



**US Army Corps
of Engineers**
New England District



BUILDING STRONG®



A Tradition of Service in New England

U.S. Army Corps of Engineers Division Boundaries



COVER: top photo: Rangers marching in the Patriot's Day Parade, Concord, Mass.
bottom photo - Cape Cod Canal, Bourne, Mass.

The Corps Today

The U.S. Army Corps of Engineers is a worldwide organization that provides engineering services and construction support for a wide variety of military and civil projects.

The Corps' primary military mission is to provide the armed forces of the United States with modern facilities, both at home and abroad, to strengthen the nation's defensive capability and ensure combat readiness.

The Corps' primary civil works mission is to develop and manage the country's water resources. Its projects reduce flood damage, improve harbors and navigation channels, protect streambanks and shorelines, generate hydroelectric power, and preserve and safeguard the environment.

The Corps of Engineers is the nation's largest provider of outdoor recreation. The Corps hosts approximately 360 million visits a year at its lakes, beaches and other areas, and estimates that 25 million Americans (1 in 10) visit a Corps project at least once a year. Supporting visitors to these recreation areas generates 600,000 jobs across the United States.

In addition to water resources projects, the Corps serves as manager for major construction projects undertaken by other federal agencies and allied governments.

The military and civil missions complement each other, allowing Corps professionals to develop, in peacetime, the skills the nation would need in war or other emergencies.

Civilian employees account for 98 percent of the Corps worldwide staff; military officers make up the remainder. There are eight Corps divisions, with 41 districts in the United States. The New England District is part of the North Atlantic Division, which is headquartered in New York City.

This booklet explains some of the many activities of the U.S. Army Corps of Engineers in New England and the nation. It provides a brief glimpse of the Corps tradition of service in New England for nearly 240 years.

A Tradition of Service Since 1775

The Army Corps of Engineers traces its beginnings to the opening days of the Revolutionary War when Boston native Colonel Richard Gridley was named chief engineer of the Massachusetts Volunteers and, shortly thereafter, chief engineer of the newly-formed Continental Army by Commander-in-Chief General George Washington.

The first Army engineering action occurred on the night of June 16, 1775, when Gridley designed and supervised the construction of an earthwork on Breed's Hill overlooking Boston Harbor that would prove impregnable against British bombardment during a fierce battle the following day. Although the patriots lost the position after running out of ammunition, the Battle of Bunker Hill (as it was later called) marked the beginning of the long tradition of service to New England that the Corps continues today.

After the Revolutionary War, the Army's engineer corps was dissolved until it became apparent that the growing nation had a continuing need for military engineers. In 1802 the Congress established a Corps-operated military engineering school at West Point, New York. West Point served in that capacity until 1866 when it became the U.S. Military Academy. Graduates of West Point, the nation's only engineering school for many decades, provided the engineering skills that built the nation from eastern seaboard to western shore.

In 1824, the Congress expanded the Corps' responsibility by passing the General Survey Act which authorized it to survey and build a network of internal improvements, including roads, canals and railroads.



Corps rangers offer a variety of interpretive programs for people to learn about the Corps roles and functions. During the Corps anniversary celebration, rangers made presentations to surrounding schools about the Corps of Discovery and Lewis and Clarks' journey.

A Tradition of Service Since 1775

The same year saw passage of the Rivers and Harbors Act that charged the Corps with improving navigable waterways, especially the Mississippi and Ohio rivers, the fledgling nation's main commercial arteries.

