Yankee Engineer

U.S. Army Corps of Engineers, New England District, Volume 55, No. 5 February 2022

Building Strong®

Cleanup of the Elizabeth Mine Superfund site is complete

Story on page 4

Yankee Voices

John Rudd

Reduce stress with these simple steps

Stress can undercut your effectiveness at work. Every job has less than enjoyable moments, but when you start feeling ready to burst, put some of these techniques into action:

- Take a 15-minute break. Once a day, spend 15 minutes relaxing. Try meditation, a quick walk, or some inspirational reading. Don't think about your problems, just immerse yourself in the activity. You'll feel better when you get back to work.

- Learn to say no. You probably can't turn down orders from your boss, but you can take more control of your time by not letting co-workers bury you with requests. Help out as much as you can, but let people know—politely—that you've got to stick to priorities. You'll avoid being overwhelmed by extraneous tasks.

-Identify your motivations. Figure out what you like about your current job—and what drives you crazy. Seek ways to maximize the first and minimize the second. The better you know what you're looking for in your career, the quicker you'll find it.

(First Draft Magazine)

Hero Of The Month:

John Rudd, Construction Control Representative, Muddy River Flood Reduction Project

John Rudd on the job at the Muddy River Flood Reduction Project.

In addition to his role as Lead CCR on the Muddy River Phase 2 Flood Reduction Project in Boston, Massachusetts, Rudd volunteered to take on additional responsibilities as the Project Engineer in charge of all field work between the months of September and December of 2021. During this time, Rudd led the project field team to receive provisional acceptance for landscaping in numerous work areas, begin the construction of a large floodwall, and continue the dredging of the Muddy River.

Through his leadership, the project team continued to build trust with the local sponsors and stakeholders while Rudd maintained an excellent rapport with the demanding individuals on the project. Rudd has received numerous compliments for his efforts and is commended for his drive to take on multiple responsibilities on a fast-moving project.

Congratulations...

… to Scott Michalak who is the new NAD Geotechnical Engineering CoP Leader and Levee Safety Program Manager. Michalak will continue to sit in NAE, but report to E&C at NAD.

Sympathy…

… to Bob Marchetta, Engineering, on the passing of his mother, Ellen Marchetta, Jan. 28.

YANKEE ENGINEER is an authorized unofficial Army newspaper under provisions of AR 360-1 published monthly. Views and opinions expressed are not necessarily those of the Department of the Army. Contributions from readers are solicited, but publication depends on judgment of the editor. No payment will be made for contributions. Published by the Public Affairs Office, New England District, U.S. Army Corps of Engineers, 696 Virginia Road, Concord MA 01742-2751, 978-318-8777. Printed by the offset method on recyclable paper by the Defense Printing Office in Philadelphia, Pa. Circulation 1600. The YANKEE ENGINEER can be found on the World Wide Web at http://www.nae.usace.army.mil/news/yankee.htm. ON THE COVER: Transformed South Open Cut look north. Several members of the project team at 2 of 12 historic interpretive panels overlooking the 45-acre cap to the east.

District Commander: Col. John Atilano II
Chief, Public Affairs: Elizabeth D. Gosselin
Editor: Ann Marie R. Harvie
Media Relations Officer: Bryan Purtell
Community Relations Advisor: Sally M. Rigione
Web Content Manager: Albinko Hasic

