



US Army Corps
of Engineers
New England District

Update Report for Massachusetts



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Mission

The missions of the New England District, U.S. Army Corps of Engineers include flood risk management protection, emergency preparedness and response to natural disasters and national emergencies, environmental remediation and restoration, natural resource management, stream bank and shoreline protection, navigation maintenance and improvement, support to military facilities and installations, and engineering and construction support to other government agencies. The six New England states cover 66,000 square miles and have 6,100 miles of coastline, 171 federal navigation projects (13 deep draft commercial waterways), 13 major river basins, and thousands of miles of navigable rivers and streams. The District operates and maintains 31 dams, three hurricane barriers and the Cape Cod Canal. Through its Regulatory program, the District processes nearly 3,000 applications per year for work in waters and wetlands of the six-state region. We employ about 510 professional civilian employees, with about 300 stationed at our headquarters in

Concord, Mass. The other Corps of Engineers employees serve at Corps projects and offices throughout the region. For information on the New England District visit the website at: www.nae.usace.army.mil/; or on Facebook: [facebook.com/CorpsNewEngland](https://www.facebook.com/CorpsNewEngland); or on Twitter: twitter.com/corpsnewengland; or on Flickr: www.flickr.com/photos/corpsnewengland.

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Navigation

BOSTON HARBOR (7th & 8th CDs) – Improvement deepening of Boston Harbor has been authorized for construction by the 2014 Water Resources Reform and Development Act 2014 (WRRDA). The WRRDA references a Chief of Engineers Report, signed Sept. 30, 2013, which was transmitted to Congress on Feb. 26, 2014. The authorized plan calls for the deepening of the Broad Sound North Channel to -51 feet MLLW, the deepening of the Main Ship Channel (MSC), President Roads Anchorage and lower Reserved Channel to -47 feet, the deepening of the MSC that services the Massport Marine Terminal to -45 feet MLLW, the deepening of the Mystic Channel that services the Medford Street terminal to -40 feet, and deepening of the Chelsea River Channel to -40 feet MLLW. About 8 million cubic yards of ordinary material and 400 thousand cubic yards of weathered rock will need to be removed to deepen these channels. These improvements would cost about \$340 million, of which the Non-Federal Sponsor (Massport) would be required to contribute about \$130 million. A *\$122.2 million contract was awarded Feb. 15, 2018. Work is underway.*

Additionally, the Corps performed O&M dredging in the Inner Harbor. While the Corps fully funded the dredging, the O&M dredge material needed to be placed in a Confined Aquatic Disposal cell (CAD cell). The construction of the CAD cell was cost-shared with a Non-Federal Sponsor (Massport). A \$12.8 million contract was awarded on Sept. 30, 2016 for construction of a Confined Aquatic Disposal (CAD) cell and

dredging portions of the Boston Harbor Federal Navigation Project main ship channel. Dredging started in July 2017 and was completed in Nov. 22, 2017. Approximately 1,020,000 cubic yards of mostly Boston blue clay was dredged to create a CAD cell, with proposed cut depths up to elevation -90 feet Mean Lower Low Water (MLLW) in the 40-foot deep Main Ship Channel. The material dredged to create the CAD cell was placed at the Massachusetts Bay Disposal Site approximately 20 miles offshore of Boston Harbor. Once the CAD cell was constructed, maintenance dredging of approximately 805,000 cubic yards of silty material from portions of the 40-foot Main Ship Channel, the 40-foot deep Inner Confluence, and portions of the 35-foot deep channel, were placed into the newly constructed CAD cell.

CAPE COD CANAL BOURNE AND SAGAMORE HIGHWAY BRIDGES (9th CD) –The District is conducting a multiyear Major Rehabilitation Evaluation Study of the Bourne and Sagamore highway bridges to determine whether major rehabilitation or replacement of either or both bridges is justified. The existing bridges were constructed more than 80 years ago and require increasingly frequent maintenance, which is costly and causes significant impact to traffic crossing the Cape Cod Canal. The Major Rehabilitation Evaluation Report (MRER) will evaluate the risk and reliability of the structures as well as the economic impacts/benefits of several major rehabilitation and bridge replacement alternatives versus continuing to repair the bridges as

needed. Structural analysis of the bridges was completed and is now being incorporated with the cost and economic components of the MRER. A contract to model effects of lane closures during various rehab and replacement alternatives was awarded to TrafInfo Communications Inc., Woburn, Mass. on Sept. 29, 2017 in the amount of \$49,559. Traffic modeling was completed in late January 2018 and a benefit to cost ratio (BCR) developed for the baseline, rehab, and replacement alternatives. A task order to AECOM to support the NEPA evaluation and the public involvement process is expected to be awarded by August 2018. *Coordination with MassDOT on the Commonwealth's Transportation Study, and the MRER have begun. Public involvement on the initial results of the MRER is expected to begin in early October with NEPA compliance completing at the end of CY 2020.*

A project to replace joint seals in the driving surface of both bridges was awarded to R. Zoppo Corporation on Nov. 29, 2017 for \$1,695,000. *Installation of the new joint seals and expansion joint on the Sagamore Bridge was started on April 2, 2018 and was completed on May 10, 2018 some three weeks ahead of schedule and prior to the Memorial Day weekend, May 25, 2018.*

GREEN HARBOR (9th CD) – An 80-foot section of the east jetty that was repaired in 2014 was damaged during winter storm Juno and subsequent winter Nor'easters; \$1,000,000 was identified in the FY 16 Work Plan to effect repairs. *A contract was awarded May 17, 2018. Work is set to start in late July 2018.* Maintenance dredging of the 6-foot and 8-foot-deep entrance channel portion of the Federal project was performed by a combination of the Government-owned special purpose dredge Currituck and land-based excavators in May 2018. Approximately 30,000 cubic yards of sand and cobbles was removed and placed at the nearshore placement site off of Green Harbor Beach.

LYNN HARBOR, LYNN (6th CD) – At the request of the city of Lynn, federal funds were made available to examine the feasibility of creating a new federal channel and anchorage along the Lynn Harbor shoreline. The proposed channel would connect the existing Lynn Harbor and Saugus River channels, reducing commercial navigation delays and providing boat access to the commercial properties along the Lynn Harbor shoreline targeted for redevelopment. The initial site visit was conducted on Sept. 29, 2010 by the Corps and representatives of the city of Lynn, serving as the Local Sponsor. Information gathered will be used to determine if a complete feasibility study is warranted. That determination will be documented in an Initial Appraisal Report (IAR) and submitted to USACE's North Atlantic Division for approval to proceed with the feasibility study. Completion of the study would require execution of a Feasibility Cost Share Agreement (FCSA) to share the study costs with the city of Lynn. The study could be completed within about 18 months of FCSA execution.

MENEMSHA CREEK, MARTHA'S VINEYARD (9th CD) – The District met with local officials from the towns of Aquinnah and Chilmark, and Wampanoag Indian Tribe in early March 2013 to discuss the dredging of the Menemsha

Creek federal navigation channel, and repair of the entrance channel jetties. Design for the repairs of the jetties were completed during the summer of 2014, and all required environmental permitting obtained. A contract for jetty repair work was solicited in October 2014 and awarded to RC&D, Inc., on Dec. 16, 2014. Construction repairs to the West Jetty started on March 17, 2015 and were completed on May 21, 2015 bringing the structures back to their authorized dimensions.

Environmental coordination for the dredging portion of the project was completed in February 2015. Design documents were completed in March 2015, and a contract for the work solicited on April 6, 2015. Bids were opened on May 19, 2015 and a contract awarded to J-Way Southern Inc., of Avon, Ohio, on June 30, 2015 in the amount of \$2,170,798. Dredging started in late December 2015 and stopped at the end of the dredging window on Jan. 31, 2016. An extension to the dredging window was requested but was denied by the Commonwealth of Massachusetts permitting agencies. Approximately 15,800 cubic yards (cy) was dredged from the southern portion of the 8-foot channel and placed on Lobsterville Road beach. However, the contractor did not complete all 60,000 cubic yards (approx.) of maintenance dredging required under the contract. The contractor returned to dredge in November 2016 and removed approximately 4,300 cy before several mechanical failures eventually led to the work not being completed by the permitted work window ending on Jan. 31, 2017. J-Way Southern Inc. was terminated for default on March 6, 2017 and its equipment removed from the area by March 31, 2017.

A take-over agreement between the Corps and contractor's Surety was executed on June 7, 2017. The Surety initiated a contract with H&L Dredging to dredge the remaining shoals not accomplished by the original contractor in the fall 2017. Mobilization of equipment began on Sept. 15 and dredging commenced on Oct. 1, 2017. H&L Dredging removed approximately 47,800 cy of sandy material and placed it on Lobsterville Beach where it was graded to match existing beach dimensions. Dredging was completed by Oct. 23, 2017 and all equipment mobilized from the project site by Nov. 12, 2017.

Additional repairs to areas of upland damage by the surety, on behalf of its client J Way Southern, Inc., were completed in March 2017. A request for equitable adjustment (REA) was submitted on Nov. 22, 2017 by the Surety on behalf of H&L Dredging for a change in conditions for cobble encountered in the channel. *The Corps has reviewed the request and expects to modify the contract to include costs for change of conditions in August 2018. Efforts to closeout the completion contract with the Surety have begun and are expected to be complete by September 2018, formally ending the project.* Funding for maintenance dredging and repair to the jetties was appropriated in the Disaster Relief Appropriations Act of 2013 (Public Law 113-2).