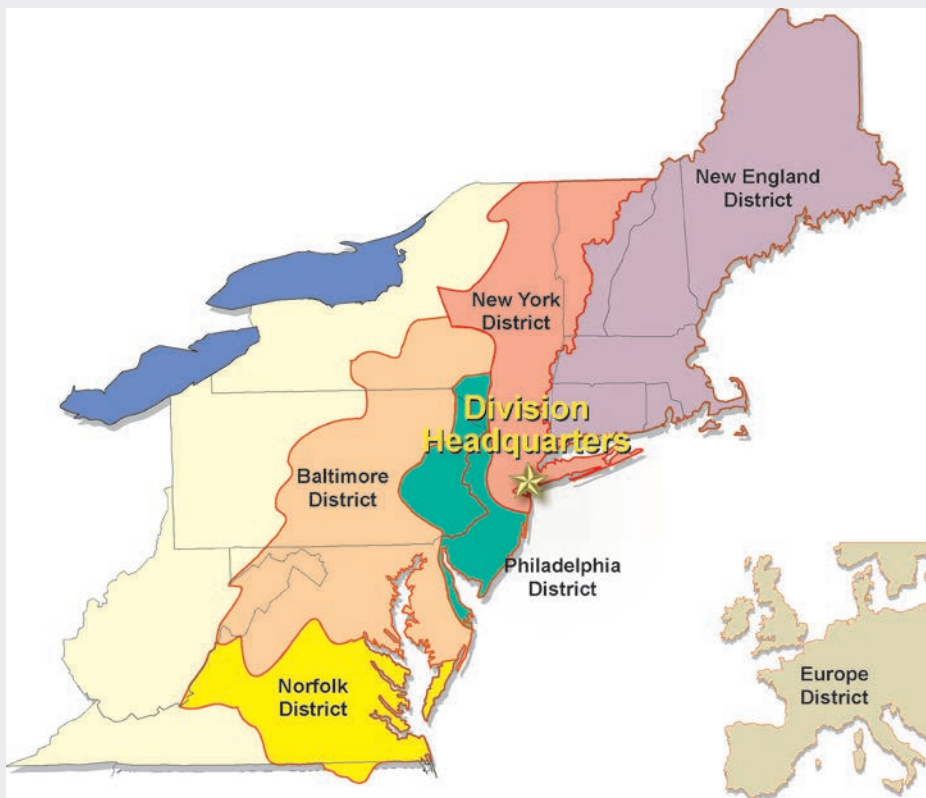
From these historic acts, the civil works mission of the Corps of Engineers grew with the expanding nation so that today the Corps maintains an indispensable network of improvements that supports the infrastructure essential for commerce, transportation and protection from natural disasters. These improvements include over 12,000 miles of inland and intracoastal waterways, 235 locks, and over 600 dams and reservoirs.



Construction of the Cape Cod Canal Railroad bridge located in Bourne, Mass., 1935.

The North Atlantic Division

North Atlantic Division includes six operational districts. The boundaries for the New England; New York; Philadelphia; Baltimore; Norfolk and Europe Districts cover the states shown below.



The North Atlantic Division

The North Atlantic Division, headquartered at Fort Hamilton in Brooklyn, New York, is one of nine supervisory field offices reporting to Corps headquarters in Washington, D.C. It encompasses all or part of 14 states from Maine to Virginia, including the District of Columbia, totaling 180,000 square miles (about five percent of the U.S. land area but 23 percent of the U.S. population). Including its Europe District, the Division spans nine time zones. With six operational districts in New England, New York, Philadelphia, Baltimore, Norfolk and Wiesbaden, Germany, the division employs more than 3,300 civilian professionals and 40 military personnel worldwide.

From constructing fortifications in the early days of the new nation, to playing a significant role in the development of the first atomic bomb during World War II and Cold War facilities such as ballistic missile systems, to building air bases in Israel as part of the Camp David accords, the North Atlantic Division has a long and distinguished record of service.

The division provides military program support, including real estate, engineering and construction management to 50 major Army and 13 major Air Force installations in the United States, as well as to military installations in Greenland and Europe. Its civil works mission includes navigation, hurricane protection, beach erosion control, flood risk management, environmental restoration and other water projects in numerous river basins, including, in addition to those in New England, the Hudson, Delaware, Susquehanna, Potomac and James. It manages five major canals, four major navigation locks and 8 major bridges. It is also responsible for supplying water to the nation's capitol through the Washington Aqueduct.

