US Army Corps of Engineers ®
New England District

Update Report for Massachusetts

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Mission

The missions of the New England District of the 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, streambank 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, with 6,100 miles of coastline, 170 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 2,500 applications per year for work in waters and wetlands of the six-state region. We employ about 500 professional civilian employees with about 300 stationed at our headquarters in Concord, Massachusetts. Other USACE employees serve at project sites and offices throughout the region.
For more information, visit our website at: www.nae.usace.army.mil; or check us out on Twitter at: twitter.com/corpsnewengland or on Facebook at: facebook.com/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). 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 mean lower low water (MLLW), the deepening of the Main Ship Channel (MSC), President Roads Anchorage and lower Reserved Channel to -47 feet MLLW, 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 MLLW, and deepening of the Chelsea River Channel to -40 feet MLLW. About 11.7 million cubic yards of ordinary material and 200-500 thousand cubic yards of weathered rock will need to be removed to deepen these channels. These improvements will cost about $340 million, of which the non-federal sponsor (Massport) will be required to contribute about $130 million. A $122.2 million contract was awarded on Feb. 15, 2018. The notice to proceed was issued on May 29, 2018. A preconstruction meeting was held on June 13, 2018. Dredging started on July 9, 2018.

As of October 2020, the contractor dredged 11.31 million cubic yards of sand, clay, till and rock out of an estimated total 11 million cubic yards of material needed to be dredged. Dredging is expected to be complete in mid-November 2020. The last phase of the deepening project, including final rock removal, was advertised Oct. 14, 2020. Dredged material from the improvement project is being beneficially reused for the restoration of the former Industrial Waste site (IWS) located in Massachusetts Bay. The District's Disposal Area Monitoring System (DAMOS) program and United States Environmental Protection Agency (EPA) Region 1 developed a strategy to restore an area of the IWS with exposed waste containers and debris by sequentially placing dredged material from the Boston Harbor improvement project. As of October 2020, the DAMOS program directed the targeted

placement of nearly all of the 11.31 million cubic yards of material dredged to date and covered the entire footprint of the originally targeted restoration area. The DAMOS program performed a baseline bathymetric survey of the IWS in 2015 and supplemental bathymetric surveys in August 2018, October 2018, March 2019, June 2019, and September 2019 to monitor the restoration effort. In conjunction with EPA, the DAMOS program will continue to perform monitoring surveys throughout the improvement project.

CAPE COD CANAL BOURNE AND SAGAMORE HIGHWAY BRIDGES (9th CD) –The District conducted 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 84 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) evaluated 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. The MRER is comprised of four elements: 1) structural risk and reliability analysis of the bridges; 2) cost estimates for rehabilitation and/or replacement alternatives; 3) economic benefits of the alternatives; and 4) environmental effects of the alternatives. The Major Rehabilitation Evaluation Report is available for review at https://www.CapeCodCanalBridgesStudy.com under the "Documents" tab.

ESSEX RIVER, ESSEX (6th CD) – The town of Essex requested the District evaluate the beneficial use of material from the anticipated maintenance dredging of the Essex River. A federal interest determination was developed and approved by North Atlantic Division in December 2016. A Section 204 study was initiated in the fall of 2018 to examine the beneficial use of dredged material from the next maintenance of the Essex River federal navigation project (FNP). The District is working towards having a draft detailed project report for 2021.

GLOUCESTER HARBOR & ANNISQUAM RIVER (6th CD) –The Congressionally authorized FNP is eight feet deep Mean Lower Low Water (MLLW) and 60 feet wide from Western Harbor to the MBTA Bridge, and then 100 feet wide to the river's mouth, and 200 feet wide across the bar in Ipswich Bay. It also includes an anchorage area eight feet deep MLLW and approximately 17 acres at the entrance to Lobster Cove. Approximately 140,000 cubic yards of sediment are required to be dredged from the project to return the project to authorized and maintained dimensions. Dredge material will be placed at either the Massachusetts Bay disposal site (MBDS), Ipswich Bay Nearshore disposal site (IBNDS), or the Gloucester Harbor disposal site (GHDS).

The work will be performed by a private contractor utilizing a mechanical bucket dredge with scows under contract to the government. Construction is expected to take 4-6 months to complete between approximately Oct. 1, 2019 and Feb. 15, 2021.