NANTUCKET HARBOR (9th CD) – The District met with Nantucket officials and congressional staff from Massachusetts to hear the town's concerns over the condition

of the jetty system at the entrance of Nantucket Harbor in late 2012. The Nantucket officials reported continued issues with vessel collisions to the jetties due to their disrepair and design construction to half-tide height. Damage from Hurricane Sandy and the subsequent Nor'Easter caused concern for the safety of navigation and initiated a 2013 request for Hurricane Sandy funding to repair the areas of most significant need. Coordination with appropriate state/Federal agencies began in 2013 and was completed in April 2015. An Environmental Assessment, including a Damage Assessment and Mitigation Plan (DAMP), to analyze alternatives and reduce potential impacts to environmental resources in the footprint of the jetty repair construction area was completed and reviewed by the state/Federal resource agencies. A Coastal Zone Consistency (CZM) Determination was received from the state of Massachusetts in March 2015. Design of the repairs to the East and West Jetty were completed in April of 2015 and a contract for construction services to repair the jetties was solicited on May 21, 2015.

A contract in the amount of \$10,545,000 was awarded to Mohawk Northeast Inc. on Sept. 17, 2015. A protest from one of the other bidders was dismissed by the Government Accountability Office (GAO) pending a corrective action undertaken by the District. Revised proposals from all firms were received in late December and reviewed by the District in January 2016. Resolution of the corrective action was completed in April 2016, and the contract re-awarded to Mohawk Northeast Inc. at a reduced price of \$9,955,000. Notice to Proceed was given in May 2016 and construction started on Oct. 13, 2016. Work was completed on April 14, 2017 approximately 2 months ahead of schedule. District staff will be collecting additional sensitive habitat data in August 2018 and writing a final report by the end of the summer 2018 to determine the successfulness of using unique construction techniques (self-elevating work platform in areas of eelgrass) and meeting the requirements of the DAMP. Project completion is expected at the end of summer 2018. Funding for repair of the jetties was appropriated in the Disaster Relief Appropriations Act of 2013.

NEW BEDFORD AND FAIRHAVEN HARBOR (9th CD) – The District is currently preparing a dredged material management plan (DMMP) for maintenance dredging of the New Bedford and Fairhaven Harbors Federal Navigation Project (FNP). The main deep-draft channel to New Bedford has an authorized depth of 30 feet, while the shallow draft channels for the fishing fleet at Fairhaven have depths of 15 and 10 feet. Following dredging performed under contract to the Commonwealth of Massachusetts, an updated hydrographic survey of the FNP identified a total dredge volume requirement of 751,000 cubic yards (cy) of shoal material to restore the project to authorized dimensions. The District has determined that none of the identified shoal material in the FNP is suitable for disposal in open waters outside the harbor. The District will be considering several layouts of confined aquatic disposal (CAD) cells within the New Bedford inner harbor and beneath the outer harbor entrance channel for disposal of proposed dredged material. Some of these potential cell locations were identified in a Massachusetts state DMMP completed in 2004 by

the Massachusetts Office of Coastal Zone Management (MACZM).

PLYMOUTH HARBOR (9th CD) – The District proposes to dredge the Plymouth Harbor Federal Navigation Project (FNP) in Plymouth, Mass. The Congressionally authorized FNP provides for a 200-foot-wide by 18-foot-deep main channel which has been maintained to a depth of 15-feet (approximately 2.5 miles in length); a 150-foot-wide by 15-foot-deep channel extension with turning basin; and a 60-acre by 8-foot-deep anchorage. All depths refer to mean lower low water (MLLW). Approximately 385,000 cy of sediment are proposed to be dredged from the project and placed at either the Massachusetts Bay Disposal Site (MBDS) or the Cape Cod Bay Disposal Site (CCBDS) *or the Green Harbor beach nearshore placement site*. The project approvals and Environmental Assessment *are being* updated to include updated sediment sampling and testing. Contract plans and specifications *have been* developed and a dredging contract will be issued *in July 2018*.

At the request of the town of Plymouth, the Corps is looking into developing contract plans and specifications to reconstruct a 2,500-foot-long section of Long Beach Dike that is in disrepair. Environmental coordination and preliminary designs will be developed, subject to available funding.

SCITUATE HARBOR (9th CD) – A section of the nose of the north jetty was damaged during winter storm Juno and subsequent winter Nor'easters; \$1,000,000 was identified in the FY 16 Work Plan to effect repairs. *A contract was awarded May 8, 2018. Work is set to start around September 2018.*

WELLFLEET HARBOR, WELLFLEET (9th CD) – At the request of town representatives the District completed a conditions survey of the FNP in April 2015. Results of the survey show that areas of the 10-foot-deep channel and the 6-foot-deep anchorage are significantly shoaled; with some parts of the project, specifically the 6-foot-deep anchorage having less than 0.5 feet of draft in large reaches of the project. District staff met with local officials in conjunction with state/Federal resource agencies to discuss potential disposal alternatives and permit requirements for completing a maintenance event as soon as funds were authorized by Congress. A Public Notice of the project was issued on Dec. 20, 2017. A draft Environmental Assessment was prepared in December 2017 and coordinated with the Federal and state resource agencies in February 2018. A water quality certification permit application was submitted Dec. 19, 2017 and is currently under review by the Massachusetts Department of Environmental Protection.

Funding in the amount of \$150,000 was identified in the FY17 work plan and is being used to complete plans and specifications of the dredging project. A solicitation for dredging will be advertised once permitting is in place and construction funds have been identified. Construction is expected to occur in the September to December timeframe once funds are available and a contract awarded.

Shoreline/Streambank Protection

CHELSEA RIVER, EAST BOSTON (7th & 8th CDs) – A Section 14 streambank protection project along the Chelsea River has been requested by the city of Boston. Without permanent erosion protection, the riverbank will continue to erode which eventually will threaten the integrity of the 15-inch sewer main. The city of Boston is participating as the nonfederal project sponsor. Approximately 300 linear feet of riverbank requires stabilization. The project consists of the placement of a stone rip rap slope revetment along the bank to stabilize the base of the slope and protect it from scouring during high flows. The project's Environmental Assessment/Finding of No Significant Impact (EA/FONSI) was completed in May 2016. Due to ongoing city of Boston activities at the project site, the sponsor indicates that proposed project design and permitting efforts are on hold.

NANTASKET BEACH, HULL (8th CD) – This investigation examines potential solutions to coastal erosion and backshore flooding at the Massachusetts Department of Conservation and Recreation (MADCR)'s Nantasket Beach Reservation in Hull. Work in response to the deteriorated condition of Massachusetts DCR's seawall prompted emergency construction activity at Nantasket Beach, changing the without project condition. The final feasibility

report has been approved. The Corps and MADCR executed a Project Partnership Agreement in April 2016 for the final design and construction. A \$2.6 million contract was awarded on Dec. 7, 2017. *Work was completed in 2018.*

SLACK BROOK, LEOMINSTER (2nd CD) – The city of Leominster requested Corps assistance in providing emergency storm bank stabilization, to stabilize approximately 310 feet of riverbank along Slack Brook. A section of Exchange Street is in close proximity to the riverbank. Riverbank slumping and subsequent erosion, particularly during high water and flow events, have endangered Exchange Street to exposure. The project consists of the construction of emergency riverbank erosion protection along the right bank of Slack Brook, adjacent to Exchange Street. The riverbank erosion protection consists of a stone revetment on the lower bank and a geocell structure with topsoil and infill on the upper bank. The awarded contract was terminated at the convenience of the government. A new contract solicitation was reissued in the spring of 2017. A contract was awarded on July 24, 2017. Construction started in December 2017 *and has been completed.*

Coastal Storm Damage Reduction

FIELDSTON AND BRANT ROCK SECTIONS, MARSHFIELD (9th CD) – A Section 103 feasibility study has begun to investigate storm tidal flooding issues in the Fieldston and Brant Rock sections of Marshfield, Mass. At the completion of the study, a feasibility report will document

the results of the investigation and will provide the basis for recommending a flood damage reduction project. The release of a Public Notice Environmental Assessment/Finding of No Significant Impact (EA/FONSI) was issued on July 5, 2017. The comment period closed Aug. 3, 2017.

Flood Damage Reduction

BLACKWATER RIVER, SALISBURY (6th CD) – The District conducted studies concerning the feasibility of providing local flood protection along the Blackwater River in Salisbury. Preliminary studies indicated that flood control measures would be economically justified, and further detailed studies were conducted to fully evaluate flood control alternatives and impacts. A draft Detailed Project Report/Environmental Assessment (DPR/EA) that evaluates potential improvements and recommends a plan to reduce flood damages in the low lying area between Ninth Street and Florence Avenue was completed in May 2006. The Project Partnership Agreement (PPA) for the project was signed by the Commonwealth and the District in May 2009. A \$4.3 million construction contract was awarded on Nov. 30, 2015. Construction began in March 2016 and was completed in March 2017.

Commonwealth of Massachusetts proposed a plan called "the Emerald Necklace Environmental Improvements Master Plan, Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement," dated January 1999. The objectives were to increase flood control, improve water quality and enhance aquatic/riparian habitat within the Muddy River by dredging accumulated sediment, providing flood damage reduction through improvements to restrictive drainage culverts, removing nuisance vegetation, improving fisheries/wildlife habitat and water quality, bank stabilization and promoting and enhancing recreational use of emerald necklace parklands.

MUDDY RIVER FLOOD RISK MANAGEMENT PROJECT (4th, 7th & 8th CDs) – In response to an October 1996 storm event that resulted in severe flooding along the Muddy River as well as several tributary areas, particularly Stony Brook, the city of Boston, town of Brookline and the

Section 522 of the Water Resources Development Act (WRDA) of 2000 authorized the Corps to, "carry out the project for flood damage reduction and environmental restoration, Muddy River, Brookline and Boston, Mass.," substantially in accordance with the plans, and subject to concurrence it met federal guidelines. Corps headquarters prepared a Chief's report recommending federal participation and forwarded the report to the Assistant Secretary of the Army (ASA) for Civil Works on Dec. 29, 2003. The ASA approved federal

participation in the flood damage reduction component of the project. However, due to its high unit cost, the environmental restoration portion of the project is not recommended for federal implementation. NAE completed design efforts and prepared plans and specifications for the Phase 1 effort. A project partnering agreement was signed with the project sponsors. A \$30.9 million contract for Phase I was awarded on Aug. 10, 2012. A groundbreaking ceremony was held in October 2012 and construction started in early 2013.

