporting this national statistics mission include: (1) collecting and reporting (includes enforcement role) of water transportation statistical data; (2) automated systems development and operation (transactional systems within Operations and Maintenance corporate information system), processing, compiling, and publishing statistical data and information on waterborne commerce and vessels moving on the internal U.S. waterways, the Great Lakes, and through all U.S. ocean channels and ports; and (3) compiling and publishing the official U.S. documentation of U.S. vessels engaged in commerce, their principal trades and zones of operation. This item is reported under OMBIL-Plus in ITIPS and is \$1,600,000 of the total OMBIL-Plus cost.

d. Harbor Maintenance Fee Data Collection - Up to \$5 million is authorized to be used annually for the administration of the Harbor Maintenance Trust Fund. Most of these funds are used by Customs. The Corps is required to collect data on domestic and foreign shippers of waterborne commerce subject to the Harbor Maintenance Tax (HMT) and provide it to Customs for enforcement and audit purposes. Analysis of Harbor Maintenance Trust Fund (HMTF) revenues and transfers is required to validate the adequacy of the HMTF in light of the uncertainty over the legal and international challenges to the HMT, to document the operation of the trust fund, and to prepare and distribute the *Annual Report to Congress on the Status of the Harbor Maintenance Trust Fund*. Analysis of waterborne commerce shipments and vessel movement data is also needed to respond to legal questions to the HMT; to analyze alternative funding options; and to assess the economic and competitiveness impacts of other potential funding sources. Therefore the Corps requires a portion of the administrative funding. Funds will also be used to modify computer programs to conform to changes dictated by Customs' Automated Commercial Environment. This item is reported in OMBIL-Plus in ITIPS and is \$344,341 of the total OMBIL-Plus cost.

FUNDING PROFILE

	<u>Actual FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>
(d) Harbor Maintenance Fee Data Collection	\$ 541,000	\$ 725,000	\$ 725,000
(a) Protection, Clearing, and Straightening of Channels	\$ 0	\$ 45,000	\$ 50,000
(b) Removal of Sunken Vessels	\$ 767,000	\$ 500,000	\$ 500,000
(c) Waterborne Commerce Statistics	\$ 3,804,000	\$ 4,271,000	\$ 4,271,000
TOTAL	\$ 5,112,000	\$ 5,541,000	\$ 5,541,000

PROPOSED ACTIVITIES FOR FY 2008: Provide navigation project output data for FY 2009 budget formulation. Perform operations, maintenance and necessary enhancements of nation's waterborne commerce, vessel and shipper data and statistics programs. Work with shippers and carriers to insure enhanced operations at a minimum level of burden. Assist Customs with the development of their Customs Modernization Program to ensure that the Corps' foreign waterborne transportation data needs will be met by the new Automated Commercial Environment/International Trade Data System. Work with other Federal agencies and industry to design a new modern, comprehensive automated domestic waterborne data collection system.



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ACCOMPLISHMENTS IN PRIOR YEARS: Within constrained budgets worked to maintain FY 2005 data quality and completeness. Provided navigation project output data for FY 2008 budget formulation. Worked with Federal partners, such as U.S. Customs and with industry to ensure data continuity. Emphasized automation of domestic data reporting. Removed the sunken vessel “State of Pennsylvania” from the Christina River in Delaware in accordance with Appropriation Act language.

APPROPRIATION TITLE: Operation and Maintenance, General -- Fiscal Year 2008

**RecreationOneStop (R1S)– National Recreation Reservation Service (NRRS)**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost for Continuing Program	\$1,130,000
Appropriation for FY 2007	1,130,000
Allocation Requested for FY 2008	1,130,000
Increase of FY 2008 from FY 2007	0

AUTHORIZATION: This program is conducted under the general authority of PL 78-534, the Flood Control Act of 1944 (58 Stat. 887).

JUSTIFICATION: At the direction of Office of Management and Budget (OMB), NRRS and Volunteer.gov was combined and is now under the umbrella of RecreationOneStop, a priority Egov initiative on the President's Management Agenda. Also, at OMB's direction, a new NRRS contract was awarded to provide comprehensive services for RecreationOneStop to include a portal for public recreation information services, trip planning and reservations. The USDA Forest Service administers the contract, which services the needs of the Forest Service, the Corps and the Department of Interior (DOI) agencies. The DOI serves as the Managing Partner for RecreationOneStop.