Commander's Corner: Celebrating Black History Month

by Col. John A Atilano II
New England District Commander

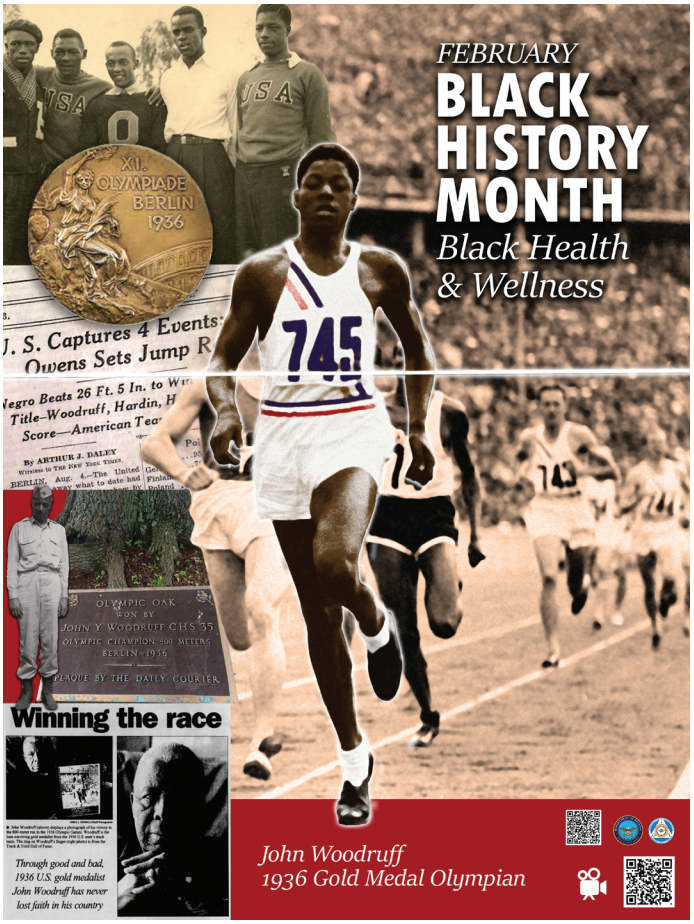
On behalf of the New England District, I am honored that we will join the rest of the nation in celebrating National African American-Black History Month for the month of February.

We began commemorating the accomplishments of African Americans in 1926 when Dr. C. Woodson, known as the "Father of Black History," founded what was then called "Negro History Week." Dr. Woodson selected the second week in February because it fell between the birthdays of abolitionist Frederick Douglass and President Abraham Lincoln. The week expanded to a month-long observance in 1976.

There is no part of American History that African Americans have not had a major role. As an example, African Americans have made significant contributions to our military since the Revolutionary War.

In 2021, 102,134 U.S. Army Soldiers were African American. That's more than 21 out of every 100 Soldiers. Throughout our history, African American service members have performed above and beyond, with 94 receiving the military's highest honor, the Medal of Honor. The first to receive this impressive award was Army Sargent William Carney, a former slave, who fought in the Civil War. He received the honor for saving the regimental colors during the Battle of Fort Wagner on July 18, 1863. The latest recipient is Sgt. First Class Alwyn Cashe who received the award posthumously on Dec. 16, 2021, for his gallantry above and beyond the call of duty while serving in the Salah Province, Iraq. To read their incredible stories and those of the other recipients, I invite you to go to: https://www.cmohs.org/recipients/lists/black-african-american-recipients. I thank all these courageous soldiers for their bravery and sacrifices they made for our nation.

Here at the New England District, I encourage everyone to reflect not only on the accomplishments of our African American teammates, but those in our military serving the nation every day. Together we are one team, one nation, one world.



Words worth repeating

"Make a career of humanity. Commit yourself to the noble struggle for equal rights. You will make a better person of yourself, a greater nation of your country, and a finer world to live in."

- Martin Luther King, Jr.

"Every great dream begins with a dreamer. Always remember, you have within you the strength, the patience, and the passion to reach for the stars to change the world."