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 million was identified in the fiscal year 2016 work plan to conduct repairs. A contract was awarded May 17, 2018. Work was completed in October 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 were 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. An Initial Appraisal Report of navigation improvements at Lynn Harbor found that sufficient benefits likely exist to warrant continuation of the feasibility study. The Army Corps' North Atlantic Division gave approval to proceed with the feasibility study on March 5, 2013. A feasibility cost share agreement (FCSA) was negotiated with the city of Lynn and executed on May 23, 2019. The study is ongoing and could be completed within about 36 months of FCSA execution.

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 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 constructing a confined aquatic disposal (CAD) cell within New Bedford inner harbor. Potential cell locations in the harbor are very limited as most areas were already taken by EPA's superfund project and the city/state berth dredging projects. A Massachusetts state DMMP completed in 2004 by the Massachusetts Office of Coastal Zone Management (MACZM) made a comprehensive review of disposal alternatives before determining that CAD cells were a least costly environmentally acceptable disposal option for the harbor.

PLUM ISLAND NORTH POINT, NEWBURYPORT (6th CD) – A Section 204 study was initiated in March 2019 to examine the beneficial use of dredged sand from the next maintenance of the Newburyport Harbor entrance channel to nourish the beach on the south side of the inlet. A federal interest determination was developed and approved by the Army Corps' North Atlantic Division. Additional funds were received, and the feasibility project is continuing. The District is working towards a draft detailed project report later in 2020.

PLYMOUTH HARBOR (9th CD) – The District is proposing to reconstruct a 2,350-foot-long section of Plymouth Long Beach Dike along the barrier beach known as Plymouth Long Beach. Preliminary investigations are underway. Proposed reconstruction will take place during the year(s) funding becomes available.

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 million was identified in the fiscal year 2016 work plan to effect repairs. A contract was awarded May 8, 2018. Work began in 2018 and was completed in 2019.

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 fiscal year 2017 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) – The city of Boston has requested that USACE undertake a streambank protection project, authorized under Section 14 of the 1946 Flood Control Act, as amended, for a reach of the Chelsea River in East 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 non-federal 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. A Project Partnership Agreement is expected to be signed by the sponsor early in 2020. Design work is expected to begin shortly after, subject to the availability of funding.

NANTASKET BEACH, HULL (8th CD) – In 2018, under Section 103 (1962 River and Harbor Act, as amended) of the Continuing Authorities Program, the District and Massachusetts Department of Conservation and Recreation (MADCR) partnered and constructed a 2,200-linear-foot stone revetment to complete toe protection along a 6,000-linear-foot sea wall at Nantasket Beach in Hull. Future improvement dredging of the Portsmouth federal navigation project in Portsmouth, New Hampshire has created a potential opportunity to reinforce and

increase coastal storm risk reduction at Nantasket Beach by potentially serving as a source of clean beach fill material that could be placed on top of the revetment. The District is proceeding with a Beneficial Use of Dredge Material study conducted under the authority of Section 204 (1992 Water Resources Development Act). This study is being conducted by the District in order to establish an initial benefit cost ratio for hauling, pumping, and grading the material from Portsmouth onto Nantasket Beach. A federal interest determination is in review and a feasibility study is expected to begin in 2020.

Coastal Storm Damage Reduction

CAPE COD CANAL, SANDWICH, MA (9th CD) – This investigation is examining the impact that the Cape Cod Canal, specifically the east end jetties, have on the down drift shoreline along Town Neck Beach and Spring Hill Beach. Since erosion is presumed to have been exacerbated by the federal navigation project, this study intends to quantify the extent of damage caused by the project and then recommend solutions for mitigating those damages. A draft report is expected to be completed in July 2020 and in public review in August 2020.

PLUM ISLAND SOUTH BEACH, NEWBURY (6th CD) – A feasibility cost-sharing agreement was executed on April 12, 2019 with the town of Newbury to conduct a Section 103 feasibility study of the section of Plum Island located south of the center island turnpike groin. This is an area where five homes were lost to winter storm erosion in 2015. The feasibility study should be completed within two years. A site visit was conducted in June 2019. H&H modelling is currently underway. The District is working towards a draft detailed project report later in 2020.

