Civil Works Overview

Introduction

From 1775 to the present, the U.S. Army Corps of Engineers has served the nation in peace and war. The Corps traces its history to June 1775, when the Continental Congress appointed Colonel Richard Gridley as Chief of Engineers of the Continental Army, under General George Washington. The original Corps was the Army's engineering and construction arm until it mustered out of service at the close of the Revolutionary War in 1783.

In 1802, Congress re-established a separate Corps of Engineers within the Army. At the same time, it established the U.S. Military Academy at West Point, the country's first — and for 20 years its only — engineering school. With the Army having the nation's most readily available engineering talent, successive Congresses and administrations established a role for the Corps as an organization to carry out both military construction and works "of a civil nature."

Throughout the nineteenth century, the Corps supervised the construction of coastal fortifications, lighthouses, several early railroads, and many of the public buildings in Washington, D.C. and elsewhere. Meanwhile, the Corps of Topographical Engineers, which enjoyed a separate existence for 25 years (1838 - 1863), mapped much of the American West. Army Engineers served with distinction in war, with many engineer officers rising to prominence during the Civil War.

In its civil role, the Corps of Engineers became increasingly involved with river and harbor improvements, carrying out its first harbor and jetty work in the first quarter of the nineteenth century. The Corps' ongoing responsibility for federal river and harbor improvements dates from 1824, when Congress passed two acts authorizing the Corps to survey roads and canals and to remove obstacles on the Ohio and Mississippi rivers. Over the years since, the expertise gained by the Corps in navigation projects led succeeding administrations and Congresses to assign new water-related missions to the Corps in such areas as flood control, shore and hurricane protection, hydropower, recreation, water supply and quality, and wetland protection.

Today's Corps of Engineers carries out missions in three broad areas: military construction and engineering support to military installations; reimbursable support to other federal agencies (such as the Environmental Protection Agency's "Superfund" program to clean up hazardous and toxic waste sites); and the Civil Works mission, centered around navigation, flood control and — under the Water Resources Development Acts of 1986, 1988, 1990 and 1992 — a growing role in environmental restoration.

Authorization and Planning of Water Resources Projects

Corps of Engineers water resources activities are normally initiated by non-federal interests, authorized by Congress, funded by a combination of federal and non-federal sources, constructed by the Corps under the Civil Works Program, and operated and maintained either by the Corps or by a non-federal sponsoring agency.

The Water Resources Development Act of 1986 made numerous changes in the way potential new water resources projects are studied, evaluated and funded. The major change is that the law now specifies greater non-federal cost sharing for most Corps water resources projects.

When local interests feel that a need exists for improved navigation, flood protection, or other water resources development, they may petition their representatives in Congress. A Congressional committee resolution or an act of Congress may then authorize the Corps of Engineers to investigate the problems and submit a report. Water resources studies, except studies of the inland waterway navigation system, are conducted in partnership with a non-federal sponsor, with the Corps and the sponsor jointly funding and managing the study.

For inland navigation and waterway projects, which are by their nature not "local," Congress, in the Water Resources Development Act of 1986, established an Inland Waterway Users Board, comprised of waterway transportation companies and shippers of major commodities. This board advises the Secretary of the Army and makes recommendations on priorities for new navigation projects such as locks and dams. Such projects are funded in part from the Inland Waterway Trust Fund, which in turn is funded by waterway fuel taxes.

Normally, the planning process for a water resource problem starts with a brief reconnaissance study to determine whether a project falls within the Corps' statutory authority and meets national priorities. Should that be the case, the Corps district where the project is located will carry out a full feasibility study to develop alternatives and select the best possible solution. This process normally includes public meetings to determine the views of local interests on the extent and type of improvements desired. The federal, state, and other agencies with interests in a project are partners in the planning process.

Before making recommendations to Congress for project authorization, the Corps ensures that the proposed project's benefits will exceed costs, its engineering design is sound, the project best serves the needs of the people concerned, and that it makes the wisest possible use of the natural resources involved and adequately protects the environment. Once the Corps of Engineers district completes its feasibility study, it submits a report, along with a final environmental impact statement, to higher authority for review and recommendations. After review and coordination with all interested federal agencies and the governors of affected states, the Chief of Engineers forwards the report and environmental statement to the Secretary of the Army, who obtains the views of the Office of Management and Budget before transmitting these documents to Congress.