- Harriet Tubman

Cleanup of the Elizabeth Mine Superfund Site is complete

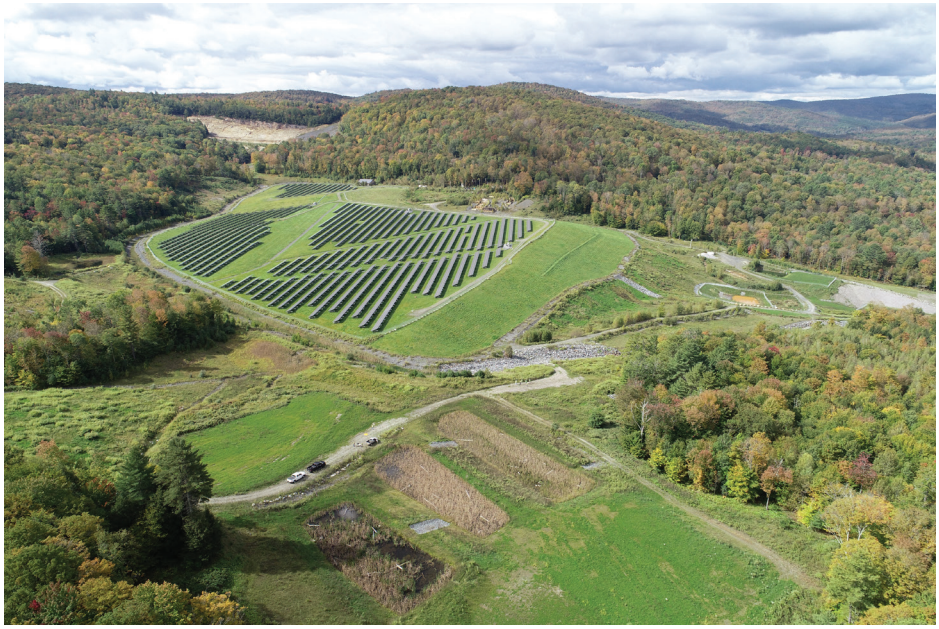


Photo by subcontractor to Nobis Engineering

45-acre tailing pile cap and 5 megawatt solar array at center of photo looking southwest, December 2021.

By Stephen Dunbar, P.E., PMP
Project Management

The de-mobilization of the project trailer on Dec. 8, 2021, marked the completion of 20 years of cleanup at the Elizabeth Mine Superfund Site, Strafford, Vermont.

"The Elizabeth Mine is one of the largest and most intact historic mining sites in New England. It was operated for more than 100 years producing over 3.25 million tons of ore and 50,000 tons of copper," said U.S. Army Corps of Engineers New England District (CENAE) Project Manager Stephen Dunbar.

Mine tailings, waste rock, and smelter waste remained after the mine was closed in 1957. These wastes discharged acid rock drainage (ARD) and dissolved metals, resulting in dissolved copper concentrations as high as 6,000 parts per billion (ppb) and pH readings as low as 2 standard units (SU) in the Copperas Brook, subsequently placing 5 miles of the West Branch of the Ompompanoosuc River on the Environmental Protection Agency (EPA) Impaired Waters List.

In 2003, EPA Region 1 retained CENAE to manage the cleanup of the site. From 2003-2006, the Project Delivery Team (PDT) focused on stabilizing the Tailing Dam that was determined to be at risk of failing and releasing a tailing flow that could significantly damage downstream property and surface waters.

The PDT constructed surface and groundwater diversion structures, constructed a buttress and toe drain system along the toe of the Tailing Dam, and began capturing and treating the contaminated discharge. From 2007-2010, the PDT constructed a treatment plant for ARD and iron-impacted water.

The treatment plant utilized an innovative lime amendment Rotating Cylinder Treatment System to oxidize and precipitate metals. The PDT also relocated approximately 233,000 cubic yards (CY) of waste rock from the steep edge of the North Open Cut down to the Tailing Dam area and began demolition of buildings deemed unsafe in their current condition. All demolition was coordinated with historic preservation specialists and all structure locations were preserved via placement of large, rounded stone to provide contrast against the existing landscape.

During the 2011 and 2012 construction seasons, the PDT conducted additional building demolition/abatement, consolidated 435,000 CY of tailings, re-graded the 45-acre tailing pile, constructed an engineered cap over the tailings, constructed more than 2-miles of surface drainage channels, and treated over 10 million gallons of ARD and iron-impacted water. The 45-acre cap is now home for Vermont's largest solar array. The array provides 5 megawatts of power annually, enough energy to supply 1,500 homes.