The construction of Phase 1 of the project is complete. In the months of July and August 2016, final inspection and correction of punchlist (minor deficiencies) items were completed throughout the project. A Ribbon Cutting Ceremony was held by sponsors and stakeholders on April 21, 2017 in Boston to mark Phase I completion of the project. Design of Phase 2 of the project continues with the preparation of 95% set of plans and specifications. For more project information visit: www.nae.usace.army.mil/Missions/ProjectsTopics/MuddyRiver.aspx.

Ecological Restoration/Watershed Management

BASS RIVER ECOSYSTEM RESTORATION (9th CD) – The town of Yarmouth requested Corps assistance with restoring tidal flow to the upper reaches of the Bass River in 2001 under Section 206. Preliminary data suggest that an existing railroad bridge restricts tidal flow. The Corps developed a Preliminary Restoration Plan in 2004 that included various measures to restore approximately 385 acres of tidal wetlands and estuarine habitat. The Corps determined that widening both the former rail bridge and Route 6 would help restore tidal flushing. The towns of Yarmouth and Dennis are working with the Massachusetts Department of Transportation (MADOT) to remove the former rail bridge abutments and provide a wider opening for the Cape Cod Rail Trail currently in design. As a result of this work, the towns no longer have an interest in proceeding with a Corps Section 206 Feasibility Study.

BIRD ISLAND TERN NESTING HABITAT RESTORATION, MARION (9th CD) – Working with the local sponsor, which is the Massachusetts Executive Office of Energy and Environmental Affairs (Office of Coastal Zone Management and Division of Fisheries & Wildlife, Natural Heritage & Endangered Species Program), the New England District completed a feasibility study under the Section 206 Aquatic Ecosystem Restoration Program that recommended a plan to restore and protect roseate tern nesting habitat on Bird Island in Buzzards Bay. The northeastern population of roseate terns is listed as endangered at both the federal and state levels of jurisdiction, and Bird Island supports over 20 percent of the Northeastern population. The revetment that protects the island was in poor condition, and coastal storms were eroding the vegetation and sand that roseate terns need for nesting.

The Corps completed the Detailed Project Report and Environmental Assessment in October 2006 and received a letter of support for the project from the sponsor in 2008. The report recommended reconstructing the revetment and restoring substrates for tern nesting. The Corps and the Massachusetts Department of Fish and Game executed a project partnership agreement on June 30, 2011 and completed the project design, real estate agreements, and all necessary permits by August 2015. An invitation for bids for a construction contract was advertised in August 2015 and awarded in September 2015 for \$3,120,000. The Federal government contributed 65% of the project costs

and oversaw the contract. The sponsor contributed the remaining 35% of total project costs. Construction of the new revetment on the island was started in December 2015. The awarded contract required the work to be completed over two seasons, from October 2015 to April 2016 and then from September 2016 to April 2017. A project completion ceremony was held June 21, 2017 in Marion, Mass.

BLACKSTONE RIVER (2nd CD) – A feasibility study of environmental restoration opportunities was initiated in 1999 with the Commonwealth of Massachusetts Executive Office of Environmental Affairs (MAEOEA). Key components of this study include an assessment of the threat from contaminated sediments, an inventorying of environmental restoration opportunities in the watershed, a determination of the role of impoundment's on water quality and sediment re-suspension, and an inventorying of dams and their condition. An interim report that recommends restorative measures for Fisherville Pond has been prepared. Remaining funding is being used to examine the potential removal of Milbury Dam and prepare a summary document of all the efforts under this study.

CHATHAM STAGE HARBOR SEDIMENT MANAGEMENT (9th CD) – The town of Chatham requested a study to evaluate beneficial reuse of Stage Harbor channel sediment to lessen impacts of beach erosion and restore endangered bird habitat. The study will require an assessment of long shore transport of sand, the effects associated with jetties and groins, historic and projected erosion rates, and dredging and disposal practices. The Corps will use historic aerial photographs and data collected during targeted field surveys to develop sediment transport models. The project also will evaluate potential habitat improvement alternatives for protected birds and other coastal species on Chatham lands and islands within the Monomoy National Wildlife Refuge. The Monomoy National Wildlife Refuge and other shoreline areas on Cape Cod serve as important habitat to federally protected species such as the piping plover and roseate tern. The sediment transport modeling report is complete. The study team is evaluating potential benefits of dredged material reuse based on the modeling conclusions.

CONNECTICUT RIVER ECOSYSTEM RESTORATION STUDY (1st & 2nd CDs) – Authority to conduct an ecosystem restoration study in the upper Connecticut River watershed

is provided through a resolution adopted by the Committee on Environment and Public Works of the U.S. Senate on May 23, 2001. A reconnaissance report identified several ecosystem restoration opportunities along the main stem of the Connecticut River. Since then the Water Resources Development Act of 2007 authorized the Corps to partner with The Nature Conservancy (TNC). A feasibility study was initiated with TNC in 2008. The study is investigating alternatives to manage flow for the 73 largest dams in the basin with the goal of improving aquatic habitat while maintaining human uses such as flood control, hydropower, water supply and recreation. Various tools (e.g. operation and optimization computer models) have been developed to assess these management measures. A draft report was released for public review on June 12, 2018. It's available at: <http://www.nae.usace.army.mil/Missions/Projects-Topics/Connecticut-River/>.

GULF OF MAINE INITIATIVE – The New England District is a member of the Gulf of Maine working group, providing this joint U.S./Canadian committee with water resource planning expertise. Technical support in applications of sediment chemical mapping for Boston Harbor is being provided. District staff members are participating in Gulf of Maine workshops and these workgroups are discussing ways in which the U. S. and Canada can partner through the Gulf of Maine program.

LONG POINT DIKE ECOSYSTEM RESTORATION (9th CD) – The town of Provincetown requested Corps assistance with restoring ecological resources in West End Marsh under Section 1135 – Project Modifications to Improve the Environment Program. The Corps completed a Federal Interest Determination in May of 2014. The study is considering creating openings in Long Point Dike to restore the connection between Cape Cod Bay and West End Marsh for fish and invertebrates and to improve salt marsh and estuarine habitats. We expect to release a draft report for public review in 2018.

MALDEN RIVER ECOSYSTEM RESTORATION PROJECT (7th CD) – In October 2002, the Corps and the Mystic Valley Development Commission (MVDC) executed a Feasibility Cost Sharing Agreement (FCSA) for the Malden River Ecosystem Restoration Feasibility Study. The study considered opportunities to restore wetlands, benthic habitats, and fish passage in the Malden River. North Atlantic Division approved the Detailed Project Report/ Environmental Assessment on Nov. 24, 2008. MVDC and the Corps executed the project partnership agreement on Oct. 8, 2009. We are preparing the plans and specifications for the project, which will restore freshwater wetlands on the lower river.

MERRIMACK RIVER WATERSHED STUDIES (SECTION 729) (3rd & 6th CDs) – The overall purpose of the watershed assessment study is to conduct a comprehensive field program and data collection effort combined with watershed and river modeling to provide information to stakeholders to guide local water resource management decisions. The assessment of the Merrimack River and its watershed is a

multi-phase effort that is being conducted in collaboration with multiple partners and stakeholders. This study is being conducted under the authority provided in Section 729 of WRDA 1986 as amended and titled “Water Resources Needs of River Basins and Region.” The Section 729 study requires (75 percent federal/25 percent nonfederal) cost sharing. The Lower Merrimack River Assessment Phase 1 efforts were performed at a cost of about \$2 million and cost shared with nonfederal interests in Massachusetts and New Hampshire. The study was initiated in the spring of 2002 and the Phase 1 report was completed in September 2006. Phase II efforts on the Upper Merrimack River Basin in New Hampshire began in 2007. The Phase II report will be completed in 2018. The estimated cost for the Phase II Merrimack study efforts is about \$1.6 million. In 2013 the Corps started the final phase (Phase III) studies on the Lower Merrimack River Watershed. Field Sampling Plans for the Merrimack River and tributaries were completed in 2014. Water quality sampling events were conducted in 2014, 2015, and 2016. Watershed modeling will be completed in 2018. The Draft Merrimack River Watershed Assessment Summary report will be available for public review in 2018.

MILL POND RESTORATION, LITTLETON (3rd CD) – The town of Littleton requested that the Corps conduct a study of Mill Pond and its tributaries to investigate alternatives to restore the ecology and health of this 48-acre degraded freshwater pond. This study is being conducted under the Corps' Aquatic Ecosystem Restoration Program, Section 206 of WRDA of 1996. The aquatic habitat of Mill Pond is degraded as a result of sedimentation and excessive nutrient loads into the pond from the surrounding 4,500-acre watershed. An estimated volume of 200,000 cubic yards of soft sediment has accumulated in the pond, reducing its average depth from 6 feet deep to 3 feet. The current shallowness of the pond and excessive nutrient concentrations contribute to extensive growth of aquatic weeds and degraded fish habitat. The objectives of the restoration study are to address methods to remove and dispose of accumulated sediment from the pond to reduce the recycling of phosphorous, reduce nutrient influx, and increase water depth. The Corps is assessing the environmental benefits and costs of several restoration alternatives to determine the most cost-effective and acceptable solution. In 2008, the town of Littleton completed an investigation of nutrient loading in Mill Pond and is completing documentation of basin-wide best management practices that are now in place or will be implemented to reduce nutrient loads into the pond. Adequate reduction in nutrient loading in the basin is necessary for proposed aquatic habitat restoration alternatives to be effective. With limited Federal funding received in 2014, the Corps is proceeding with the draft Detailed Project Report (DPR) by incorporating the results of the town's study and additional sediment analysis, and the Corps plans to issue a public notice, once a draft DPR is completed.