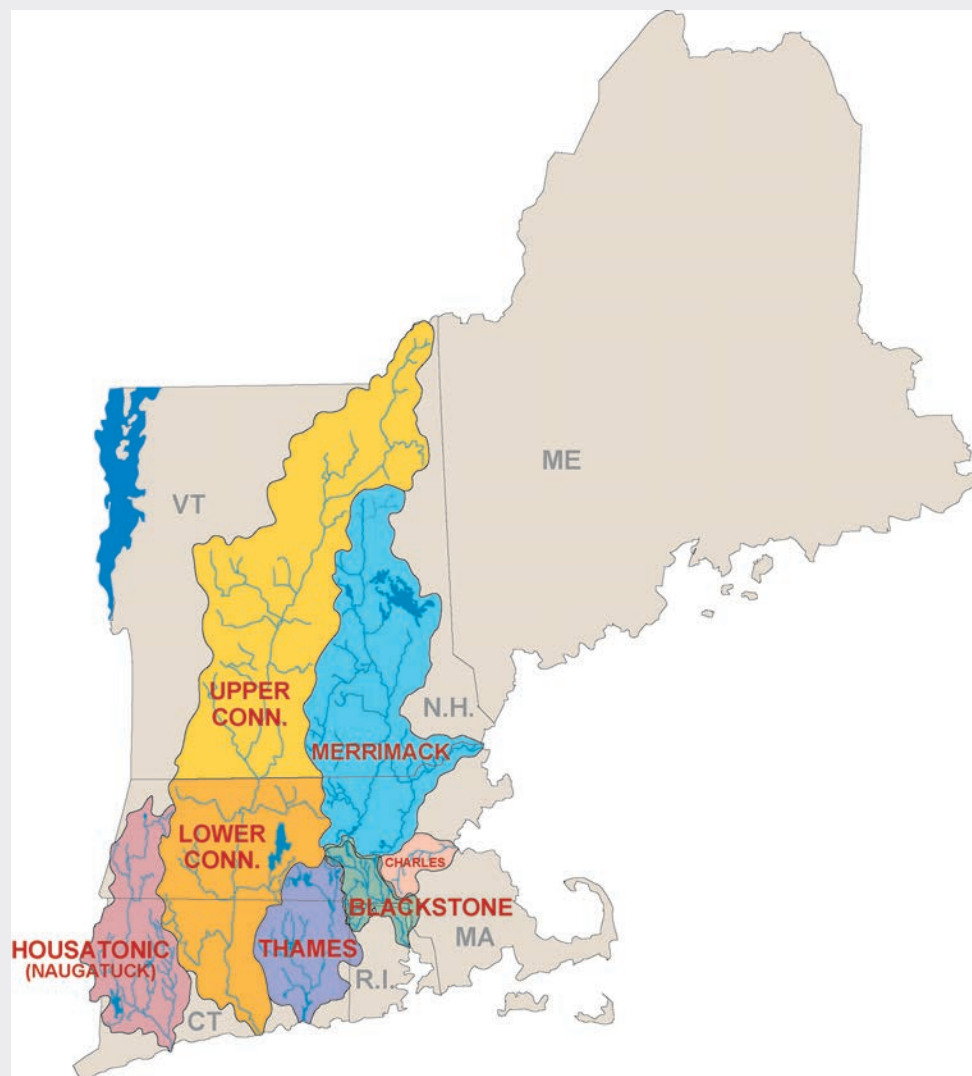
The division protects thousands of miles of coastal and inland shorelines and countless acres of wetlands, both small and large, through its regulatory program, which processes more than 10,000 applications each year.

Environmental restoration is also accomplished for both the military (through the Defense Environmental Restoration Program) and for the U.S. Environmental Protection Agency (through the Superfund Program).