During the 2018 and 2019 construction seasons, the PDT constructed a Passive Treatment System (PTS) to replace the water treatment plant.

The PTS, which consists of an anoxic limestone drain, settling pond, vertical flow pond, and polishing wetlands, eliminates the $250,000 needed annually to maintain the water treatment plant. Next step for the PDT was the transformation of the South Open Cut and South Mine contamination source areas.

This transformation included pumping and treatment of 4.3 million gallons of water from the pit lakes, blasting of unsafe rock slopes, excavation and consolidation of 37,000 CY of waste material, excavation and re-use of 46,500 CY of on-site materials, and 1,900 truckloads of imported materials.

Finally, during the 2021 construction season, the PDT closed the 1898 Adit by remotely installing a 10-foot by 10-foot by 60-foot-long concrete plug 60 feet below the ground surface, eliminating the risk of an uncontrolled

release of over one million gallons of mine-impacted water from the inner workings of the mine. More than 2,500 native plants and wetland seed mixtures were installed during wetland restoration activities through 2019. In total the PDT created 15.4 acres of wetlands, a net increase of 6.9 acres. All work performed on the more than 250-acre Superfund site since 2011 was performed under a formally adopted and implemented, "Green Remediation Strategy," that earned the Chief of Engineers' Green Dream Team Award in 2014.

Work performed at Elizabeth Mine has yielded positive results. The Tailing Dam is stable, leachate flow from the Tailing Dam has been reduced by 80% to just 11 gallons per minute, copper concentration just below the South Open Cut has dropped from 186 to 13 ppb, and copper concentration just below South Mine has dropped from 845 to 15 ppb. In Copperas Brook, copper concentration has been reduced by 99%, iron load by 95%, and pH increased by 4 SU, resulting in the West Branch of the Ompompanoosuc River being removed from the EPA Impaired Waters List.

"The success of this project is largely due to the strong partnership between all stakeholders, including the Environmental Protection Agency, Vermont Department of Environmental Conservation, representatives from the towns of Strafford and Thetford, local residents, the CENAE and our contractor since 2011, Nobis Engineering," said Dunbar. "It is bittersweet to finally hand over to the state of Vermont a project that not only addresses the contamination threat to the environment but also a renewed home for the wide range of wildlife, a new source of power to the local community, and a preservation of history for all to see."

Moose enjoying new wetlands established at the South Mine, September 2020. Photo by Nobis Engineering

Elizabeth Mine Tailing Pile (pre-construction) looking south, May 2003. Photo by PAL Photographer

South Open Cut and copper-influenced pit lake at center of photo (pre-construction) looking north, October 2010. Photo by Subcontractor

New England District to receive more than $273 million in supplemental Infrastructure, Disaster Relief funding

by Bryan Purtell
Public Affairs Office

The U.S. Army Corps of Engineers, New England District will receive more than $273 million in additional funding for projects and studies throughout New England as a result of two recently enacted laws — the Infrastructure Investment and Jobs Act and the 2022 Disaster Relief Supplemental Appropriations Act.

On Jan. 19, 2022, the Assistant Secretary of the Army for Civil Works announced the nationwide studies, projects and programs that are receiving funding under the two laws which combined provide $22.81 billion for the USACE Civil Works program. "We very much appreciate the accelerated funding provided by the administration to allow us to tackle our infrastructure and climate resilience needs," said USACE New England District Commander Col. John A. Atilano II. "The New England District is grateful for the large investment in critical projects that enables us to maintain navigation channels, repair structures, maintain our infrastructure and complete shore protection projects and navigation improvements. We look forward to working with our partners to implement the funds in our region in the coming months and years."