MILL RIVER, NORTHAMPTON (2nd CD) – The Corps initiated a Section 1135 feasibility study to look at restoration of the historic river channel, fish passage and other habitat improvements with funding made available in the Section

1135 program. We provided a project management plan and cost estimate for a feasibility report to the city in 2011. The city is considering the plan but does not have funding to move forward at this time.

NATIONAL ESTUARY PROGRAM – The District is currently supporting implementation of the comprehensive

conservation and restoration plans of the Massachusetts/ Cape Cod Bays and the Buzzards Bay National Estuary Programs (NEP). Activities include attendance at committee meetings and transfer of our data to the NEP Geographic Information Systems (GIS). Additionally, we continue to work to identify habitat restoration opportunities.

Flood Plain Management Services

WILBRAHAM, MA (1st CD) – The New England District is conducting an investigation of the drainage area of Spear Brook to assess the effects of storm runoff contributing to downstream flooding conditions along Main Street and the

Woodland Dell area in Wilbraham, Mass. The study will offer recommendations to reduce the risks and severity of future flooding. The investigation is scheduled to be completed in 2018.

Defense Environmental Restoration Program (DERP)

This Congressionally directed effort (PL 98-212) provides for expanded work in environmental restoration. It emphasizes the identification, investigation and prompt cleanup of hazardous and toxic waste; unexploded ordnance (UXO); and unsafe buildings, structures and debris at current and former military facilities. A total of 325 formerly used defense sites (FUDS) have been authorized in Massachusetts. There is the potential for several other properties to be eligible for the program. Site and project eligibility will be scheduled in the future when funding priorities and resource availability allow. Of the 119 sites where work was needed, the following efforts are underway:

Camp Wellfleet (9th CD) – The New England District will continue to work with the National Park Service to establish an awareness program for the identification of ordnance related items as part of the institutional controls for the site. Annual ordnance identification/safety briefings are held with the National Park Service in the spring. USACE awarded a contract in July 2016 to conduct an investigation of the former Camp Wellfleet FUDS site for residual munitions constituents (MC) and/or munitions of explosive concern (MEC) related to the use of military munitions. The results of the investigation will be documented in a Remedial Investigation Report. A Feasibility Study Report will be developed to evaluate remedial alternatives to address the residual contamination, if any MC or MEC is found. Based on the results of the Feasibility Study, a remedial alternative will be selected for implementation. The objective of the project is to conduct sufficient investigation and remediation to demonstrate that residual contamination at the site does not pose an unacceptable risk to human health or the environment. A signed Decision Document will be prepared at the conclusion of the project to close out the site.

Hingham Former Burning Ground (Wompatuck State Park, 8th CD) – The project consists of investigating military munitions and munitions constituents where the Navy formerly burned/detonated explosive materials. Contracts were awarded March 31 and June 30, 2008 and Aug. 27 and Dec. 1, 2009 to conduct additional investigations at the

site to fill data gaps. Field work was completed in October 2009. Groundwater, soil and sediment sampling were conducted as well as subsurface soil sampling using multi-increment sampling. Samples were collected at depths of 1-6 feet below ground surface for munitions constituents. Subsurface soil sampling also was conducted in a specific area to characterize diesel contamination and to determine the areal extent of soil that potentially needs to be excavated. Excavation of the diesel contaminated soil has been put on hold pending evaluation of sampling results which will determine whether excavation is required. A data gaps analysis was performed in 2012, with additional field work to install 9 additional wells and perform additional sampling (groundwater, surface water, surface and subsurface soil and sediment sampling and geophysical work) was conducted in 2013, 2014 and 2015. All additional data collected was incorporated into the Draft Final RI/FS report in 2016. The Draft Final RI/FS Report is being revised and the risk assessments updated to comply with CERCLA. Both the Proposed Plan and Decision Document will be updated accordingly as well.

Hingham Naval Ammunition Depot (8th CD) – USACE awarded a contract in July 2016 to conduct an investigation of the former Hingham Naval Ammunition Depot FUDS site for residual munitions constituents (MC) and/or munitions of explosive concern (MEC) related to the former depot operations. The results of the investigation will be documented in a Remedial Investigation Report. A Feasibility Study Report will be developed to evaluate remedial alternatives to address the residual contamination, if any MC or MEC is found. Based on the results of the Feasibility Study, a remedial alternative will be selected for implementation. The objective of the project is to conduct sufficient investigation and remediation to demonstrate that residual contamination at the site does not pose an unacceptable risk to human health or the environment. A signed Decision Document will be prepared at the conclusion of the project to close out the site. Remedial Investigation field work is *ongoing and scheduled to be complete in early fall 2018*.

Lonczak Drive Area (LDA) Site at the Former Westover Air Force Base, Chicopee (1st CD) – Studies and remediation of the southern portion of LDA included an LNAPL mass and mobility assessment as well as completion of a Method III risk assessment, the results of which found that NAPL present at the site was not mobile and there was no risk to Human Health or the environment from its presence. CENAE's contractor completed and submitted to the MassDEP a combined MCP compliant *Release Abatement Measure (RAM) Completion Report and Response Action Outcome (RAO)* statement in fall 2011. In summer 2012, MassDEP responded that approval of site closure would require the following items: 1) a Feasibility Study be completed at the site to demonstrate that a permanent solution is not feasible; 2) an Activity and Use Limitation (AUL) be completed for the site; and 3) additional characterization work be completed to define the extent of impact. The A-E firm performing the investigations went out of business; subsequently a new firm (FS Engineers) was brought on board to perform the report to comply with the preceding item "3".

The "Nature and Extent Characterization Evaluation" Report was reviewed by USACE. The findings were to perform supplemental field work before completing the Phase III Evaluation (Feasibility Study), RAO Statement and AUL. The USACE team met with the contractor in early October 2014 to refine the scope for the supplemental field work.

In March 2015, the contractor was "Terminated for Convenience". This action was necessary due to the Government not exercising an option year extension (an administrative error which invalidated the FS Engineers' task order). The Government obtained sole source justification to solicit and award the uncompleted work back to FS Engineers. This contract was awarded in September 2015. Additional field characterization work was conducted in the summer of 2016 and quarterly GW sampling events were conducted in 2017.

As a result of the extreme regional drought conditions in the northeast, the lower water table resulted in the appearance of LNAPL in locations previously characterized as clean. Given the expansion of the LNAPL plume, another round of characterization to identify the plume's extent will be necessary. This work was awarded in the spring of 2018 and field work is scheduled to commence in the summer. The end goal is to fully characterize the extent of contamination so that a MCP compliant Closure Report may be submitted leading to an approved RAO statement and site closure.

Martha's Vineyard Projects (9th CD) – (Cape Poge Little Neck, South Beach Moving Target Machine Gun Range, and Tisbury Great Pond): A Time Critical Removal Action (TCRA) was completed on the Cape Poge Little Neck project and the South Beach Moving Target Machine Gun Range project from April to September 2009. The TCRA resulted in the removal of many inert ordnance items. A Site Investigation was performed at the Tisbury Great Pond project site under the Military Munitions Response Program. All three sites required additional investigation to delineate the extent of the munitions. Due to the close proximity of these sites, coupled

with the fact that they are all ordnance related projects, all 3 projects are currently being executed simultaneously by the New England District. Field work started in November 2010, and ended in March 2012. An Environmental Security Technology Certification Program (ESTCP) Demonstration project using innovative geophysical technology to perform geophysical surveys offshore to locate munitions was conducted in June 2010 at South Beach by Tetra Tech. The data from this demonstration project have been incorporated into the overall RI/FS. The Final RI and FS Reports have been reviewed/approved for Cape Poge, Tisbury Great Pond and South Beach. Public meetings for all three projects were held in 2015. The Final Decision Documents for Cape Poge, South Beach and Tisbury Great Pond have been completed and are available for review at: <http://www.nae.usace.army.mil/Missions/Projects-Topics/Marthas-Vineyard-RIFS/>.

Nantucket, Former Tom Nevers Facility (9th CD) – A contract was awarded in September 2011 to conduct a Remedial Investigation on the Former Tom Nevers Facility, an ordnance project under the Military Munitions Response Program. The first Technical Project Planning meeting was held on Nantucket on Oct. 27, 2011. Field work was conducted from March through June/July 2012. Follow on TPP meetings were held in 2013 and 2014. The Final RI Report has been reviewed/approved along with the Proposed Plan (PP). The Final PP was released to the general public for public comment through Dec. 4, 2014. The public comments were reviewed and addressed in the Responsiveness Summary. Long Term Monitoring is the chosen remedy. A scope of work is being developed for the Nantucket Beach Long Term Monitoring Program. Signs also have been installed at designated beach access locations. The Final Decision Document and other reports are available for review at: <http://www.nae.usace.army.mil/Missions/Projects-Topics/Nantucket-Beach/>.

Nantucket Memorial Airport Area Formerly Used Defense Site (FUDS) (9th CD) – A contract was awarded in September 2014 to conduct a Remedial Investigation on the Former Nantucket Memorial Airport, an ordnance project under the Military Munitions Response Program. The first site visit and Technical Project Planning meeting were held on Nantucket on Sept. 24, 2014. The work was completed in October 2015. The contractor currently is developing the Draft RI Report that will undergo an internal Corps review. The Proposed Plan can be reviewed at: <http://www.nae.usace.army.mil/Missions/Projects-Topics/Nantucket-Memorial-Airport/>.