SALISBURY BEACH, SALISBURY, MA (6th CD) – Salisbury Beach sustained extraordinary storm damage during major winter storms in March 2018. This damage caused beach erosion and loss of sand that had been placed on this beach in 2010 by USACE through its beneficial use of dredge material program, authorized under Section 204 of the 1992 Water Resources Development Act, as amended. The District is proceeding with storm damage repair work of the beach under the authority of Public Law (PL) 84-99, Flood and Coastal Storm Emergencies (33 U.S.C. 701N) (69 Statute 186), which authorizes the Chief of Engineers, acting for the Secretary of the Army, to provide emergency and disaster assistance after major storms. The District has identified repair work to include placing 31,000 cubic yards of sand on the beach to replace sand eroded away during the storms. The District plans to complete a project information report for the PL84-99 project in 2020. The District then plans to implement the repair work in 2020 or 2021, subject to federally appropriated funds for the project.

Flood Damage Reduction

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 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.

Section 522 of the Water Resources Development Act (WRDA) of 2000 authorized the District to, "carry out the project for flood damage reduction and environmental restoration, Muddy River, Brookline and Boston, Massachusetts," substantially in accordance with the plans, and subject to concurrence it met federal guidelines. District 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. The District 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 1 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 July and August 2016, final inspection and correction of punchlist 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 1 completion of the project. Contract for the construction of Phase 2 was awarded Feb. 26, 2020. Since that time, the contractor has been steadily working on administrative and technical submittal submissions. The contractor mobilized on site in early July to perform site preparations – construction trailers; temporary fencing; temporary access roads; and sedimentation control; etc. Dredging began in early October 2020 and the project will last for 3 years. For more information on this project, visit the District website: https://www.nae.usace.army.mil/Missions/Projects-Topics/Muddy-River/

Ecological Restoration/Watershed Management

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 longshore transport of sand, the effects associated with jetties and groins, historic and projected erosion rates, and dredging and disposal practices. The District 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 USACE to partner with The Nature Conservancy (TNC). A feasibility study was initiated with TNC in 2008. The study investigated 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 final report was completed in 2018 and is available at: https://www.nae.usace.army.mil/Missions/Projects-Topics/Connecticut-River/

GULF OF MAINE INITIATIVE – The 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 United States and Canada can partner through the Gulf of Maine program.

LONG POINT DIKE ECOSYSTEM RESTORATION (9th CD) – The town of Provincetown requested District assistance with restoring ecological resources in the West End Marsh under Section 1135 – Project Modifications to Improve the Environment Program. The District 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. A draft report was completed and reviewed in 2015; however, concerns raised during the public comment period have resulted in the need to conduct additional hydrodynamic modeling of the system relative to potential dune breaching.

Consequently, a feasibility cost sharing agreement needs to be established in order to continue the effort. A scope of work is currently being prepared in order to establish a study cost and sign an agreement.

MALDEN RIVER ECOSYSTEM RESTORATION PROJECT (7th CD) – In October 2002, USACE 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 District executed the project partnership agreement (PPA) on Oct. 8, 2009 to prepare the plans and specifications for the project, which will restore freshwater wetlands along the banks of the river. The District and sponsor have concluded that much of the restoration work is being constructed by others so the project with the District will be terminated in 2020.

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% federal/25% non-federal) cost sharing. The draft Merrimack River Watershed Assessment Summary report will be available for public review in September 2020.

MILL POND AQUATIC ECOSYSTEM RESTORATION, LITTLETON (3rd CD) – The town of Littleton requested that the District 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 USACE 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 six feet deep to three 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, increase water depth, and address invasive aquatic plants. The District 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. The District and the town of Littleton, as non-federal sponsor, executed a feasibility cost sharing agreement on Sept. 27, 2016 to proceed with the study. The Army Corps plans to complete a draft detailed project report for public comment in 2020.

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.

SANTUIT RIVER AQUATIC ECOSYSTEM RESTORATION, MASHPEE (9th CD) – The Mashpee Wampanoag Tribe requested that the Army Corps conduct a study of Santuit River basin to investigate alternatives to restore the aquatic ecosystems of this 1,400-acre watershed. The study will focus on improving anadromous fish habitat in the Santuit Pond and river channel. This study is being conducted under the USACE Aquatic Ecosystem Restoration Program, Section 206 of WRDA of 1996, as amended. The aquatic habitat of Santuit Pond is degraded as a result of sedimentation and excessive nutrient loads into the pond. The Army Corps and the Mashpee Wampanoag Tribe executed a feasibility cost sharing agreement (FCSA) on Jan. 30, 2019 to conduct a feasibility study to formulate and assess measures to restore the aquatic ecosystem of the Santuit River basin. The District plans to prepare a draft detailed project report for public review in 2021.