Recovery from natural disasters is delegated to the Corps under a variety of laws, and work is also assigned by the Federal Emergency Management Agency.

New England River Basins

The Corps' flood risk management projects, such as dams and local protection projects, are designed and constructed as part of an overall plan to limit flooding in a particular river basin. There are seven river basins within the New England state boundaries that the District monitors.



The New England District

The New England District is responsible for managing the Corps civil works and military program responsibilities in a 66,000-square-mile region encompassing the six New England states east of the Lake Champlain drainage basin.

The region has:

- 6,100 miles of coastline;
- 171 harbors with Corps improvements;
- 13 deep draft commercial waterways;
- 13 major river basins; and
- thousands of miles of rivers and streams.

The District employs about 500 professional civilian employees, with several military officers serving in key management positions. Seventy-five percent of the staff is stationed at the Concord, Mass. headquarters, while the others serve at Corps projects and area offices throughout the region.

The missions of the New England District are many and varied. They include:

- Environmental restoration and stewardship;
- Flood risk management;
- Natural resource and recreation management;
- Streambank and shoreline protection;
- Navigation improvements and maintenance;
- Disaster assistance;
- Regulatory program;
- Engineering and construction management support to other agencies; and
- Support to military.

Whether studying a major river basin or cleaning up hazardous wastes, the New England District is at work caring for the people of New England, its customers.

The Corps and the Citizens of New England

Many citizens of New England have benefited from the work of the U.S. Army Corps of Engineers. Whether they live downstream from a flood damage reduction project in a river basin, or inland from a barrier-protected harbor mouth; whether they visit a park or recreation site operated by the Corps; or simply cross a bridge to Cape Cod, their lives are touched and improved by the work of the men and women of the Corps.

Many citizens interact more directly with the agency. For example, communities experiencing a water resource problem can apply to the Corps for assistance either directly or through their elected representatives. Through its continuing authorities programs, the Corps can address many local problems related to flood control, navigation, environmental restoration and erosion in a timely manner without specific Congressional approval. Corps engineers from a variety of disciplines are available to work with communities in solving such problems, from analysis of the cause and design of a solution, to management of the construction and operation.

Other citizens interact with the Corps through its regulatory program which requires a permit for most work in waterways and wetlands in the region. Corps personnel are available to advise applicants about permit procedures and should be contacted well in advance of the anticipated start-up date.

Today, as in the past, the Army Corps of Engineers is concerned about the quality of service that it provides its customers. Those customers include the Armed Forces, other federal agencies, state and local governments, and the citizens of New England. The Corps is proud of its tradition of service in New England, a tradition begun on Bunker Hill nearly 240 years ago. It intends to extend that tradition through this century and beyond.



Park rangers offer a variety of interpretive programs all year long.

Flood Risk Management

New England is susceptible to flooding from many sources - hurricanes in summer and fall, snowmelts in winter and spring, and coastal storms year round. As a result of the catastrophic floods in New England in 1936 and 1938, the Corps was called upon to undertake a comprehensive flood risk management program.

Since then the Corps has built many flood control structures throughout New England.

These include:

- 36 dams and reservoirs in five river basins that hold back floodwaters until danger is past;
- One tidal barrier (Charles River);
- Dikes and floodwalls to contain floodwaters;
- Conduits to divert floodwaters;
- Five hurricane protection barriers that protect the shoreline, rivers, and harbors by closing waterways to tidal surges - the Corps currently operates and maintains the barriers at New Bedford, Massachusetts, Providence, Rhode Island and Stamford, Connecticut;
- Channel modifications to increase the carrying capacity of streams, thus reducing the possibility of flooding; and
- Nonstructural flood proofing.

A unique effort was the Charles River Project, which incorporates a large dam with three locks in the downstream urban portion of the Charles River Basin in eastern Massachusetts with the Natural Valley Storage Project upstream. During the 1970s nearly 8,000 acres of property was acquired, either by easement or in fee, as part of the Corps first nonstructural flood control project in the nation.