Naval Fuel Annex (8th CD) – Environmental risk at the site was evaluated during the 1990s and found to be negligible. An updated file review was conducted and a Data Gap Analysis and Path Forward Report were prepared in March 2016. The data gap analysis identified supplemental site characterization sampling required to update the risk assessment and close out the project. The supplemental site characterization sampling was proposed for summer/fall 2016 and included 23 soil borings and installation of 11 monitoring wells to be sampled quarterly for one year. Pending evaluation of the analytical results of the soil and

groundwater samples, it is anticipated the project will be closed out through a Permanent Solution Report, formerly known as Response Action Outcome (RAO), under the MassDEP Massachusetts Contingency Plan (MCP) in FY18.

Osborne Pond (9th CD) – The District completed field investigations in the Pond in July 2008. The Final Remedial Investigation Report was issued in March 2010. The Feasibility Study was issued in January 2011. The Proposed Plan was released for public review and comment on Sept. 6, 2013 and a public meeting was held Sept. 26, 2013 in Bourne. The Proposed Plan is available for review at the Jonathan Bourne Public Library in Bourne and on the Corps website at www.nae.usace.army.mil/Missions/ProjectsTopics/OsbornePond.aspx. A public meeting was held May 13, 2015 in Bourne to discuss implementing the Proposed Plan.

The Site Specific Final Report (SSFR) was approved by EPA and Massachusetts DEP in June 2016, a public meeting and Safety Awareness Training (UXO education) was conducted on July 12, 2016 at JBCC, signage was installed in July 2016 and LTM is on-going.

POL Terminal at the Former Westover Air Force Base, Chicopee (1st CD) – The Westover Bulk Petroleum, Oil and Lubricant (POL) Terminal and Salvage Yard site is currently being investigated. A Phase I/II Comprehensive Site Assessment (final report) was sent to MADEP in December 2007. Follow-up field efforts took place in fall 2008 to address data gaps and complete the remedial investigation effort. A Supplemental Remedial Investigation/ Feasibility Study was submitted to MassDEP in the summer of 2010, which presented the use of enhanced fluid recovery (EFR) to reduce the amount of LNAPL at the site. EFR field efforts were slated to commence in the winter of 2010; however, due to unfavorable site conditions, EFR events were postponed indefinitely. CENAE’s contractor had then been monitoring site conditions through quarterly groundwater gauging events. Four consecutive quarterly groundwater gauging events were conducted in which no LNAPL had been observed in on-site monitoring wells. The A-E firm performing these investigations went out of business; subsequently a new firm (FS Engineering) was brought on board and they conducted two additional rounds of GW sampling. The results were to be used to finalize the Risk Assessments, RAM Closure Report, RAO Statement, and AUL leading to project closure.

The contractor completed the fall groundwater sampling event in September 2014. The USACE team worked with the contractor to develop the scope for additional characterization that is required for closure per the new MassDEP MCP (related to the closure of LNAPL sites) requirements. In March 2015, the task order with FS Engineers was “Terminated for Convenience”. This action was necessary due to the Government not exercising an option year extension (an administrative error which invalidated the FS Engineers’ task order). The Government awarded the uncompleted work (and the additional characterization work necessary to be compliant with the

MassDEP MCP) to a new contractor (T12E) in September 2015. Additional field characterization work was conducted in autumn/early winter of 2016. Quarterly GW sampling events were conducted in 2017.

As a result of the extreme regional drought conditions in the northeast, the lower water table resulted in the appearance of LNAPL in locations previously characterized as clean. Given the expansion of the LNAPL plume, another round of characterization is required to define the nature and extent of dissolved petroleum contamination in groundwater and LNAPL is necessary. This work *was awarded in spring 2018 and rights of entries to perform the work are currently being processed. The field work is scheduled to commence in the summer.* The end goal is to fully characterize the extent of contamination so that a MCP compliant Closure Report may be submitted leading to an approved RAO statement.

In the past number of years, dating back to the program’s start in the mid-1980s, construction contracts have been completed at the following locations:

First District

Westover Light Annex #2, **Granby**
Springfield Armory-Rail, **Springfield**
Chapman Valve Exp, **Springfield**
Westover AFB, **Chicopee**
Westover AFB, **Ludlow**

Second District

Hadley Nike Site
Westover Light Annex #3, **Amherst**
New Salem Gap Filler Annex, **New Salem**
Westover Remote Site, **Shutesbury**

Fourth District

Needham Nike Site
Nike Site PR-19, **Rehoboth**
Swansea Nike Site

Fifth District

Lincoln Nike Site
Fort Strong, **Winthrop**

Sixth District

Beverly Nike Site
Nike Site BO-84, **Burlington**
Danvers/Topsfield, Nike Site
Fort Ruckman, **Nahant**
Nike Site BO-17, **Nahant**
Ipswich Data Collection Lab Annex, **Ipswich**
Nike Site BO-03, **Reading/Wakefield**

Eighth District

East Boston Naval Fuel Annex
Charlestown Navy Yard
Charlestown Navy Yard, Tank Removal
Fort Standish, **Boston**
Fort Warren, **Boston**
South Boston Naval Annex
Hingham School Property, **Hingham**
Fort Andrews, **Hull**
Hingham Army Reserve Training Center
Hingham Naval Ammunition Depot & Annex
Hingham Nike Site
Hingham/Cohasset Naval Ammunition Depot
Nike Site BO-37, **Quincy**
Nike Site BO-40, **Quincy**
Fort Revere, **Hull**
Point Allerton Military Reservation, **Hull**
Point Allerton Surface Craft Detector Site, **Hull**
Quantum Electronics Research Center, **Quincy**

Strawberry Point Fire Control Station, **Scituate**

Ninth District

Camp Candoit, **Cotuit**

Martha's Vineyard Airport

Martha's Vineyard South Beach Moving Target Machine Gun Range and
Cape Poge Little Neck

Camp Wellfleet

Misham Point Electronics Research Annex, **Dartmouth**

Holly Hill Radar Station, **Marshfield**

Nantucket NAVFAC, Tom Nevers Naval Base

Camp Edwards, **Sandwich**

Campbell School, **Bourne**

Work for the U.S. Environmental Protection Agency (EPA)

The New England District provides support to the U.S. Environmental Protection Agency (EPA) Region I (New England) Superfund program. This includes responsibility for site investigations, design work, construction execution, and some operation and maintenance at Federal lead sites. In addition, the District provides other technical assistance (5 year reviews, real estate support, etc.) at removal and national priority list sites being addressed by EPA Region 1.

Superfund Assistance

GENERAL ELECTRIC / HOUSATONIC RIVER, PITTSFIELD (1st CD) – The General Electric (GE) facility encompasses an area of approximately 300 acres along the north bank of the Housatonic River in Pittsfield. Past operations by GE have caused significant contamination with PCBs and other compounds at this facility (soil, groundwater and buildings) and in the Housatonic River. In September 1998, EPA and GE reached an agreement in principle for the environmental and economic restoration of Pittsfield and southern Berkshire County. This agreement was approved by a Consent Decree entered in the U.S. Circuit Court on

Oct. 27, 2000. The New England District has performed over \$100 million in work at the site since that time. Our efforts have included site investigations, the remediation of a 1.5 mile stretch of the river, risk assessments, modeling and oversight of GE activities. In September 2008, we awarded a professional services contract (\$25 million in capacity) to be used to support EPA as they work with GE to address the Housatonic River downstream from Pittsfield. Services currently being provided to EPA include the oversight of field activities being conducted by GE as well as the technical review of designs and reports prepared by GE.

NEW BEDFORD (9th CD) – The New England District has been supporting EPA at this site since the mid-1980s. Currently work is being performed under a fixed price contract with Cashman Dredging and Marine for \$14.9M for dredging with Confined Aquatic Disposal Cell disposal. Dredging in Upper Harbor and Intertidal Areas is being performed under a Remedial Action Contract to Jacobs Services of North America. The process in the Upper Harbor consists of mechanical dredging of sediments, dewatering of the sediments followed by offsite disposal. Subtidal and intertidal remediation is scheduled for completion in 2019.

Support to the Military

JOINT BASE CAPE COD (9th CD) – Support to the Impact Area Groundwater Study Program

In 2000, the National Guard Bureau (NGB) announced its decision to use the Corps as supervisory contractor for the Impact Area Groundwater Study Program (IAGWSP). Investigations and remedial actions are being conducted in accordance with Administrative Orders issued by EPA under the Safe Drinking Water Act. The work is estimated to cost \$300-\$350 million, take 30 years and involves groundwater, soil and UXO investigations and remedial actions and the operation and maintenance of treatment facilities. Avoidance and/or removal of ordnance is incidental to all field work conducted at JBCC.

The following significant actions have been completed.

* 2004-2005: A significant soil cleanup at the Southeast Ranges and Demolition Area 1 was completed in late 2004. Soil was treated on site in a mobile thermal treatment unit. Contaminated soil from other sites also was excavated and treated at this time. All soil was treated by January 2005 and the treatment unit was demobilized in April 2005.

* 2004: Construction of a temporary treatment system to

address the Demo-1 plume. The interim pump and treat system treated groundwater through June 2007. The permanent Demo 1 groundwater treatment facility came on line in late June 2007. The base boundary went on line in June 2011. The leading edge Demolition Area 1 Offsite Treatment Facility was completed in July 2016.

* 2004: Connected three private residences in Bourne to town water. Contamination was a result of past military training at JBCC.

* 2005: The construction of 2 groundwater treatment facilities in the Southeast Ranges of JBCC; the J3 facility, an upgrade/retrofit of an existing groundwater treatment facility, and the construction of a facility at the J2 North Range. Both have been operational since July 2006.

* 2007: Construction of a groundwater treatment facility at the J1S Range was completed in October 2007. An additional extraction well and piping off-site was installed in December 2012.

* 2007: Construction of a groundwater treatment facility at the J2 East, was completed in September 2008.

* 2013: Construction of the J1 Range North Treatment was completed in December 2013.