SMELT BROOK, WEYMOUTH/BRAINTREE (8th CD) – The towns of Quincy and Braintree requested District assistance with restoring fish passage in Smelt Brook tributary to the Weymouth-Fore River under Section 1135 – Project Modifications to Improve the Environment Program. The Army Corps completed a federal interest

determination in November 2015. The feasibility study began in the summer of 2019 and the proposed feasibility study is developing an array of alternatives to restore anadromous fish passage which was adversely impacted through the construction of the Smelt Brook Local Protection Project (LPP) in the mid-1970s.

Planning Assistance to States Program

NEW CHARLES RIVER DAM, SCOPING STUDY, BOSTON, MA (8th CD) – The New Charles River Dam is located on the Charles River, between the Charlestown and North End sections of Boston. The Charles River Dam Project was authorized by the Flood Control Act of August 13, 1968 (PL 90-483). Project purposes included flood control, navigation, fish passage, and recreation. The project was completed by USACE in May 1978 at a cost of $61.3 million. The Massachusetts Department of Conservation & Recreation (DCR) has been operating and maintaining the project successfully over the past 40 years. The project provides critical flood risk management to about 2,440 acres of urban property along the banks of the Charles River. Much of this property is located in Boston, Brookline and Cambridge.

The dam forms a tidal barrier between Boston Inner Harbor and the Charles River. The impoundment upstream of the dam is known as the Charles River "Basin". The Basin extends 8.6 miles upstream to the Watertown Dam. Water level of the Basin is maintained within targeted elevations through dam operation. Water levels in the harbor vary with the tides. When the water level is lower in the harbor than in the Basin, the two submerged flood control sluiceways are used to drain Basin waters (gravity drainage). When the water level is higher in the harbor than in the Basin, one or more flood control pumps may be used to drain Basin waters.

The purpose of this study is to provide technical assistance to the non-federal sponsor DCR in the assessment of the adequacy of the New Charles River Dam to meet changing climate conditions. This technical assistance is in support of the Commonwealth's water resources management planning associated with changing hydrologic conditions, climate change, long-term sustainability, and resilience. The first phase, a scoping study includes gathering background information on the Charles River Dam and identifying and selecting, tasks, methodologies and models to be used for the climate assessment. The Phase 1 scoping study began in the summer of 2020. For more information on USACEs' Planning Assistance to States program, visit the District website at: https://www.nae.usace.army.mil/Missions/Public-Services/Planning-Assistance-to-States/.

Flood Plain Management Services/Silver Jackets

Under the authority provided by Section 206 of the 1960 Flood Control Act (PL 86-645), as amended, the Army Corps of Engineers can provide the full range of technical services and planning guidance that is needed to support effective flood plain management. General technical assistance efforts under this program include determining: site-specific data on obstructions to flood flows, flood formation, and timing; flood depths, stages or floodwater velocities; the extent, duration, and frequency of flooding; information on natural and cultural flood plain resources; and flood loss potentials before and after the use of flood plain management measures. Types of studies that have been conducted under the Flood Plain Management Services (FPMS) program include: flood plain delineation/hazard, dam failure analyses, hurricane evacuation, flood warning, floodway, flood damage reduction, stormwater management, flood proofing, and inventories of flood prone structures.

The Massachusetts **Silver Jackets** team submitted two proposals for fiscal year 2021 FPMS nonstructural interagency projects; one for a series of workshops for Developing Base Flood Elevations in Unstudied A Zones, and the second for a High Water Mark Project in Boston. The proposals are awaiting funding.

Defense Environmental Restoration Program/Formerly Used Defense Sites

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 District will continue to work with the National Park Service (NPS) 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 NPS in the spring. The District 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. Remedial investigation was conducted during the 2018 field season. The final Remedial Investigation (RI) report documenting the results of the investigation was completed in April 2019. The RI concluded there were no unacceptable MC risks. A feasibility study report to evaluate remedial alternatives to address MEC is underway. 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 nine 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) – The District 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 objective of the project is to conduct a sufficient investigation and if warranted 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. Results of the remedial investigation will be documented in six separate site-specific Remedial Investigation Reports (RIs).