If Congress includes the project in an authorization bill, enactment of the bill constitutes authorization of the project. Before construction can get underway, however, both the federal government and the project sponsor must provide funds. A federal budget recommendation for a project is based on evidence of support by the state and the ability and willingness of a non-federal sponsor to provide its share of the project cost.

Appropriation of money to build a particular project is usually included in the annual Energy and Water Development Appropriations Act, which must be passed by both Houses of the Congress and signed by the President.

Navigation

Corps of Engineers involvement in navigation projects dates to the early days of the United States, when rivers and coastal harbors were the primary paths of commerce in the new country. Without its great rivers, the vast, thickly-forested, region west of the Appalachians would have remained impenetrable to all but the most resourceful early pioneers. Consequently, western politicians such as Henry Clay agitated for federal assistance to improve rivers. At the same time, the War of 1812 showed the importance of a reliable inland navigation system to national defense.

There was, however, a question as to whether transportation was, under the Constitution, a legitimate federal activity. This question was resolved when the Supreme Court ruled that the Commerce Clause of the Constitution granted the federal government the authority, not only to regulate navigation and commerce, but also to make necessary navigation improvements.

The system of harbors and waterways maintained by the Corps of Engineers remains one of the most important parts of the nation's transportation system. The Corps maintains the nation's waterways as a safe, reliable and economically efficient navigation system. The 12,000 miles of inland waterways maintained by the Corps carry one sixth of the nation's inter-city cargo. The importance of the Corps mission in maintaining depths at more than 500 harbors, meanwhile, is underscored by an estimated one job in five in the United States being dependent, to some extent, on the commerce handled by these ports.

Flood Control and Flood Plain Management

Federal interest in flood control began in the alluvial valley of the Mississippi River in the mid-19th century. As the relationship between flood control and navigation became apparent, Congress called on the Corps of Engineers to use its navigational expertise to devise solutions to flooding problems along the river.

After a series of disastrous floods affecting wide areas in the 1920s and 30s, Congress determined, in the Flood Control Act of 1936, that the federal government would participate in the solution of flooding problems affecting the public interest that were too large or complex to be handled by states or localities. Corps authority for flood control work was thus extended to embrace the entire country. The Corps turns most of the flood control projects it builds over to non-federal authorities for operation and maintenance once construction is completed.

The purpose of flood control work is to prevent damage through regulation of the flow of water and other means. Prevention of flood-related damages can be accomplished with structural measures, such as reservoirs, levees, channels and floodwalls that modify the characteristics of floods; or non-structural measures, such as flood plain evacuation, floodproofing and floodway acquisition, that alter the way people use these areas and reduce the susceptibility of human activities to flood risk.

Corps flood control reservoirs are often designed and built for multiple-purpose uses, such as municipal and industrial water supply, navigation, irrigation, hydroelectric power, conservation of fish and wildlife, and recreation.

The Corps fights the nation's flood problems not only by constructing and maintaining structures, but also by providing detailed technical information on flood hazards. Under the Flood Plain Management Services Program, the Corps provides, on request, flood hazard information, technical assistance and planning guidance to other federal agencies, states, local governments and private citizens. Once community officials know the flood-prone areas in their communities and how often floods would be likely to occur, they can take necessary action to prevent or minimize damages to existing and to new buildings and facilities, such as adopting and enforcing zoning ordinances, building codes, and subdivision regulations. The Flood Plain Management Services Program provides assistance to other federal and state agencies in the same manner.

Shore and Hurricane Protection

Corps work in shore protection began in 1930, when Congress directed the Corps to study ways to reduce erosion along U.S. seacoasts and the Great Lakes. Hurricane protection work was added to the erosion control mission in 1955, when Congress directed the Corps to conduct investigations along the Atlantic and Gulf Coasts to identify problem areas and determine the feasibility of protection.

While each situation the Corps studies involves different considerations, Corps engineers always consider engineering feasibility and economic efficiency along with the environmental and social impacts. Federal participation in a shore protection project varies, depending on shore ownership, use and type and frequency of benefits. (If there is no public use or benefit, the Corps will not recommend federal participation.) Once the project is complete, non-federal interests assume responsibility for its operation and maintenance.

There are 82 federal shore protection projects along the coasts of the Atlantic, Pacific, Gulf of Mexico and the Great Lakes. Total investment in these projects since 1950 has been $674 million, of which $405 million was provided by the federal government, the rest by non-federal sponsors.