* 2013: Construction of the Central Impact Area Groundwater Treatment Facility was completed in January 2014.

* 2015: Construction of a leading edge Central Impact Area Groundwater Treatment Facility was completed in April 2016.

* 2015: Construction of the Demolition Area 1 Off-Site Leading Edge Groundwater Treatment Plant was completed in June 2016.

The following OUs have Decision Documents in Place:

* BA-4 Disposal Area and Demolition Area 1 Source Area 2009.

* Demolition Area 2, Northwest Corner and Western Boundary 2010.

* Former A Range and Gun and Mortar Positions 2010.

* L Range 2010.

* J1 Range 2011.

* Central Impact Area 2012.

* J2 Range 2013.

* *Training Areas 2018.*

The following OUs have Demonstration of Compliance Reports in place:

* Western Boundary 2016

* Former A Range 2016

The program partnered with the Air Force Research Laboratory (AFRL) to conduct a robotics technology demonstration and the Environmental Security Technology

Certification Program (ESTCP). ESTCP conducted a classification technology demonstration to evaluate the ability of geophysical tools to discriminate between potential UXO items and frag. This demonstration led to the partnering with the Baltimore District and the Huntsville Center for continued advanced geophysical classification at JBCC using the MetalMapper. MetalMapper was self performed by USACE from 2014-2017. In 2017 a contract was issued by USACE to Parsons to continue MetalMapper under the DoD Advanced Geophysical Classification Accreditation Program (DAGCAP). To date 58 acres have been investigated using MetalMapper technology. Another 10 acres is underway. Use of the MetalMapper technology has reduced the number of anomalies intrusively investigated (dug) by approximately 60%.

Ongoing work consists of site investigations, report preparation and the remedy and optimization and operation and maintenance of the groundwater treatment facilities and source/UXO removal actions.

HANSCOM AIR FORCE BASE (6th CD)—A groundbreaking ceremony for the \$12.5 million design-build new three-story, 66-room, 25,000-square-foot military dormitory was held on March 13, 2017. *The beneficial occupancy date is in November 2018.*

Work began in spring 2017 on the \$36.9 million new Primary School. *The beneficial occupancy date is in August 2019.* *The project consists of demolition of existing primary school, construction of new primary school and associated site work. It will be constructed as an addition to the Middle School building. The size will be approximately 80,000 square feet. The project will use clear span or similar construction methods to allow easier reconfiguration to meet future educational needs.*

Base Realignment and Closure (BRAC)

FORT DEVENS, AYER (3rd CD)—Fort Devens was selected for closure under the Department of Defense BRAC of 1990 (Public Law 101-50). The fort is located in the towns of Ayer and Shirley (Middlesex County) and Harvard and Lancaster (Worcester County), approximately 35 miles northwest of Boston. In 1991, the District began implementing BRAC 91 related environmental restoration work at Fort Devens (the site is on EPA's National Priority List) for the Army BRAC Office. This work continues.

SUDBURY TRAINING ANNEX (5th CD) – The District

completed environmental cleanup of the site in September 2000 and EPA deleted the site from the NPL on Jan. 28, 2002. The District conducts annual field sampling and inspections as part of the Army's long term responsibilities at this site. Sampling and analyses of the groundwater from the monitoring wells began in June 1997 and is presently completed annually in the fall. The District also completes spring and fall inspections of the landfill cap to monitor its protectiveness. The Annual LTMM reports prepared by the District capture the annual results of all groundwater monitoring results and site inspections.

Interagency and International Support

SUPPORT TO THE U.S. DEPARTMENT OF VETERANS AFFAIRS – NAE has teamed up with a sister federal agency in an effort to improve the care Soldiers receive at military hospitals. The U.S. Department of Veterans Affairs (VA) and the Corps entered into an interagency agreement in 2001 for the goods and services the Corps

may provide to the VA when needed. These include project management, design services, construction management services, environmental services, preliminary technical investigations, surveying, and historical presentation compliance at VA facilities. In 2008, the VA started exercising its agreement with the Corps in New England and NAE is

now supporting the VA with services at several VA facilities in New England. In Massachusetts, NAE completed a much needed exterior masonry rehabilitation to Building #2 at the Veterans Administration hospital, the Edith Nourse Rogers Memorial Veterans Hospital, in Bedford. The majority of the masonry work was completed at the end of December 2012. In 2013, work continued to renovate Wards 78F and 78G for an inpatient psychiatric ward, and Ward 2C for a hospice ward at the campus. Renovation was complete in 2014. A subsequent contract was awarded in September 2016 for repairs to the HVAC system in the renovated Wards 78F & G.

NAE awarded a \$3.4 million contract to renovate and expand the Community Based Outpatient Clinic at the VA Medical Center in New Bedford on July 16, 2013. Construction started in late fall of 2013 and was completed in late October 2014. A ribbon cutting ceremony took place on Dec. 22, 2014. Additionally, NAE has completed design and construction projects in Brockton, West Roxbury, Jamaica Plain and Northampton. In Brockton, a Supply, Processing, and Distribution project was completed in September 2013. In Jamaica Plain, a Cryogenics Bio-Repository Unit (BRU) and the building to house it were completed in 2013. In

addition, an approximately 400 space parking garage was constructed to provide needed parking at the Jamaica Plain campus in 2013.

SUPPORT TO THE FOOD AND DRUG ADMINISTRATION

– NAE has teamed up with a sister federal agency in an effort to provide a new facility to perform analyses in support of medical device program and conduct radionuclide, chemical, and microbiological analyses for the Winchester Engineering and Analytical Center (WEAC) in Winchester, Mass.

The FDA and the Corps entered into an interagency agreement in 2016 for a Design-Build (DB) project to construct a new approximately 75,000-square-foot facility. In addition to preparing the Request for Proposal (RFP) package for the requirements of the new building, the Corps performed an Environmental Assessment and the resultant Finding of No Significant Impact (FONSI) was executed in September 2017. The RFP for the DB project was issued in December 2016 and a contractor is expected to be selected for this work in 2018.

Regulatory Program

Department of the Army permits are required from the Corps under Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act, and Section 103 of the Marine Protection, Research and Sanctuaries Act. The Corps reviews permit applications for work affecting navigable waters under its Section 10 authority and the discharge of fill material into all waters, including inland wetlands, under Section 404. A list of Monthly General and Individual Permit Authorizations is provided at www.nae.usace.army.mil/Missions/Regulatory/PermitsIssued.aspx. Relevant environmental documents are available upon written request.

For information on Corps jurisdiction and whether a permit is required for your work contact the Regulatory Division at 978-318-8338 or 978-318-8335 or by email to cenae-r@usace.army.mil or visit the website at: www.nae.usace.army.mil/Missions/Regulatory.aspx.

GENERAL PERMITS – The District has comprehensive Regional General Permits (RGPs) in place for each of the six New England states that authorize work with no more than minimal adverse effect on the aquatic environment. Up to 98 percent of all permits issued in New England are RGPs. Work eligible under the RGPs is generally approved in less than 60 days. The Corps revised the statewide Massachusetts General Permits. For information visit: www.nae.usace.army.mil/Missions/Regulatory/StateGeneralPermits/MassachusettsGeneralPermit.aspx.

NAE has revoked the state-wide General Permits (GPs) for Massachusetts issued on Feb. 4, 2015 and replaced them with new Massachusetts GPs. The February 2015 GPs were revoked on April 16, 2018 pursuant to the Corps regulations

at 33 CFR 325.7(e). The new GPs were issued on April 16, 2018 pursuant to 33 CFR 320-332. The new GPs will continue to authorize activities in waters of the U.S. within the boundaries of, and off the coast of, the Commonwealth of Massachusetts, excluding work within the boundaries of Indian Tribal lands, that are subject to Corps jurisdiction pursuant to Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 1899, and Section 103 of the Marine Protection, Research and Sanctuaries Act.

The Massachusetts GPs are available for viewing and download at the Corps website: <http://www.nae.usace.army.mil/Missions/Regulatory/StateGeneralPermits/MassachusettsGeneralPermit.aspx>

The Corps published two public notices to announce the proposed actions and request comments on June 7, 2016 and Sept. 15, 2017. The Corps is issuing new GPs and revoking the 2015 GPs in advance of their Feb. 4, 2020 expiration date in order to improve the GPs by making them more user-friendly and result in less Regulatory burden for the regulated public and the Corps while maintaining the same level of protection for the aquatic environment and the public interest. The new GPs retain the function and utility of the existing GPs, continue the expedited review process for the Corps Regulatory program in Massachusetts, and will not result in significant substantive changes to how activities in waters of the U.S. are regulated in Massachusetts. The new GPs will have an expiration date of April 5, 2023, which coincides with the expiration date of the 401 Water Quality Certification.

The February 2015 GPs were revoked on April 16, 2018. As a result: 1) For activities self-verified under the 2015 GPs, the

Corps must have received the Self-Verification Notification Form no later than April 16, 2018, and these activities must commence (i.e., be under construction) or be under contract to commence before Feb. 4, 2020. Permittees have until Feb. 4, 2021 to complete the activity under the terms and conditions of the 2015 GPs. The permittee must be able to document to the Corps' satisfaction that the project was under construction or under contract by the appropriate date. 2) Activities that required a preconstruction notification (PCN) and were verified by the Corps in writing under the 2015 GPs must commence (i.e., be under construction) or be under contract to commence before Feb. 4, 2020. Permittees have until Feb. 4, 2021 to complete the activity under the terms and conditions of the 2015 GPs. The permittee must be able to document to the Corps' satisfaction that the project was under construction or under contract by the appropriate date.

For additional information on the Massachusetts GPs (file # NAE-2016-00599) contact the U.S. Army Corps of Engineers, New England District, Regulatory Division (ATTN: Greg Penta), 696 Virginia Road, Concord, MA 01742-2751; or by email: gregory.r.penta@usace.army.mil.