Intrusive investigations were completed during the 2018 field season. No MEC was discovered. Site specific and background sampling was completed in 2019. Based upon RI findings, all six sites are recommended for no further action. MassDEP has approved the draft final RIs for two sites, the Dump Area and the Weymouth Back River, with no comments. The remaining four RIs will be staffed thru MassDEP during the summer of 2020. A feasibility study report is not recommended.

Lonczak Drive Area (LDA) Site at the Former Westover Air Force Base, Chicopee (1st CD) – Studies and remediation of the southern portion of LDA found that NAPL present at the site was not mobile and there was no risk to human health or the environment from its presence. The District'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 the fall of 2011. In the summer of 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; subsequently a new firm (FS Engineers) was retained to address MassDEP's three comments.

Between August and October 2018, FS Engineers mobilized resources to the site and conducted a supplemental investigation to conclusively define the extent of NAPL impact, including conducting soil borings, analyzing soil samples, and installing groundwater wells. Four rounds of quarterly groundwater sampling have been completed

and a "nature and intent characterization" memorandum was finalized in August 2020, presenting the results of this recent quarterly sampling and summarizing the findings of remedial investigations performed to date. Coordination with MassDEP is anticipated to begin in the spring 2021 in order to provide site closure documentation and move the project into long-term monitoring or closure. Documentation will include a MCP compliant closure report 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 three projects are currently being executed simultaneously by the 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: https://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 (TPP) 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 comment through Dec. 4, 2014. The 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: https://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 District review. The proposed plan can be reviewed at: https://www.nae.usace.army.mil/Missions/Projects-Topics/Nantucket-Memorial-Airport/

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 District website at https://www.nae.usace.army.mil/Missions/Projects-Topics/Osborne-Pond/. 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 MassDEP in June 2016, a public meeting and safety awareness training (UXO education) was conducted on July 12, 2016 at Joint Base Cape Cod (JBCC), signage was installed in July 2016 and long-term monitoring is on-going. The first five-year review was completed June 2020. The review confirmed selected remedy (subsurface munitions clearance and public education) is still protective.

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 MassDEP in December 2007. Follow-up field efforts took place in the fall of 2008 to address data gaps resulting in a supplemental remedial investigation/ feasibility study being submitted to MassDEP in the summer of 2010, proposing the use of enhanced fluid recovery (EFR) to reduce the amount of LNAPL at the site. Four consecutive quarterly groundwater (GW) gauging events were then conducted in which no LNAPL was observed. The A-E firm performing these investigations went out of

business; subsequently a new firm was brought on and conducted two additional rounds of GW sampling. Due to an administrative error, the government was then required to award remaining work to a new contractor (TI2E) in September 2015. Additional field characterization work was conducted in autumn/early winter of 2016 and quarterly GW sampling events were conducted in 2017. As a result of the extreme regional drought conditions in the northeast in 2017, the lower water table resulted in the appearance of LNAPL in locations previously characterized as clean, necessitating another round of characterization to define the nature and extent of petroleum contamination. This work was awarded in spring 2018, carried out in summer 2018, and included investigative work at off-site (privately owned) real estate parcels. The field work fully characterized the extent of free product petroleum contamination, including the delineation of a small plume extending south of the POL site, so that a MCP compliant closure report may be submitted leading to an approved RAO statement. The extent of dissolved phase contamination extended past the furthest down gradient monitoring well and required limited additional field work to fully delineate the down gradient extent. Eight additional monitoring wells were installed in 2019, followed by two rounds of groundwater sampling. It is anticipated that an MCP compliant Phase III report will be prepared and submitted to MassDEP in 2020.

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**
Squantum 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
Mishaum 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 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 (five-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 District has performed over $100 million in work at the site since that time. 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, the Army Corps 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 District began supporting EPA at this site in the mid-1980s. In early 2020, dredging to remove PCB contaminated sediment was completed. Several remaining areas of contaminated sediment are currently being capped as they were not suitable for dredging due to existing shoreline structures. Demobilization and decontamination of the water treatment plant used for treatment of dredged material will be complete by the end of 2020, allowing the facility (Area D) to be returned to the City of New Bedford for re-use. Additionally, demobilization of buildings not needed at the Sawyer Street facility (Area C) continues. Intertidal/wetland remediation and restoration will continue through 2021, after which, remediation of the remaining four intertidal zones will be dependent upon EPA funding.