PROPOSED ACTIVITIES FOR FY 2008: Funding the costs for RecreationOneStop, include (1) Corps NRRS management costs, comprising appropriate salary, travel and per diem for Corps COTR, CATT Coordinator, Inventory and Marketing Team leaders and Resource Management assistance, (2) NRRS Contract Management Office (NCMO) costs. Funds paid to the Forest Service for administering the NRRS contract and operating the NCMO, and (3) Corps NRRS information management support services. Funds paid to Portland District for telecommunication support. There are no Volunteer.gov costs in FY07 and none expected in FY08. However, there may be a cost in the future to support this interagency website.

ACCOMPLISHMENTS IN PRIOR YEARS: The NRRS has been providing reservation services for the Corps and the Forest Service since 1999. In FY06 this program provided management oversight of NRRS contract with Reserve America processing over \$30 million in fee revenue for the Corps. Also established was an interagency portal for public recreation information services under the Recreation One-Stop initiative.

Appropriation Title: Operation and Maintenance – Fiscal Year 2008

**Regional Sediment Management Program (RSM)**

SUMMARIZED FINANCIAL DATA:

	<u>Ceiling</u>
Estimated Total Program Cost	\$30,000,000
Allocation for FY 2007	1,391,000
Allocation Requested for FY 2008	1,391,000
Decrease of FY 2008 from FY 2007	0

AUTHORIZATION: Section 516 of WRDA 96 authorizes the development of long-term strategies for the management and control of sediments through studies and operational activities.

JUSTIFICATION: The RSM Program objectives are to establish regional management strategies that link the sediment management actions at authorized Corps projects with one another, coordinate management activities with other Federal agencies, State, and local governments, and leverage data collection within regional systems including inland watersheds, rivers, estuaries, and the coast. The goal is to demonstrate short- and long-term cost savings and increased economic and environmental benefits through management of sediments from a regional perspective.

PROPOSED ACTIVITIES FOR FY 2008: Continue implementation of RSM through support to Districts and Divisions to include: technology transfer of eCoastal GIS data management capabilities and operational expertise, conduct sediment inventory and sediment needs assessment for Long Island, NY, formulate Conceptual Model and Habitat Evaluation Procedure to document National Ecosystem Restoration benefits associated with coastal sediment management actions, refine the southwest Florida sediment budget by focusing on Big Sarasota Pass and continue development of the northeast Florida sediment budget to encompass the Central Atlantic region of the state, and conduct sediment transport modeling for the Lower Green River and Duwamish estuary to predict the regional redistribution of sediments and environmental benefits and impacts due to reservoir drawdowns.

ACCOMPLISHMENTS IN FY 2007: All Corps Division Offices (within the U.S.) continued implementation of regional sediment management initiatives at the Division level and through their respective District offices and formalized processes through Program Management Plans. The program will continued to foster stakeholder relationships and educating through online knowledge sharing and technology access. The program established a national RSM eGIS team to provide leadership in continuing development and implementation of an enterprise GIS and tools for data analysis and decision making. The program developed comprehensive regional sediment management strategies to guide investment decisions and present the economic, environmental, and social benefits achieved through RSM. Information and capabilities were disseminated via online training, onsite workshops, and websites.

Appropriation Title: Operation and Maintenance – Fiscal Year 2008

**Reliability Models Program For Major Rehabilitation**

SUMMARIZED FINANCIAL DATA:

Estimated Annual Cost for Continuing Program	\$650,000
Appropriation for FY 2007	599,000
Allocation Requested for FY 2008	608,000
Increase of FY 2008 from FY 2007	9,000

JUSTIFICATION: The purpose of this program is to respond to yearly needs of Districts and Divisions that are preparing Major Rehabilitation reports for the upcoming fiscal year. The objective of the program is to provide reliability models for project features or components that are being considered for Major Rehabilitation, or to provide procedures to consider the impact of various chemical, environmental or physical processes in a reliability analysis.

PROPOSED ACTIVITIES FOR FY 2007: The requested funds will be used to prepare reliability models and collect data for reliability analyses anticipated to be required by several Districts. Reliability models and/or data are anticipated to be needed for the following: Testing of a reliability model for seepage through embankment dams and levees will continue; Begin testing of a reliability model for floodwall stability; Continue evaluation of data collected on performance of dam gates, to determine performance modes and verify load cycles used in reliability analyses, and electrical/mechanical systems model for locks and dams. Continue joint effort with USGS, Argonne National Labs, Kansas Geological Survey and USACE to process and compare geophysical data taken by various methods on different projects including quantify the variation in geotechnical models for major rehab. Begin collecting data for reliability models for timber piles and crib walls for navigation structures. Provide reliability analysis procedures for additional selected hydropower equipment. It is also anticipated that two rehabilitation workshops would be conducted. The makeup of these units is subject to the needs of the respective Districts and Divisions.