THIRD PARTY MITIGATION – In April 2008, the Corps and EPA issued regulations (33 CFR Part 332 Compensatory Mitigation for Losses of Aquatic Resources; Final Rule) on mitigation which became effective in June 2008. These regulations established a “soft” preferential order for mitigation types with mitigation banking and in-lieu fee (ILF) programs preferred over permittee-responsible mitigation. This is the reverse of previous guidance, now obsolete.

Operating Flood Risk Management Projects & Recreation/Natural Resource Management

The District provides flood risk management project benefits and, in cooperation with state agencies, provides diverse quality outdoor recreational opportunity at the 11 flood risk management reservoirs it has constructed in the Bay State, the Cape Cod Canal, and the Charles River Natural Valley Storage Area. Information on each is provided below. For information on Corps recreation in New England visit www.nae.usace.army.mil/ and select “recreation.”

BARRE FALLS DAM (2nd CD), on the Ware River in Barre, was completed in 1958 at a cost of \$2 million. The 885-foot-long, 62-foot-high dam with 3 dikes totaling 3,215 feet can store 7.8 billion gallons of water. Since being constructed it has prevented \$54.9 million in flood damages. Major contracts for aging infrastructure in 2018 include the continuation of concrete repair work on spillway retaining walls, apron, and inlet retaining walls; roof replacement of storage garage for operations and maintenance equipment.

Activities available include canoeing, picnicking, picnic shelter rental, volleyball, 18-hole disc golf course, fishing, geocaching, hiking, bike riding, snowmobiling and horseback riding (in restricted areas), wildlife observation,

These new regulations have provided impetus to potential sponsors of banks and ILF programs.

On Sept. 26, 2012, the Massachusetts Department of Fish and Game (DFG) submitted a prospectus for an In Lieu Fee (ILF) program to provide an alternative form of compensatory mitigation for permit applicants throughout the Commonwealth of Massachusetts. Applicants would pay a fee for impacts which would be used by the ILF sponsor to develop ecologically suitable and appropriate mitigation sites in the same watershed as the impacts. A public notice on the prospectus for the expanded program was issued on Oct. 2, 2012. The final ILF instrument was signed by DFG and the Corps on May 23, 2014. The program is now available for use by applicants for Corps permits and authorizations. The Steering Committee monitors the progress of all the projects. The first project under the current ILF program, an eelgrass restoration project, was approved on Dec. 23, 2016 and the work was completed in 2017. DFG is in the process of developing a list of potential projects for all the service areas in the state.

A small pre-Mitigation Rule program where permittees qualifying for a general permit with impacts in Essential Fish Habitat could choose to make a payment to a fund overseen by the Division of Marine Fisheries (DMF), a division within the DFG, expired June 9, 2013. No additional payments can be accepted by DMF. The Steering Committee approved four projects for funding. Three of the projects were started in 2013. A fourth, a fish ladder at Draka Dam, is expected to start in 2018.

scenic viewing and cross country skiing in season from sunrise to sunset. Hunting is permitted in accordance with the Mass Fish & Wildlife rules and regulations. Activities that are coordinated with the Massachusetts DCR include rules, regulations, and designated trails for the 26,000-acre Upper Ware River Watershed. For scheduling events call (978) 928-4712; to arrange a group tour contact Park Ranger Brianna Green, Barre Falls Dam, Hubbardston, Mass.; (phone: 978-318-8263); brianna.j.green@usace.army.mil; or visit www.nae.usace.army.mil/Missions/Recreation/BarreFallsDam.aspx.

BIRCH HILL DAM (2nd CD) is situated on the Millers River in Royalston. Completed in 1942 at a cost of \$4.8 million, the 1,400-foot-long, 56-foot-high dam can store 16.2 billion gallons of water. To date, damages amounting to more than \$80.3 million have been prevented. Birch Hill Dam is popular for walking, biking, fishing, paddling and picnicking. Most of the 4,400-acre property is leased to the state for recreation, and fish and wildlife purposes. A baseball field located in Baldwinville is operated by Narragansett Area Youth Baseball. About 25 miles of snowmobile trails are maintained by the Coldbrook Snowmobile Club. The Lake Dennison

Recreational Area, managed by the Massachusetts Department of Conservation and Recreation, provides camping, swimming, picnicking, boating and fishing. The Massachusetts Division of Fisheries and Wildlife manages much of the remaining reservoir as part of the Birch Hill Wildlife Management Area. Popular activities include hiking, hunting, fishing, mountain biking, snowmobiling, and cross country skiing. There is a fish consumption advisory on the Millers and Otter Rivers due to polychlorinated biphenyls (PCBs) from past paper mill pollution. The Birch Hill Dam and reservoir area attract more than 185,000 visitors annually. For details call 978-318-8224 or visit www.nae.usace.army.mil/Missions/Recreation/BirchHillDam.aspx.

The Lake Dennison Campground is operated under a lease by the Massachusetts Department of Conservation and Recreation. The campground offers 150 drive-in campsites, restrooms with showers and drinking water. For details, call (978) 939-8962 or visit <https://www.mass.gov/locations/lake-dennison-recreation-area>.

Controlled releases of water were made from Birch Hill Dam and Tully Lake Dam, both in Royalston, Mass., on April 14-15, 2018 to provide adequate river flows for recreational canoeing, kayaking and rafting on the Millers River.

BUFFUMVILLE LAKE (1st CD) on the Little River in Charlton was completed in 1958 at a cost of \$3 million. The 12,700 acre-feet of storage at Buffumville is equal to 3.9 billion gallons of water and is impounded by a 3,255-foot-long, 66-foot-high earthen dam. Buffumville Dam has prevented more than \$133.7 million in cumulative damages, through *March 2018*. Picnicking, swimming, boating, fishing, hunting, a 27-hole disc golf course, volleyball, horse-shoes, two rental shelters and sight-seeing are just some of the activities visitors can enjoy at Buffumville Lake. Portions of Buffumville Park are handicap accessible.

The team at Buffumville Lake has concentrated on repairing, replacing and revitalizing aging infrastructure with as much in-house labor as possible and writing and executing contracts. The *new* CXT restroom facility at Buffumville Park *debuted on the 4th of July to grand reviews and record crowds*. Upcoming contracts include Buffumville Lake Herbicide Treatment and the purchase of a new project boat.

Volunteer and interpretive events can be found at: www.nae.usace.army.mil/Missions/Recreation/BuffumvilleLake.aspx or call (508) 248-5697. *Victory Gardens For Bees! Meet Park Ranger Nicole and Entomologist Christine He-lie at Buffumville Boat Ramp on August 18th at 10 a.m. to learn about pollinators, good bugs that keep your garden healthy, native plants that are yummy for bees and help us Release Monarchs! This is a TBD program on the Junior Ranger Passport.*

CAPE COD CANAL (9th CD) – The Cape Cod Canal, one of the widest sea-level canals in the world, extends 17.4 miles across the narrow neck that joins Cape Cod to the mainland. The Corps operates and maintains the Canal from a field office in Buzzards Bay, about 50 miles south of Boston.

The canal, with a 32-foot-deep by 700-foot-wide approach channel, saves commercial and recreational vessels 65-150 miles from the route around Cape Cod and the Nantucket shoals, where shoals and treacherous currents have made navigation hazardous for centuries. The toll-free waterway, with two mooring basins, is open for passage to all vessels that are properly equipped and seaworthy. Private interests sold the Canal to the U.S. government in 1921 for \$11.5 million (title obtained in 1928). Responsibility for operating and maintaining the Canal was assigned to the Corps, which has maintained and improved it since then. In 1933, three bridges were authorized and constructed over the Canal – the Sagamore and Bourne highway bridges and the Railroad Bridge at Buzzards Bay. The Corps operates and maintains all three bridges. More than three million visitors annually enjoy the Canal and its adjacent lands for diverse outdoor activities, including interpretive programs run by Corps rangers, and the Canal Visitor Center. Service roads are popular for biking, hiking, roller blading and walking. The Marine Traffic Control Center monitors and controls vessels transiting the canal and monitors vessels in Buzzards Bay in accordance with a memorandum of agreement with the Coast Guard. For details call 978-318-8816 or the Visitor Center at 508-833-9678 or visit www.nae.usace.army.mil/Missions/Recreation/CapeCodCanal.aspx.

CHARLES RIVER NATURAL VALLEY STORAGE AREA (CRNVS) (2nd, 4th, 5th & 8th CDs) was authorized by Congress in March 1974. Federal funds of \$8.3 million were used to purchase 3,210 acres of fee land and 4,891 acres of restrictive easement. The CRNVS is located in 16 towns (Bellingham, Dedham, Dover, Franklin, Holliston, Medfield, Medway, Millis, Natick, Needham, Newton, Norfolk, Sherborn, Walpole, West Roxbury and Wrentham) and lies within three counties. The CRNVS area acts as a flood control project by using the natural flood attenuation characteristics of the over 8,000 acres of wetlands purchased. The project attracts over 60,000 visitors a year. Visitors can bike, boat, fish, hike, hunt, view wildlife and partake in other passive recreational uses. The field office for the CRNVS Area is located at the West Hill Dam Project Office in Uxbridge. Staff patrol, investigate and resolve real estate inquiries, boundary inquiries, and requests for leases, licenses and easements. Staff provide the town and other agencies with assistance in the CRNVS area. For details call (508) 278-2511 or visit www.nae.usace.army.mil/Missions/CivilWorks/FloodRiskManagement/Massachusetts/CharlesRiverNVS.aspx.

CONANT BROOK DAM (1st CD), on the brook of the same name in Monson, can store 1.2 billion gallons of water behind the 1,050-foot-long, 85-foot-high impoundment. Completed in 1966 at a cost of \$3 million, the project annually attracts about 20,000 visitors to its scenic trails for hiking, horseback riding, cross-country skiing and for its fine trout fishing. Since placed in operation, Conant Brook has prevented damages of more than \$3.3 million. For details visit www.nae.usace.army.mil/Missions/Recreation/ConantBrookDam.aspx or call (508) 347-3705.