Spillway discharge was made during a flooding event at Knightville Dam in Huntington, Mass.



Since 1940, the Corps has built 36 dams and reservoirs in New England. Most of these structures are located on tributaries of main rivers and impound flood waters that could be harmful to more developed areas downstream. Hodges Village Dam (shown here) is located on the French River above the confluence with the Quinebaug River in the town of Oxford, Mass. It is part of a system of six flood control dams designed and built by the U.S. Army Corps of Engineers in the basin. This system helps reduce flooding from Oxford, Mass., to Long Island Sound.



The Corps also operates a program of wetland preservation and floodplain management to help communities promote wise and informed use of floodplains in order to avoid the potential damages of development.

It is estimated that the \$538 million spent on flood control measures in New England have already resulted in a savings of over \$6.6 billion in damages prevented, as well as saving many lives and preventing untold suffering. And these projects continue to earn dividends in New England every year.

Flood control measures inland include the construction of dikes, floodwalls and hurricane barriers that protect commercially valuable and historic structures. Shown here is the Fox Point Hurricane Barrier located in Providence, R.I.



Cost Benefit Ratio for Flood Risk Management Projects in New England

\$538 MILLION



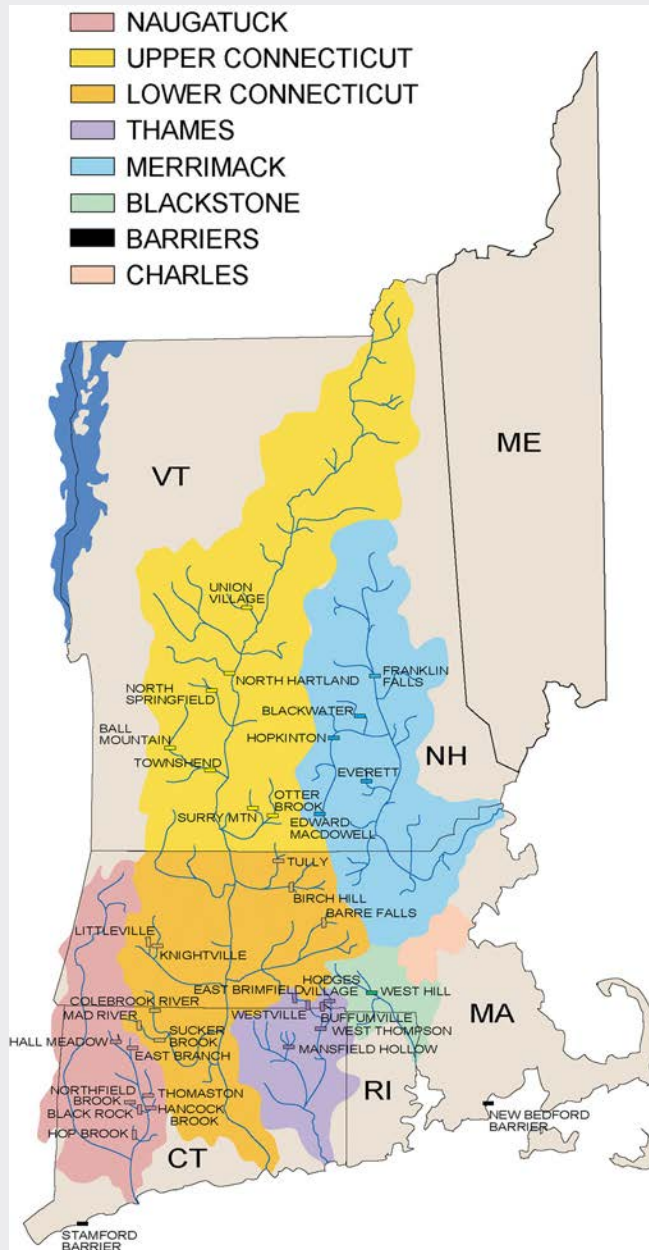
CONSTRUCTION
DOLLARS

\$6.6
BILLION



TOTAL DAMAGES
PREVENTED
AS OF
SEPTEMBER 2011

New England District Flood Risk Management Projects and Hurricane Barriers



Housatonic River Basin

- Black Rock Lake, Conn.
- *East Branch Dam, Conn.
- *Hall Meadow Brook Dam, Conn.
- Hancock Brook Lake, Conn.
- Hop Brook Lake, Conn.
- Northfield Brook Lake, Conn.
- Thomaston Dam, Conn.

Connecticut River Basin

- Ball Mountain Lake, Vt.
- Barre Falls Dam, Mass.
- Birch Hill Dam, Mass.
- Colebrook River Lake, Conn.
- Conant Brook Dam, Mass.
- Knightville Dam, Mass.
- Littleville Dam, Mass.
- *Mad River Dam, Conn.
- North Hartland Lake, Vt.
- No. Springfield Lake, Vt.
- Otter Brook Lake, N.H.
- *Sucker Brook Dam, Conn.
- Surry Mountain Dam, N.H.
- Townshend Lake, Vt.
- Tully Lake, Mass.
- Union Village Dam, Vt.

Thames River Basin

- Buffumville Lake, Mass.
- East Brimfield Lake, Mass.
- Hodges Village Dam, Mass.
- Mansfield Hollow Lake, Conn.
- West Thompson Lake, Conn.
- Westville Lake, Mass.

Merrimack River Basin

- Blackwater Dam, N.H.
- Franklin Falls Dam, N.H.