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

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 Demo-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 two 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:

- Demolition Area 1 GW OU 2006
- Demolition Area I Source Area 2009
- BA-4 Disposal 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
- J3 Range 2015
- Small Arms Ranges
- 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 with the Environmental Security Technology certification program (ESTCP) to conduct a classification technology demonstration to evaluate the ability of geophysical tools to discriminate between potential UXO items and frag. The ESTCP demonstration led to the partnering with USACEs' Baltimore District and the Huntsville Center for continued advanced geophysical classification (AGC) at JBCC using the MetalMapper. MetalMapper AGC was self-performed by the Army Corps from 2014-2017. In 2017, a contract was issued by the District to Parsons to continue MetalMapper under the DoD Advanced Geophysical Classification Accreditation Program (DAGCAP). To date, 83 acres have been investigated using MetalMapper technology. An additional 10 acres is currently under investigation. A follow-on AGC contract was awarded in September 2020 to IE-Weston for an additional 15 acres with the potential for 50 total acres. Field investigation for this contract will comment in 2021. Use of the MetalMapper technology has reduced the number of anomalies intrusively investigated (dug) by approximately 60 percent.

HANSCOM AIR FORCE BASE (6th CD) – Design of the MIT Lincoln Laboratory **Compound Semiconductor Laboratory-Microelectronics Integration Facility** (CSL-MIF) was initially completed in the spring of 2019. The original solicitation for the construction contract was cancelled in September 2020 and will be re-solicited following revisions to the design and updates to the solicitation process. Construction of the $200M-plus facility is expected to begin in 2022.

The solicitation for the reconstruction of the **Vandenberg Gate Complex** is currently under advertisement and is expected to be awarded in the spring of 2021. Once the design-build contract is awarded, the selected firm will complete the design of the Gate Complex and surrounding area in coordination with all stakeholders, leading to construction including new roadways, parking areas, a visitor center, and all necessary security features associated with the access control point.

U.S. ARMY SOLDIER SYSTEMS CENTER, NATICK (5th CD) – A contract was awarded on May 9, 2019, for the $20.6 million **Natick Army Family Housing** project. A groundbreaking ceremony was held on Nov. 14, 2019, at the Heritage Lane Housing Area. In July 2020 construction of an additional six units was awarded, bringing the total contract value to $26.1 million. The project now consists of constructing 28 replacement family housing quarters, as well as utilities and associated supporting infrastructure. The project includes garages, storage, patios, backyard fencing, landscaping, individual unit utility meters, hard-wired interconnected smoke detectors, carbon monoxide detection, automatic fire sprinkler systems, residential heating, air conditioning, equipment and appliances for fully functional residences. The project also includes neighborhood amenities, walkways, roads, storm drainage, street lighting, utilities, information systems, environmental measures required by law and associated supporting infrastructure. New housing is designed for a 50-year life and complies with standards in Unified Facilities Criteria and Army Sustainable Design and Development policy. Construction completion is anticipated by January 2022.

Human Engineering Laboratory – Soldier Squad Performance Research Institute (S2PRINT) – A contract was awarded in in FY 2020 for construction of a new $35 million Soldier and Squad Performance Research Institute (S2PRINT) facility at Soldier Systems Center, Natick. A groundbreaking ceremony was held on Nov. 12, 2020. Construction of the facility includes the 3-story laboratory building, including numerous individual labs, soldier monitoring area(s), office space, conference rooms, and supporting electrical, mechanical, and administrative space, as well as site development/landscaping, utilities, parking and demolition. Currently, site preparation and demolition is underway. Constriction completion is projected for August 2022.

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 (NPL) 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 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 – The District 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 USACE entered into an interagency agreement in 2001 for the goods and services the USACE 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 the agreement with the District is now supporting the VA with services at several VA facilities in New England.

In Massachusetts, the District completed in 2012 an exterior masonry rehabilitation to Building #2 at the Edith Nourse Rogers Memorial Veterans Hospital in Bedford; renovation of Wards 78F, 78G and Ward 2C in 2013-2014; and repairs to the HVAC system in the renovated Wards 78F & G in 2016. The District completed a $3.4 million renovation in 2014 of the Community Based Outpatient Clinic at the VA Medical Center in New Bedford; and completed design and construction projects in Brockton, West Roxbury, Jamaica Plain and Northampton in 2013.