EAST BRIMFIELD LAKE (1st CD) on the Quinebaug

River in Sturbridge was constructed at a cost of \$7.1 million. The 520-foot-long, 55-foot-high dam can impound a 29,900-acre-foot reservoir, which is equivalent to 9.7 billion gallons of water. Since placed in operation in 1960, it has prevented damages of \$132.2 million. The reservoir area offers fine recreational opportunities, including swimming, picnicking, fishing, hunting, canoeing, boating and nature study and attracts more than 124,000 visitors annually. For details visit www.nae.usace.army.mil/Missions/Recreation/EastBrimfieldLake.aspx or call 508-347-3705.

HODGES VILLAGE DAM (2nd CD), across the French River in Oxford, was constructed at a cost of \$4.5 million. The 2,140-foot-long, 55-foot-high dam can impound a 13,200-acre-foot reservoir, which is equivalent to 4.2 billion gallons of water. Since placed in operation in 1959, it has prevented more than \$162.7 million in cumulative damages, through *March 2018*. The reservoir area offers fine recreational opportunities, including picnicking, fishing, hunting, mountain bike and horseback riding and nature study to its visitors. There is a 9-hole disc golf course.

The team has concentrated on repairing, replacing and revitalizing aging infrastructure with as much in-house labor as possible and writing and executing contracts. Upcoming projects include a new gate tower roof and electrical upgrade to the service and the gate tower Bridgeport replacement. Work continues on a new Master Plan.

Volunteer and interpretive events are listed on the website at: www.nae.usace.army.mil/Missions/Recreation/HodgesVillageDam.aspx or call (508) 248-5697. *The 27th National Public Lands Day, our largest volunteer, 1-day event is Sept. 29, 2018 from 8 a.m. until 12 noon. Pre-registration is 508-248-5697 or Jamie.r.kordack@usace.army.mil. Four TLGV Walking Weekend events also are scheduled for the first two weeks in October. For more information, please call Park Ranger Jamie at 508-248-5697.*

KNIGHTVILLE DAM (1st CD), on the Westfield River in Huntington, was constructed at a cost of \$3.3 million. The 1,200-foot-long, 150-foot-high dam can impound a 49,000-acre-foot reservoir (equivalent to 15.8 billion gallons of water). Since its construction in 1941, it has prevented damages of \$338 million. More than 41,000 visitors enjoy the variety of recreational pursuits available at Knightville, including picnicking, hiking, fishing, hunting, horseback riding and cross country skiing and snowmobiling in season. A major project to replace outdated electrical equipment, including all main breaker boxes, transfer switches and wiring was carried out in 2016.

The Indian Hollow Group Campground: the campground includes two group site loops that accommodate up to 150 people each, a waterborne comfort station with hot showers, drinking water, hiking trails and a riverside environment. The North loop may be reserved for a fee of \$90 per night and the South loop for a fee of \$85 per night. Both loops may be reserved for a fee of \$175 per night. Reservations are on a first-come, first-serve basis and one or both loops may be reserved. Reservations may be made through the National

Recreation Reservation Service at www.recreation.gov or by calling 1-877-444-6777. For up-to-date information call (413) 667-3430 or visit the website at www.nae.usace.army.mil/Missions/Recreation/KnightvilleDam.aspx.

A contract to repair the Indian Hollow Bridge was awarded to J&J Contractors, Inc. on Sept. 18, 2017 in the amount of \$45,195.00. *Work on this project was completed in early June and the bridge is open to traffic.* A contract for the abatement of lead paint from the interior of the gatehouse tower was completed in April. *Work on this contract was done by Baystate Contracting Services of Springfield in the amount of \$68,500.00. The emergency backup generator in the gatehouse tower was replaced in February. This work was completed by Powers Generator of Framingham, Mass. for \$22,600.*

The project's 5-year Periodic Inspection, and its first Periodic Assessment, were conducted on May 7th.

Controlled releases of water were made from Knightville Dam and Littleville Lake Dam in Huntington, Mass., on April 21-22 to provide adequate river flows for recreational canoeing, kayaking and rafting on the Westfield River. *All recreation facilities are now open to public use for the summer season.*

Improvements and repairs to the electrical and water systems at the Indian Hollow Campground were completed in June. These repairs were completed without disruption to campground operations.

Upcoming projects include the replacement of the project's debris boom, replacement of the hoist cables on the dam flood gates, and replacement of the fuel tank system for the gatehouse generator and heating system.

LITTLEVILLE LAKE (1st CD), on the Middle Branch of the Westfield River in Huntington and Chester, is 1,360 feet long, 164 feet high and cost \$6.8 million to construct. The reservoir can hold a 23,000-acre-foot pool or 7.5 billion-gallons. It has prevented damages totaling \$152.8 million since placed in operation in 1965. The reservoir area offers many recreational opportunities including picnicking, fishing, hunting, canoeing, boating, nature study and cross country skiing and snowmobiling (on marked trails) in season, and attracts more than 39,000 visitors annually. A major project to replace outdated electrical breaker boxes and transfer switches was carried out in 2016.

Special interpretive programs are offered and include such topics as water safety, the water cycle, the history of the Corps and flood damage reduction. Rangers also can prepare a program that deals with the Corps and its missions, water resources or natural resources and tailor it to your needs. These programs can be given at the dam, or we can come to your group or school. Contact the park ranger for more information on any of these programs or to schedule a program. For details call (413) 667-3656 or visit www.nae.usace.army.mil/Missions/Recreation/LittlevilleLake.aspx.

A contract to replace a number of broken steel tie-down straps on the water supply pipeline was awarded to Dreamworks Contracting, LLC in September 2017 in the amount of \$71,800.00. *This work was completed in April 2018.*

The windows on the project office building were replaced in June by Beaulieu & Sons of Chicopee, Mass. for \$11,065. Planning has begun for work to replace the main electrical service to the project, and for replacement of the power distribution system at the project office and the water supply intake tower. Upcoming work includes rehabilitation and inspection of the dam's overhead cranes, upgrades to the project office heating and cooling system, and drainage improvements at the reservoir boat ramp.

Controlled releases of water were made from Littleville Lake Dam and Knightville Dam in Huntington, Mass., on April 21-22 to provide adequate river flows for recreational canoeing, kayaking and rafting on the Westfield River.

The project's recreation facilities are open for the summer season.

THE NEW BEDFORD-FAIRHAVEN-ACUSHNET HURRICANE PROTECTION PROJECT (9th CD) was completed in 1966 at a cost of \$18.6 million and provides a gated barrier across New Bedford-Fairhaven Harbor and supplementary dikes in the Clarks Cove area of New Bedford and Fairhaven. The twin sector gates can seal the 150-foot-wide navigation opening in 12 minutes. This barrier affords tidal-flood protection to an area of about 1,400 acres. The Project has prevented approximately \$25 million in flood damages through the end of FY 2013. Design on a project to replace and repaint portions of the sector gates at the New Bedford Hurricane Barrier was started in September 2017.

TULLY LAKE (2nd CD), situated on the East Branch of the Tully River in Royalston, is 1,570 feet long and 62 feet high. Completed in 1949 at a cost of \$1.7 million, the dam has a reservoir storage capacity of 7.1 billion gallons of water. Tully Lake has prevented damages of \$29.1 million. Over 100,000 visitors annually enjoy picnicking, hiking, boating, mountain biking, disc golfing, fishing, hunting and cross country skiing. For details call (978) 318-8907 or visit www.nae.usace.army.mil/Missions/Recreation/TullyLake.aspx.

The Tully Campground is operated under a lease by The Trustees of Reservations. The campground offers 36 primitive walk-in or boat-in campsites, restrooms with showers, drinking water, and hiking trails. For details, call the Trustees of Reservations at (978) 249-4957 or (978) 840-4446 or visit www.tullylakecampground.org.

Controlled releases of water were made from Tully Lake Dam and Birch Hill Dam, both in Royalston, Mass., on April 14-15, 2018 to provide adequate river flows for recreational canoeing, kayaking and rafting on the Millers River.

WEST HILL DAM (2nd CD), on the West River in Uxbridge, was completed in 1961 at a cost of \$2.3 million. The 2,400-foot-long, 51-foot-high dam can impound a 12,400-acre-foot lake capable of storing four billion gallons of water. The Dam was designed to protect communities on the West River and Blackstone River basins in Massachusetts and Rhode Island. It has prevented damages of more than \$100.8 million. More than 90,000 annual visitors enjoy picnicking, swimming, hiking, fishing and hunting at the 1,401-acre facility. Special interpretive programs are offered and include such topics as water safety, the water cycle, the history of the Corps and flood damage reduction. Rangers also can prepare a program that deals with the Corps and its missions, water resources or natural resources and tailor it to your needs. These programs can be given at the dam, or we can come to your group or school. Contact the West Hill Dam ranger team to learn more. For more information, current events, upcoming programs, or shelter reservations, call (508) 278-2511 or visit the website at www.nae.usace.army.mil/Missions/Recreation/WestHillDam.aspx.

WESTVILLE LAKE (1st CD) dam in Southbridge and Sturbridge is 560 feet long and 78 feet high and cost \$5.7 million to construct. Its lake can store an 11,100 acre-foot reservoir, which amounts to 3.6 billion gallons of water. It has prevented damages totaling \$53.7 million since placed in operation in 1962. The reservoir area offers recreational opportunities, including picnicking, fishing, hunting, canoeing, boating, and nature study and annually attracts more than 55,000 visitors. Call (508) 347-3705 or visit www.nae.usace.army.mil/Missions/Recreation/WestvilleLake.aspx.