One shore protection method popular in seaside communities is beach nourishment — the periodic replenishment of sand along the shoreline to replace that lost to storms and erosion. Authorized nourishment projects usually have a nourishment period of 50 years. In addition, Section 145 of the Water Resources Development Act of 1976 authorizes placement of beach quality sand from Corps dredging projects on nearby beaches. Under Section 933 of the Water Resources Development Act of 1986, local sponsors pay the federal government 50 percent of the additional costs of this placement of sand.

Hydropower

The Corps has played a significant role in meeting the nation's electric power generation needs by building and operating hydropower plants in connection with its large

multiple-purpose dams. The Corps' involvement in hydropower generation began with the Rivers and Harbors Acts of 1890 and 1899, which required the Secretary of War and the Corps of Engineers to approve the sites and plans for all dams and to issue permits for their construction. The Rivers and Harbors Act of 1909 directed the Corps to consider various water uses, including water power, when submitting preliminary reports on potential projects.

The Corps continues to consider the potential for hydroelectric power development during the planning process for all water resources projects involving dams and reservoirs. In most instances today, it is non-federal interests who develop hydropower facilities at Corps projects without federal assistance. The Corps, however, can plan, build and operate hydropower projects when it is impractical for non-federal interests to do so. Today, the more than 20,000 megawatts of capacity at Corps-operated power plants provide approximately 24 percent of the nation's hydroelectric power, or three percent of its total electric energy supply.

Water Supply

Corps involvement in water supply dates back to 1853, when it began building the Washington Aqueduct, which provides water to the nation's capital city and some of its suburbs to this day.

Elsewhere in the nation, the Water Supply Act of 1958 authorized the Corps to provide additional storage in its reservoirs for municipal and industrial water supply at the request of local interests, who must agree to pay the cost. The Corps also supplies water for irrigation, under terms of the Flood Control Act of 1944. This act provided that the Secretary of War, upon the recommendation of the Secretary of the Interior, could allow use of Corps reservoirs for

irrigation, provided that users agree to repay the government for the water.

Recreation

The Flood Control Act of 1944, the Federal Water Project Recreation Act of 1965, and language in specific project authorization acts authorize the Corps to construct, maintain, and operate public park and recreational facilities at its projects, and to permit others to build, maintain, and operate such facilities. The water areas of Corps projects are open to public use for boating, fishing, and other recreational purposes.

The Corps of Engineers today is one of the federal government's largest providers of outdoor recreational opportunities, operating more than 4,300 sites at its lakes and other water resource projects. More than 370 million visits per year are recorded at these sites. State and local park authorities and private interests operate nearly 2,000 other areas at Corps projects.

Environmental Quality

The Corps carries out the Civil Works Programs in consistency with environmental laws, executive orders and regulations. Perhaps primary among these is the National Environmental Policy Act (NEPA) of 1969. This law requires federal agencies to study and consider the environmental impacts of their proposed actions. Consideration of the environmental impact of a Corps project begins in the early stages, and continues through design, construction and operation of the project. The Corps must also comply with these environmental laws and regulations in conducting its regulatory programs.

NEPA procedures ensure that public officials and private citizens may obtain and provide environmental information before federal agencies make decisions concerning the environment. In selecting alternative project designs, the Corps strives to choose options with minimal environmental impact.

The Water Resources Development Act of 1986 authorizes the Corps to propose modifications of its existing projects — many of them built before current environmental requirements were in effect — for environmental improvement. In recent years, the Corps of Engineers has planned and recommended environmental restoration actions at federal projects to restore environmental conditions. Under the Corps' specifically authorized General Investigations program, ecosystem restoration can be pursued either as a single purpose, or in conjunction with navigation or flood control investigations. Corps activities are directed at engineering solutions to water and related land resource problems. The Corps' focus is on those ecological resources and processes that are directly associated with or directly dependent upon the hydrologic regime of the ecosystem and watershed. Proposals the Corps has made under this authority range from use of dredged material to create nesting sites for waterfowl to modification of water control structures to improve downstream water quality for fish.

Regulatory Programs

The Corps of Engineers regulates construction and other work in navigable waterways under Section 10 of the Rivers and Harbors Act of 1899, and has authority over the discharge of dredged or fill material into the "waters of the United States" — a term which includes wetlands and all other aquatic areas — under Section 404 of the Federal Water Pollution Control Act Amendments of 1972 (PL 92-500, the "Clean Water Act"). Under these laws, those who seek to carry out such work must first receive a permit from the Corps.