- Hopkinton and Everett Lakes, N.H.
- Edward MacDowell Dam, N.H.

Blackstone River Basin

- West Hill Dam, Mass.

Charles River Basin

- *Charles River Dam, Mass.

Hurricane Protection Barriers

- New Bedford, Mass.
- *New London, Conn.
- *Pawcatuck-Stonington, Conn.
- Providence, R.I.
- Stamford, Conn.

* Constructed by the Corps, operated by others

Navigation

Ports and navigable waterways are vital to the economy of the United States and New England. As part of its navigational responsibilities, the Corps develops, maintains, and improves the region's harbors and waterways.

The Corps currently maintains 171 federal navigation projects in New England.

These activities include:

- Maintaining and improving federal channels, turning basins and anchorage areas in 13 deep draft commercial waterways;
- Developing and maintaining small boat harbors and waterways to meet commercial and recreational needs;
- Building and maintaining breakwaters, jetties and other structures to provide safe channels, harbors, and mooring basins;
- Monitoring channel and anchorage dimensions for safety;
- Removing obstructions which endanger navigation;
- Operating and maintaining the 17.4 mile long Cape Cod Canal; and
- Snagging and clearing in waterways.

The Corps navigational improvements are made in the public interest, and channels are equally available and accessible to everyone.



As part of its navigational responsibilities, the Corps helps maintain safe passage into an entrance channel to a harbor at low tide, including Point Judith, R.I. that is shown here.

Environmental Restoration

The restoration of ecological productivity of our aquatic habitats is a primary mission of the Civil Works Program. Numerous wetlands have been restored and fisheries migration corridors improved. All of these outputs improve the health of our environment. There are several other authorities under which the New England District serves the citizens of the region in the environmental restoration arena. The Water Resources Development Act of 1986 (Section 1135) authorizes the restoration of degraded environments to more natural conditions by modifying Corps structures or operations, or implementation of new restoration measures. A similar authority, contained in the Water Resources Development Act of 1996 (Section 206) provides for improving the quality of the aquatic environment for the public and fostering partnerships with private and not for profit, as well as traditional sponsors. Additional authorities include contaminated sediment remediation, watershed planning and regional sediment management.