ACCOMPLISHMENTS IN PRIOR YEARS: Reliability models and other analytical tools have been provided in support of Major Rehabilitation reports on numerous navigation and hydropower projects. In addition, +20 rehabilitation workshops have been conducted in the last 10 years to provide assistance to the Districts as they prepare their reports. These workshops offer guidance in conducting reliability and risk analyses, and provide the opportunity for interdisciplinary teams from the Districts to discuss their particular project with HQUSACE and other Districts personnel. In FY05 the Concrete Deterioration model for Lock Walls and the economic consequences will be finalized through a series of expert elicitation workshop which began in late FY04. These models will be applied to a district lock wall to aid in the Major Rehab Program justification. Two rehabilitation workshops were conducted.

Appropriation Title: Operation and Maintenance – Fiscal Year 2008

**Water Operations Technical Support (WOTS)**

<u>SUMMARIZED FINANCIAL DATA:</u>	<u>Ceiling</u>	<u>Recommended Capability</u>	
Estimated Annual Cost for Continuing Program	\$1,500,000		
Allocation for FY 2007	653,000		
Allocation Requested for FY 2008	653,000	\$ 1,000,000	\$ 1,200,000
Increase of FY 2008 from FY 2007	0		

AUTHORIZATION: These efforts are necessary to provide support for the restoration and management of Federal water resources.

JUSTIFICATION: Maintaining the high quality environmental and water quality conditions at 562 Corps reservoirs (5,500,000 surface acres), 237 navigation locks, 926 harbors, 75 hydropower projects, and 25,000 miles of inland and coastal waterways requires compliance with numerous statutes and state standards. Providing the technology and knowledge base necessary to broadly address environmental requirements in accordance with laws and regulations can best be accomplished through a comprehensive centralized program that will maximize cost effectiveness, and ensure broad dissemination and implementation of technology and information.

PROPOSED ACTIVITIES FOR FY 2008: The WOTS Program is expanding as environmental conditions at Corps project sites continue to deteriorate. The program will continue to provide effective environmental and water quality management technologies to address a wide range of issues at Corps reservoir and waterway projects, and in river systems nationwide. The program will provide technology to address: problems caused by aquatic invasive species; water quality impacts of land-use, sediment and nutrient loadings, erosion, and reservoir sedimentation; tailwater fisheries concerns at pump-back hydropower projects; and project operations related to environmental and water quality issues. WOTS will provide technical support to the Corps' mission-related project responsibilities, with special emphasis on the transfer of technology. The program will ensure that the technologies developed by the Corps and other Federal agencies are current and readily available to all Corps field offices. The effective use of technologies will be secured through direct technical assistance, specialty workshops, information bulletins, technical notes, executive notes, technical reports, miscellaneous papers, instruction manuals, videos, meetings, seminars, briefings, congressional testimony, and the Internet.

ACCOMPLISHMENTS IN FY 2007: Since its inception in FY 1985, WOTS has provided environmental and water quality technological solutions to over 1,500 problems identified at projects from every Corps District. The WOTS program annually conducts specialty workshops to train personnel on the latest environmental and water quality management techniques; and publishes and distributes numerous copies of manuals, bulletins, notes, and reports. In FY 2007, the WOTS program successfully responded to over 50 direct technical assistance requests from 26 Corps Districts, conducted six training workshops on environmental and water quality management techniques, conducted two technology demonstration efforts to verify management strategies and techniques, and prepared three technical publications for distribution to the field. A continual endeavor of the WOTS program is coordination with water quality and environmental elements of other Federal agencies such as the Environmental Protection Agency, U.S. Department of Agriculture, Bureau of Reclamation, Fish and Wildlife Service, U.S. Geological Survey, Tennessee Valley Authority, and the Bonneville Power Administration. These efforts have involved problems related to the introduction and spread of aquatic invasive species, watershed management activities, environmental impacts of hydropower facilities, and impacts of water releases in tailwater areas on fisheries.