The "Section 404" program is the principal way by which the federal government protects wetlands and other aquatic environments. The program's goal is to ensure protection of the aquatic environment while allowing for necessary economic development.

The permit evaluation process includes a public notice and a public comment period. Applications for complex projects may also require a public hearing before the Corps makes a permit decision. In its evaluation of applications, the Corps is required by law to consider all factors involving the public interest. These may include economics, environmental concerns, historical values, fish and wildlife, aesthetics, flood damage prevention, land use classifications, navigation, recreation, water supply, water quality, energy needs, food production and the general welfare of the public.

The Corps of Engineers has issued a number of nationwide general permits, mostly for minor activities which have little or no environmental impact. Individual Corps districts have also issued regional permits for certain types of minor work in specific areas. Individuals who propose work that falls under one of these general or

regional permits need not go through the full standard individual permit process. However, many general permit authorizations do involve substantial effort by the Corps, and often require project-specific mitigation for the activities authorized by the permit. Corps districts have also issued State Program General Permits for work in states that have comprehensive wetland protection programs. These permits allow applicants to do work for which they have received a permit under the state program. These general permits reduce delays and paperwork for applicants and allow the Corps to devote most of its resources to the most significant cases while maintaining the environmental safeguards of the Clean Water Act.

Emergency Response and Recovery

The Corps provides emergency response to natural disasters under Public Law 84-99, which covers flood control and coastal emergencies. It also provides emergency support to other agencies, particularly the Federal Emergency Management Agency (FEMA), under Public Law 93-288 (the Stafford Act) as amended.

Under PL 84-99, the Chief of Engineers, acting for the Secretary of the Army, is authorized to carry out disaster preparedness work; advance measures; emergency operations such as flood fighting, rescue and emergency relief activities; rehabilitation of flood control works threatened or destroyed by flood; and protection or repair of federally authorized shore protection works threatened or damaged by coastal storms. This act also authorizes the Corps to provide emergency supplies of clean water in cases of drought or contaminated water supply. After the immediate flooding has passed, the Corps provides temporary construction and repairs to essential public utilities and facilities and emergency access for a 10-day period, at the request of the governor and prior to a Presidential Disaster Declaration.

Under the Stafford Act and the Federal Disaster Response Plan, the Corps of Engineers, as designated by the Department of Defense, is responsible for providing public works and engineering support in response to a major disaster or catastrophic earthquake. Under this plan, the Corps, in coordination with FEMA, will work directly with state authorities in providing temporary repair and construction of roads, bridges, and utilities, temporary shelter, debris removal and demolition, water supply, etc. The Corps is the lead federal agency tasked by FEMA to provide engineering, design, construction and contract management in support of recovery operations.

The Army and Water Resource Development

A logical question often asked the Corps of Engineers is "Why is the Army involved in building harbors, waterways, dams and flood control projects?" The answer begins with the founding of our country. The U.S. Army Corps of Engineers was established June 16, 1775, a year before the War of Independence. After distinguished performance in the Revolution, engineers were asked to continue serving the country to design and construct roads, canals, harbors and other civil works. In 1802, the U.S. Military Academy was established at West Point, N.Y., as the nation's first engineering school.

In 1803, the Louisiana Purchase doubled the territorial holdings of the United States. President Jefferson dispatched Capt. Meriwether Lewis and Lt. William Clark on their famous expedition to the Pacific Northwest. This was the first Army involvement in the region.

In the early 1800s, many immigrants and pioneers moved westward and trade flourished. In 1824, Congress passed a series of laws, one of which was the General Survey Act, that marked the beginning of the Corps civil works program. Explorations and surveys were completed by the Topographical Engineers, the predecessor organization of the present Corps of Engineers. They laid out early stagecoach routes, Pony Express, railroads and military roads.

John C. Fremont, George B. McClellan, and Isaac Ingalls Stevens, the first governor of the Washington Territory, were Army Engineers. The Army placed much importance on the Pacific Northwest as some of the nation's finest officers were assigned to the region, including Ulysses S. Grant and Philip Sheridan.