SUPPORT TO THE FOOD AND DRUG ADMINISTRATION (FDA) – The District 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). The FDA and USACE 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, USACE performed an Environmental Assessment (EA) 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. A contract was awarded on July 31, 2018. Construction completion of the $54.1 million project is scheduled for Aug. 21, 2021.

Regulatory Activities

Department of the Army permits are required from the Army 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 District 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 available on the District website at https://www.nae.usace.army.mil/Missions/Regulatory/Permits-Issued/. Relevant environmental documents are available upon written request. To request information on District jurisdiction and whether a permit is required for your work, contact the Regulatory Division at (978) 318-8338 or (978) 318-8335; by email at: cenae-r@usace.army.mil; or visit our webpage at: https://www.nae.usace.army.mil/Missions/Regulatory/.

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% of all permits issued in New England are RGPs. Work eligible under the RGPs is generally approved in less than 60 days. The District revised the statewide Massachusetts General Permits in 2018. The Massachusetts GPs are available for viewing and download on the District website at: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/.

THIRD PARTY MITIGATION – In April 2008, USACE and the 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. These new regulations have provided impetus to potential sponsors of banks and ILF programs.

MA ILF Project Summary for 2019-2020

The Massachusetts Department of Fish and Game (DFG), the sponsor for the Massachusetts In-Lieu Fee program, sent out a request for proposals in the summer of 2019 and received 25 pre-proposals in response. After site visits and an Interagency Review Team meeting to discuss the merits of the pre-proposals, seven project proponents were invited to submit full proposals and did so. Ultimately four projects were funded in 2020: 1) The Westport Coldwater Streams project in Westport involves the permanent protection of 110 acres of forested riparian land along two coastal cold-water streams in Westport. 2) The Rattlesnake Hill Preservation project involves the protection of a 330-acre parcel in Sharon. This parcel links 225 acres of town conservation land with Massachusetts DCR's 1,843-acre Borderland State Park. The parcel also contains seven state-certified vernal pools, nine potential vernal pools, habitat for two state-listed rare species, and habitat for two State Wildlife Action species. 3) The Parker River Connector project involves the permanent protection of 100 acres of wetland, upland, and stream habitat along the Parker River in Newbury. 4) The eelgrass restoration project sponsored by the Massachusetts Division of Marine Fisheries involves both the creation of a statewide eelgrass restoration site selection model and the planting of eelgrass plots. First, a GIS-based eelgrass site suitability map will be developed using available online data. Using this map, eight to 10 sites will be chosen across all three coastal service areas for field data collection. For each site that scores well, two 25-square-meter test plots will be planted with eelgrass. These test plots will be monitored for two years and the results will be used to inform the selection of future full-scale (0.5 acre or larger) eelgrass restoration projects. In July 2020, the Department of Fish and Game sent another request for proposals. The District and the Department of Fish and Game are in the process of reviewing these proposals in consultation with the Interagency Review Team. The next round of recipients are expected to be selected in early 2021.

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 USACE recreation in New England, visit www.nae.usace.army.mil and select "recreation." Due to COVID-19 some of the facilities listed below might have closures or restrictions still in place. Please check the dam's web page, or call the project office, for status updates.

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 three 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 2019 included the replacement of the gatehouse heating system, the equipment storage garage roof, and 1,300 feet of guardrail in the recreation area. Activities available include canoeing, picnicking, picnic shelter rental, volleyball, 18-hole disc golf course, fishing, geocaching, hiking, bike riding and horseback riding (in restricted areas), wildlife observation, scenic viewing and cross-country skiing in season from sunrise to sunset. Hunting is permitted in accordance with the Massachusetts Division of Fisheries and Wildlife (MassWildlife) rules and regulations. Activities that are coordinated with the Massachusetts Department of Conservation and Recreation (MassDCR) 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 Manager Zachery Koziol zachery.e.koziol@usace.army.mil or Park Ranger Brianna Green brianna.j.green@usace.army.mil. Visit the Barre Falls Dam, Hubbardston site online at: https://www.nae.usace.army.mil/Missions/Recreation/Barre-Falls-Dam/.

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. Popular activities onsite include 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 the 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 MassDCR, provides camping, swimming, picnicking, boating and fishing. MassWildlife 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 https://www.nae.usace.army.mil/Missions/Recreation/Birch-Hill-Dam/.

The Lake Dennison Campground is operated under a lease by the MassDCR. 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.