The Defense Environmental Restoration Program is a congressionally directed effort (Public Law 98-212), which provides for expanded work in environmental restoration. It emphasizes the identification, investigation and prompt cleanup of hazardous and toxic waste; unexploded ordnance; and unsafe and unsightly buildings, structures and debris at facilities currently or formerly used by the Department of Defense. To date, approximately 700 sites have been identified in the six state New England region.

Under the DERP program, this metal object was one of many items removed by the New England District and its contractor at the former U.S. Navy Blue Beach Disposal site located in North Kingstown, R.I.



Shoreline and Streambank Protection

The 6,100 miles of New England coastline are among the most beautiful in the world, but they are subject to the erosive forces of wind and tidal movement.

The Corps shore protection program helps to protect and restore shores and beaches from erosion damage.

Structures built by the Corps include:

- Breakwaters to intercept wave energy, providing protection for harbor and shoreline;
- Groins which trap and retain sand, thus maintaining shore alignment and stability;
- Revetments to absorb the energy of breaking waves; and
- Seawalls to prevent bank erosion and heavy wave damage.

Other erosion control methods include:

- Planting vegetation, such as beach grass, to trap and retain sand and
- Nourishing beaches with sand to restore them and stop the water's inland advance.

To date, the Corps has constructed 40 shore protection projects along New England's 355 miles of public beaches.

Inland, Army Engineers have constructed projects to protect public property along New England's rivers.



*Aerial photograph
of Seabrook Harbor,
Seabrook, N.H.*

Recreation and Natural Resource Management

The Corps project sites in New England total more than 55,000 acres of land and water. Some of this land is periodically used to store floodwaters, but in their natural state, these lands make ideal habitats for fish and wildlife. Corps specialists from a variety of disciplines, such as forestry, ecology, biology and botany, are committed to the management of these areas to protect the environment and promote aquatic and animal life.

Corps project sites are also managed to provide recreational opportunities for the people of New England to enjoy the area's natural beauty and resources without damaging the environment.

Some project sites contain:

- Campgrounds;
- Parks and picnic areas;
- Boat ramps;
- Trails for hiking, horseback riding, snowmobiling, trail biking, and cross country skiing;
- Reservoirs containing trout, bass, and other game fish; and
- Hunting areas for deer, pheasant, quail, rabbits, and ducks.

Interpretive programs conducted by Corps rangers on the project sites provide visitors with information about the flora and fauna of the area.

Each year about 10 million people visit and enjoy the parks and other facilities operated by the New England District.



Park rangers perform repair work at Tully Lake, Royalston, Mass.

Disaster Assistance

Throughout the nation's history, citizens have relied on the Army to respond to their needs in disasters. In a typical year, the Corps of Engineers responds to more than 30 Presidential disaster declarations, plus numerous state and local emergencies. Emergency responses usually involve cooperation with other military elements and federal agencies in support of state and local efforts. The Corps conducts its emergency response activities under two basic authorities: Flood Control and Coastal Emergency Act (P.L. 84-99, as amended) and the Stafford Disaster and Emergency Assistance Act (P.L. 93-288, as amended). Under the Stafford Act, the Corps supports the Federal Emergency Management Agency (FEMA) in carrying out the Federal Response Plan, which calls on 26 federal departments and agencies to provide coordinated disaster relief and recovery operations. Under this plan, the Army has the lead responsibility for public works and engineering missions.

The frequency and severity of damages created by natural and other disasters require an ever-ready rapid and effective emergency management response. This challenge will always remain an area of national need. Disaster damages

more typically run in the billions of dollars. In addition, population shifts to at-risk areas and climatic changes are increasing the risk to people and property. Although it is the responsibility of state and local governments to plan for natural emergencies, such as storms, fires, or earthquakes, the Corps participates in the planning process through seminars and exercises. It can also take extraordinary measures, such as strengthening nonfederal flood control or shore protection works in the face of a potentially damaging flood.