During the Civil War, Army Engineers continued their work in the Northwest. One of their efforts was removing navigation hazards such as rocks, stumps and sandbars from the Snake River between what is now Pasco, Washington, and Lewiston, Idaho, so stern wheelers could navigate the river, carrying gold from Idaho mines to federal coffers to finance the war.

One hundred years ago, work of Army Engineers consisted of efforts to improve navigation. Pulling snags from river waterways, cutting a bar to seventeen feet with a primitive bucket dredge borrowed from the city of Portland, or dynamiting rocks out of the Columbia or Snake rivers was typical of the work done then. Since then, Congress, acting through the will of the people, has directed the Corps of Engineers to design, construct and operate huge multipurpose water resource development projects.

The North Pacific Division of the Corps of Engineers has built 31 dams, approximately 1,470 miles of improved river channel and 32 boat harbors.

Hydroelectric generators at 21 Corps dams provide more than 40 percent of the generating capacity of the region.

In a newer age in which conservation and preservation mean as much as development, the Corps of Engineers carries on its complex duties under the U.S. Army Corps of Engineers traditional motto — "Essayons - Let us Try."

How Projects Are Initiated

The Corps of Engineers functions as an engineering consultant to Congress. Most Corps water resource projects are developed under specific congressional authorization. When local interests believe a need exists for construction or improvement of a water resource project, they petition their representative in Congress. The senator or representative then requests the appropriate congressional committee to direct the Corps of Engineers to make a survey and furnish a recommendation. Authority for a study is either by Senate or House committee resolution or by congressional act.

Economic and engineering solutions to the problem and possible impact on the environment are studied. In making the study, public meetings are held to determine the wishes of local interests, to assure that the concerns and needs of the local people are considered and that requirements are understood when local interests must provide real estate or financial participation in the project. Other federal and non-federal agencies concerned with any phase of resource planning or development are consulted. When all the data are analyzed and a determination of the fullest possible use of the resource is made, the study, with its recommendations, is submitted to Congress which may then authorize a project. If authorized, the project requires congressional funding before construction can begin.

Some studies may be confined to a small area with a comparatively simple solution. Other studies may involve an urban area or cover an entire river basin and require detailed analyses of navigation, flood control, erosion control, hurricane and flood protection, municipal and industrial water supply, water quality control, fish and wildlife, hydroelectric power, major drainage, irrigation, recreation or other purposes that may be deemed necessary to promote the national welfare.

When Congress provides funds for construction, the Corps of Engineers prepares plans and specifications, awards contracts and supervises construction. Completed projects may be operated and maintained by the Corps or they may be transferred to another agency or the non-federal sponsor to operate and maintain.

A procedure to deauthorize projects was established by Section 12 of PL 93-251, Water Resources Development Act of 1974. Annually, the Secretary of the Army, acting through the Chief of Engineers, is required to provide Congress with a list of projects that have been authorized for at least eight years and meet the criteria for deauthorization. Before the list is submitted to Congress, the Chief of Engineers obtains views of interested federal departments, agencies and instrumentalities, the governors of affected states, and concerned members of Congress.

Continuing Authorities Program

Continuing authorities have been established by Congress which give the Corps of Engineers discretion to plan, design, and construct certain flood control, navigation, and water resource improvements without specific Congressional authorization for project activities of limited scope and extent. The basic objective of the Continuing Authorities program is to allow the Corps of Engineers to respond more quickly to problems or needs where the apparent project scope and costs are small, and which do not merit a large feasibility investigation. The Chief of Engineers, under direction of the Secretary of the Army, may authorize and construct those small projects that are complete in themselves and do not commit the United States to any additional improvement to ensure successful operation.

Small Flood Control Projects

Section 205, of the Flood Control Act of 1948, as amended, provides for construction of small flood control projects not specifically authorized by Congress, when such work is determined to be advisable by the Chief of Engineers. Levees, floodwalls, channel improvements, and small dams are the most common structural projects constructed under Section 205 authority. Non-structural flood plain management alternatives such as flood proofing

and flood plain evacuation are also considered under this authority. Bank protection against erosion without flooding on adjacent lands is excluded from this authority, unless specifically required to protect other project features. The maximum federal cost of a Section 205 project is $5 million, including all planning, engineering, design and construction costs. Larger project costs are possible if the project sponsor agrees to bear costs in excess of that amount. Local sponsors must agree to operate and maintain the project after completion, and are required to pay a share of planning and construction costs.