PROJECT	TYPE OF PROJECT	SURVEYS	PRECONSTRUCTION ENGINEERING & DESIGN	CONSTRUCTION
ILLINOIS				
CHAIN OF ROCKS CANAL, MISSISSIPPI RIVER, IL (DEF CORR)	N			4,500,000
CHICAGO SANITARY AND SHIP CANAL DISPERSAL BARRIER, IL	E			750,000
CHICAGO SANITARY AND SHIP CANAL, SECOND BARRIER, IL	E			6,900,000
CHICAGO SHORELINE, IL	SP			9,000,000
DES PLAINES RIVER, IL	FDP			6,620,000
EAST ST LOUIS, IL	FDP			2,500,000
GREAT LAKES NAV SYST STUDY, MI, IL, IN, MN, NY, OH, PA & WI (SEE MICHIGAN)				
ILLINOIS RIVER BASIN RESTORATION, IL	E	400,000		
ILLINOIS WATERWAY, LOCKPORT LOCK AND DAM, IL (SEEPAGE)	N			20,445,000
MCCOOK AND THORNTON RESERVOIRS, IL	FDP			33,500,000
MISS RIVER BTWN THE OHIO AND MO RIVERS (REG WORKS), MO & IL (SEE MISSOURI)				
OLMSTED LOCKS AND DAM, OHIO RIVER, IL & KY	N			104,000,000
UPPER MISSISSIPPI RIVER RESTORATION, IL, IA, MN, MO & WI	E			23,464,000

**SUMMARY, OPERATION AND MAINTENANCE**

**APPROPRIATION**

<b>Total Listed Under States</b>	<b>2,371,706,000</b>
<b>Items Not Listed Under States</b>	
Asset Management/ Facilities and Equipment Maintenance (FEM)	4,000,000
Aquatic Nuisance Control Research	690,000
Budget/Management Support for O&M Business Programs	5,365,000
Chief's 12 Actions	8,737,000
Coastal Inlet Research Program	2,475,000
Continuing Authorities Projects Not Requiring Specific Legislation:	
Beneficial Uses of Dredged Materials (Section 204/145)	2,663,000
National Mitigation Projects (Section111)	4,874,000
Cultural Resources (NAGPRA/Curation)	1,500,000
Dredge Wheeler Ready Reserve	8,000,000
Dredging Data And Lock Performance Monitoring System	1,062,000
Dredging Operations And Environmental Research (DOER)	6,080,000
Dredging Operations Technical Support Program (DOTS)	1,391,000
Earthquake Hazards Reduction Program	270,000
Facility Protection	12,000,000
Great Lakes Sediment Transport Models	900,000
Inland Waterway Navigation Charts	3,708,000
Inspection of Completed Works	1,780,000
Monitoring Of Completed Navigation Projects	1,575,000
National Coastal Mapping Program	4,000,000
National Dam Safety Program	10,000,000
National Emergency Preparedness Program (NEPP)	5,000,000
National Natural Resources Management Activities	3,296,000
National Portfolio Assessment for Reallocation	300,000
Program Development Technical Support (ABS-P2, WINABS)	300,000
Protection of Navigation	
Protect, Clear And Straighten Channels (Sec. 3)	50,000
Removal Of Sunken Vessels	500,000
Waterborne Commerce Statistics	4,271,000
Harbor Maintenance Fee Data Collection	725,000
RecreationOneStop (R1S) National Recreation Reservation Service	1,130,000
Regional Sediment Management Demonstration Program	1,391,000
Reliability Models Program For Major Rehab.	608,000
Water Operations Technical Support (WOTS)	653,000
<b>Subtotal - Items Not Listed Under States</b>	<b>99,294,000</b>
<b>Total Operation and Maintenance Appropriation</b>	<b>2,471,000,000 1/</b>
Rivers and Harbors Contributed Funds	35,000,000
<b>Total Operation and Maintenance Program</b>	<b>2,506,000,000</b>

1/ Includes \$735,000,000 financed from the Harbor Maintenance Trust Fund; \$11,000,000 from the Inland Waterways Trust Fund; and \$37,000,000 in Special Recreation User Fees receipts. The remainder is financed from the General Fund.

**FY 2008 FUNDED FOR CONSTRUCTION – HYDROPOWER PROJECTS****RANKED BY RATIO OF BENEFITS TO COSTS (BRC)****BCRs AND RATIOS OF NET BENEFITS TO TOTAL COSTS CALCULATED AT SEVEN PERCENT DISCOUNT RATE**

<b>DIS</b>	<b>NAME</b>	<b>BRC</b>	<b>NET BENEFITS/ TOTAL COSTS</b>
SAW	JOHN H KERR DAM AND RESERVOIR, VA & NC (REPLACEMENT)	3.6	2.6
NWO	GARRISON DAM AND POWER PLANT, ND (REPLACEMENT)	3.3	2.3
SWL	OZARK - JETA TAYLOR POWERHOUSE, AR (REPLACEMENT)	1.9	0.9
SAS	RICHARD B RUSSELL DAM AND LAKE, GA & SC	1.9	0.9
	** Data on monetary benefits not available		