One of the most hazardous outcomes of a flood can be contamination of the water supply. The Corps may provide emergency clean water supplies to stricken communities by trucking in potable water to central distribution points or providing temporary water service from safe sources. Similar services can be provided to people and livestock in drought areas.

Whatever the disaster, the Corps is a source of help for stricken communities. The skills developed by Corps professionals while working on civil and military projects are invaluable in emergency situations and would be equally useful to the nation if mobilization were required.



Regulatory Program

Waters and wetlands of the nation are valuable resources and must be carefully protected. Congress has charged the Corps of Engineers with the responsibility for regulating all work in navigable waterways; the discharges of dredged and fill material in all waters and wetlands; and transportation of dredged material for ocean disposal, whether that work is undertaken by an individual, a governmental body, or a commercial business. The Corps fulfills this responsibility through its regulatory program. Each proposed project is carefully reviewed; a permit is then issued (or denied) based on standards that balance the public interest with the benefits to be derived. Permits are required for virtually any work in U.S. waters or wetlands, including:

- Constructing permanent or semi permanent structures, such as piers, docks, or ramps in navigable waters;
- Placing dredged or fill material in U.S. waters or wetlands;
- Discharging dredged materials into waters and wetlands; and
- Performing work, which might affect historic sites, wild or scenic rivers, or which might threaten endangered species.

The Corps makes an effort to provide timely decisions, which reflect the public interest; it offers assistance to all applicants regarding permit procedures.



Regulatory employees hosted a workshop that discussed vernal pools, how to recognize them and what species of animals use them.

International & Interagency Support

Throughout this century and last, the Corps of Engineers has provided engineering and construction services to other federal agencies. For example, in the 1960s the Corps worked closely with NASA in constructing the massive facilities that now support the U.S. space program. In the 1970s it managed the real estate acquisition and construction of a nationwide network of bulk mail centers for the U.S. Postal Service, while in the 1980s it served as the national manager for the Ground Wave Emergency Network (GWEN) program for the U.S. Air Force. Currently it is supporting the Department of Homeland Security in design and construction of border patrol stations.

As the role of government has evolved, this aspect of the Corps work is becoming even more important and will continue to grow in the foreseeable future.

In New England, the Corps relationship with the U.S. Environmental Protection Agency is particularly close. The Corps is supporting EPA in the "Superfund" cleanup of hazardous waste sites by serving as contract managers to review project design and supervise construction activities. A number of activities have already been completed, and 13 other projects are underway. The District managed a large grant program for EPA, which provided money to local communities for upgrading of wastewater treatment facilities. In recent years, the District has become heavily involved in Superfund activities, with more than a dozen major efforts, underway in the region.

Wherever the need for engineering or construction management services arises in the federal family, whether civilian or military, the Corps is ready to carry on its tradition of service and excellence.



*Southeast
Lighthouse,
Block Island, R.I.*

Support to Military

The New England District provides military construction and installation support to Army and Air Force installations in New England. Major customers include the Soldier Systems Center at Natick Labs, Mass.; the Army's 94th Regional Support Command, Reserve Training Area at Devens, Mass.; Hanscom Air Force Base in Bedford, Mass.; and Westover Air Reserve Base in Chicopee, Mass. The District also supports more than 125 recruiting centers throughout the region.

Our professionals provide engineering, construction management and real estate services important not only to the operational facilities that ensure continued capability of these units to execute their assigned missions, but also to support facilities that provide a quality of life that our men and women serving in the Armed Forces deserve.

The District also provides remedial design, environmental remediation, cultural resources compliance, and real estate transfer activities associated with installations being phased out under the Base Realignment and Closure program.



Construction work at the Armed Forces Reserve Center in White River Junction, Vermont.



Field work in wetland area.



Recreational opportunities at flood risk management projects throughout New England.



US Army Corps
of Engineers
New England District

Hop Brook Lake, Middlebury, Conn.