Small Navigation Projects

Section 107 of the Rivers and Harbors Act of 1960, as amended, authorizes the Corps of Engineers to plan and construct small navigation projects not specifically authorized by Congress. Federal assistance is limited to general navigation facilities, which may include a safe entrance channel protected by breakwaters or jetties if needed, anchorage basins, turning basins, and major access channels leading to the anchorage basin or locally provided berthing area. Docks, landings, piers, berthing areas, boat stalls, slips, mooring facilities, launching ramps, access roads, parking areas, and interior access channels needed for maneuvering into berths are entirely a local responsibility and are constructed and maintained at non-federal expense. A Section 107 navigation project is adopted for construction after a detailed investigation clearly shows the engineering feasibility and economic justification of the improvement. Local sponsors are required to pay a share of the costs. Each project is limited to a federal cost of $4 million, which includes all project-related costs for feasibility studies and investigations, engineering, preparation of plans and specifications, construction, supervision, and administration.

Small Beach Erosion Control Projects

Section 103 of the Rivers and Harbors Act of 1962, as amended, authorizes construction of small beach restoration and protection projects, not specifically authorized by Congress, for protecting coastal shores from erosion caused by natural wave and current action. Federal funds cannot be used to protect privately owned shores. However, if there is significant benefit arising from public use or from protection of nearby public facilities, privately owned shores may be eligible for protection with up to 50 percent federal cost-sharing. The federal participation is adjusted in accordance with the degree of such benefits. Publicly owned shores or nearby public facilities, public parks and conservation areas may qualify for up to 65 percent federal participation. A Section 103 project can be constructed only after detailed investigation clearly shows its engineering feasibility and economic justification. Federal participation is limited to a maximum of $2 million for any one project. The local sponsoring agency must pay a share of planning and construction costs and agree to operate and maintain the project.

Snagging and Clearing Projects

There are two separate authorities that allow the Corps to clear snags and other debris from waterways. Section 2 of the Flood Control Act of 1937, as amended by Section 208 of the Flood Control Act of 1954, provides authority for the Corps of Engineers to remove accumulated snags and other debris, and to clear and straighten stream channels in the interest of flood control. The maximum allowable cost for work under this authority is $500,000 on any given tributary during one fiscal year.

Section 3 of the Rivers and Harbors Act of 1954 allows the Corps of Engineers to undertake emergency snagging or clearing work to clear or remove unreasonable obstructions from rivers, harbors, and other waterways in the interest of maintaining navigation. General widening or deepening of waterways, or the removal of materials due to a normal shoaling process rather than a sudden occurrence, is not eligible. Conditions in the waterway can be restored only to those that existed prior to the sudden occurrence, and the project sponsor is required to maintain the channel after it has been restored. There is no federal cost limitation for any project under this authority. However, this authority has been used almost exclusively for emergency navigation improvements. No more than $1 million can be spent nationwide on this program in any one fiscal year.

Emergency Streambank and Shoreline Protection

Section 14 of the Flood Control Act of 1946, as amended, authorizes up to $500,000 of federal funds per year at a single location to construct, repair, restore, or modify emergency streambank and shoreline protection works to prevent damage to highways, bridge approaches, municipal water systems, sewage treatment plants, and other essential public works endangered by floods due to bank erosion. Churches, hospitals, schools, and other nonprofit public services can also be protected under Section 14 authority. For any Section 14 project, the local sponsor must pay a share of the project costs. The local sponsor

must also operate, maintain and repair the project as required to serve the intended purposes.

Prevention and Mitigation of Shore Damage

Section 111 of the Rivers and Harbors Act of 1968, as amended, provides authority for the Corps of Engineers to develop and construct projects that prevent and mitigate damages to both public and privately owned shores caused by federal navigation work located along the coastal and Great Lakes shorelines of the United States. Each project is limited to a cost of $2 million. After a reconnaissance of the problem, the Corps may recommend to construct a project to prevent or mitigate shore damage attributable to a federal navigation project only when the navigation project has been determined to be the cause of the damage and its abandonment is not the most viable solution. Section 111 authority may not be used for preventing or mitigating shore damages caused by non-federal navigation projects.

Special Programs

Small Water Resource Development Projects

Special authority in Section 201, Flood Control Act of 1965, expedites authorization of small projects by a resolution of the Committees on Public Works of the Senate and House of Representatives rather than by Congress as a whole.