BUFFUMVILLE LAKE (1st CD) on the Little River in Charlton was completed in 1958 at a cost of $3 million. The 11,300 acre-feet of storage at Buffumville is equal to 5.2 billion gallons of water and is impounded by a 3,255-foot-long, 57.5-foot-high earthen dam. Buffumville Dam has prevented more than $133.7 million in cumulative damages, through December 2018. Picnicking, swimming, boating, fishing, hunting, a 27-hole disc golf course, volleyball, horseshoes, 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. Future upgrades around the project office include generator replacement and electrical upgrades to the office and gatehouse. Volunteer and interpretive events can be found at: https://www.nae.usace.army.mil/Missions/Recreation/Buffumville-Lake/ or call (508) 248-5697.

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 District 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 Army 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 District 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 Army 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 https://www.nae.usace.army.mil/Missions/Recreation/Cape-Cod-Canal/.

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 https://www.nae.usace.army.mil/Missions/Civil-Works/Flood-Risk-Management/Massachusetts/Charles-River-NVS/

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 call (508) 347-3705 or visit https://www.nae.usace.army.mil/Missions/Recreation/Conant-Brook-Dam/.

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 recreational opportunities, including swimming, picnicking, fishing, hunting, canoeing, boating and nature study and attracts more than 124,000 visitors annually. For details call (508) 347-3705 or visit https://www.nae.usace.army.mil/Missions/Recreation/East-Brimfield-Lake/.

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 December 2018. The reservoir area offers fine recreational opportunities, including dirt biking, fishing, hunting, mountain biking, horseback riding and nature study to its visitors. There is also a 13-hole disc golf course. Upgrades in 2020 include replacement of the gate house door, frame and 1,000-foot-long log boom. Future upgrades include replacement and relocation of the emergency generator, and installation of additional security gates. Volunteer and interpretive events are listed on the District website at: https://www.nae.usace.army.mil/Missions/Recreation/Hodges-Village-Dam/ or call (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. The **Indian Hollow Group 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. Each loop may be reserved for a fee of $90 per night. Both loops may be reserved for a fee of $180 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 https://www.nae.usace.army.mil/Missions/Recreation/Knightville-Dam/. Work completed in the spring and summer of 2020 includes the replacement of the outlet channel safety fence, replacement of the furnace and diesel fuel tank in the dam gatehouse, replacement of the gatehouse windows, replacement of the carpets in the project office, and the removal of trees and vegetation from the downstream toe of the dam. Upcoming projects planned in fall and winter of 2020-21 include rehabilitation of the emergency flood gate, inspection of the gatehouse masonry walls, and repairs to the dam intake access road.

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. Special interpretive programs are offered and include such topics as water safety, the water cycle, the history of the Army Corps and flood damage reduction. Rangers also can prepare a program that deals with the District 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 the website at: https://www.nae.usace.army.mil/Missions/Recreation/Littleville-Lake/. Review is underway on the plans for the second phase of work to upgrade the electrical systems. This phase will replace the incoming electrical service to the dam with an underground service, replace the service connections at the project office, and replace the power distribution system at the water supply intake tower. Construction of this upgrade is planned for summer 2021. Projects completed in spring and summer 2020 include replacement of guard rails on main entrance road, decommissioning of former drinking water well, replacement of interior lights and carpets at the project office, and removal of trees from dam buffer zones and entrance road. Upcoming projects planned in fall and winter 2020-21 include improvements to drainage at the downstream toe of the dam, improvements to the lightning protection system, and replacement of the windows on the dam gatehouses.

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 fiscal year 2013.

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 the website at: https://www.nae.usace.army.mil/Missions/Recreation/Tully-Lake/. 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.

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 Army Corps and flood damage reduction. Rangers can prepare a program that deals with USACE and its missions, water resources or natural resources tailoring 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 further information, current events, upcoming programs, or shelter reservations, call (508) 278-2511 or visit the website at: https://www.nae.usace.army.mil/Missions/Recreation/West-Hill-Dam/.

WESTVILLE LAKE (1st CD) dam in Southbridge and Sturbridge is 560 feet long and 78 feet high and cost $5.7 million to construct in 1962. Its lake can store an 11,100-acre-foot reservoir, which amounts to 3.6 billion gallons of water. Westville Lake has prevented damages totaling $53.7 million since placed in operation. 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 the website at: https://www.nae.usace.army.mil/Missions/Recreation/Westville-Lake/.