For such projects, the Corps is authorized to construct, operate and maintain both single and multipurpose projects involving, but not limited to, navigation, flood control and shore protection. The estimated federal first cost of these projects must be less than $15 million.

Planning Assistance to States

Section 22 of the Water Resources Development Act of 1974 authorizes the Corps to use its technical expertise to assist states and tribes in preparing comprehensive plans for the development, use and conservation of water and related land resources. The non-federal sponsor is required to pay 50 percent of the costs. The federal share in such plans is limited to $300,000 annually in any one state or for any one tribe. Typical activities under this program include studies for flood damage reduction; water conservation; water quality; wetland evaluations; port and harbor development; coastal zone management; environmental planning; economic, social and cultural studies; and hydrology, hydraulics and engineering studies.

Shoreline Erosion Control

Section 54 of the Water Resources Development Act of 1974, establishes a national shoreline erosion control development and demonstration program.

Small Environmental Projects

Section 1135 of the Water Resources Development Act of 1986 (PL 99-662), as amended, provides authority for environmental restoration of existing civil works projects. Projects generally accomplish restoration by modifying a Corps project or operation of a Corps project, or be located on Corps land. The total federal project costs, including planning and design costs, can not exceed $5 million. Local sponsors must pay a share of the project costs. The non-federal sponsor generally must assume responsibility for future operation and maintenance of the project.

Section 204 of the Water Resources Development Act of 1992 (PL 102-580) applies beneficial uses of material dredged in conjunction with federal navigation projects. 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 federal navigation project. These authorities do not encompass emergency actions undertaken by the Corps.

Fish and Wildlife

Fish and wildlife conservation is closely tied to the Corps environmental and recreation responsibilities. The Fish and Wildlife Coordination Act of 1958 provides for conservation and development of wildlife in association with water resources projects. The Corps of Engineers consults with federal and state wildlife resource agencies on conservation and enhancement measures.

Irrigation

Storage of water for irrigation on agricultural land is used to meet or supplement natural supplies. Section 8 of the Flood Control Act of 1944 provides that such storage may be included in a Corps reservoir upon recommendation of the Secretary of Interior, conforming with Reclamation Law. Section 8 applies only in the 17 western states to which the Reclamation Law applies.

Aquatic Plant Control

A program for control and progressive eradication of certain nuisance aquatic plant growths is authorized by Section 302 of the Rivers and Harbors Act of 1965. The program is administered by the Corps in cooperation with other federal and state agencies. Local governments pay 50 percent of the costs in any projects developed as a result of the studies.

Flood Insurance Studies

The Corps of Engineers carries out flood insurance studies to map eligible communities by risk zones for insurance purpose. Those studies are accomplished on a reimbursable basis for the Federal Emergency Management Agency (FEMA), which administers the National Flood Insurance Program. The studies are made under the provisions of PL 90-448, Title XIII, the National Flood Insurance Act of 1968, as amended by PL 93- 234, and the Flood Disaster Protection Act of 1973. The statutes call for private insurance industry services and provide for federal subsidization of flood insurance. The insurance covers damage caused by overflow of either inland or tidal waters on flood prone land. To obtain flood insurance coverage, a community must take action through its legislative body. It must enact zoning which requires construction of the first livable floor of a structure to be above the level of the 100-year flood (a flood magnitude with a one percent chance of occurring each year). Studies to determine the extent to which flood protection measures affect such rates are conducted by several agencies of the federal government, including the Corps of Engineers.

Water Quality and Pollution Control

Water quality and pollution control are given full consideration in the planning and construction of federal water resources development projects under the 1948 Water Pollution Control Act, as amended, other related legislation, and certain Executive Orders. In water storage projects, adequate capacity may be included for streamflow regulation to maintain high quality; however, this is not a substitute for treatment or other methods of controlling waste at the source.

Support of EPA Construction Grants Program

In 1978, the Corps of Engineers North Pacific Division and Environmental Protection Agency, Region X, entered into an agreement under which the Corps assists EPA in administering the Construction Grants Program in Oregon, Washington, Idaho and Alaska. The program is mandated by the Congress through the Clean Water Act. The EPA program for Oregon calls for a yearly allocation of about $30 million. The Corps assists by reviewing plans and specifications, inspecting construction of wastewater treatment facilities and monitoring management of construction grants.