Future announcements will provide spend plans for subsequent years. Each spend plan will be in continued support of administration goals of expanded access to America's ports through dredging, as well as building resilience in the face of global climate change, while benefitting economically disadvantaged communities and regions, and advancing environmental justice.

"The Army will work with community partners to leverage these historic Civil Works funds for investments that strengthen national supply chains through our commercial navigation mission, help communities impacted by climate change to increase their resiliency, advance environmental justice, and invest in communities that have too often been left behind," said The Honorable Michael L. Connor, Assistant Secretary of the Army for Civil Works.

Ball Mountain Lake in Vermont

File photo

Bipartisan Infrastructure Deal: Infrastructure Investment and Jobs Act, Public Law 117-58. With the $17.099 billion provided in Public Law 117-58, the Army will fund Army Civil Works studies and projects, maintain existing infrastructure, and repair damage and dredge channels in response to floods and coastal storms. Through this investment in water resources infrastructure, over $5 billion will help improve community resilience in the face of global climate change and $3.936 billion will address commercial navigation improvements at coastal ports and on the inland waterways.

The Army plan under Public Law 117-58 funds Operations and Maintenance work projects in five of the six New England District states.

In Connecticut, the Army will fund 10 Civil Works projects totaling more than $8.6 million, including just over $5 million for dredging and surveys in Milford Harbor. Additional funded projects include $1.28 million for dredging and surveys in Southport Harbor, $760,000 for dredging and surveys in the Patchogue River, and $800,000 to clean up debris, modernize campground electrical sites and pave a boat ramp parking lot and access road at West Thompson Lake.

In Massachusetts, 13 Civil Work projects totaling more than $20.8 million will be funded, including $4.89 million for dredging and surveys in Wareham Harbor, $4.4 million for dredging work in the Essex River, $2.95 million for dredging and surveys in Salem Harbor, $2.5 million for dredging work in Newburyport Harbor, and $2.6 million for steel and timber repairs to mooring dolphins and finding and replacing missing boundary markers at the Cape Cod Canal. In addition, the New England District will continue to work with our partners to advance efforts to address the aging Bourne and Sagamore Bridges over the Cape Cod Canal.

In Maine, the Army will fund four Civil Works projects totaling more than $18 million, including $6.3 million for breakwater repair and surveys in Bar Harbor, $4.8 million for dredging work in the Scarborough River, $3.95 million for dredging and surveys in the Narraguagus River in Milbridge, and $3.4 million for dredging and surveys in the Josias River in Perkins Cove.

In New Hampshire, two Civil Works projects totaling $1.76 million will be funded, including $1.68 million for dredging and surveys in Portsmouth Harbor and the Piscataqua River.

And in Vermont, the Army will fund two Civil Works projects totaling $1.3 million, including $1.13 million to replace a well casing at Winhall Brook Camping Area, upgrade electrical service, install water and electricity connecting, and perform Slason Bridge approach roadwork at Ball Mountain.

Additionally, the Army plan under the Infrastructure Investment and Jobs Act funds one construction project in Connecticut. For FY 2022, the Army will fund $63 million for the New Haven Harbor Deepening Project, allowing the start of design efforts and moving directly into construction to completion.

Disaster Relief Supplemental Appropriations Act, 2022, which is Division B of Extending Government Funding and Delivering Emergency Assistance Act, 2022, Public Law 117-43.

Of the $5.711 billion supplemental funds that Public Law 117-43 provides for the Army Civil Works Program, $100 million is designated for studies of proposed projects in the four states where major disasters were declared in FY 2021 due to Hurricane Ida – Louisiana, New Jersey, New York and Pennsylvania.

This law also provides $3 billion for construction of qualifying flood and storm damage reduction projects, including shore protection projects. Under Public Law 117-43, the Army will fund $160 million for construction work in Connecticut in Fairfield and New Haven counties under the Flood Damage Reduction Coastal program. The project work includes constructing a floodwall, closures and a pump station to protect the Long Wharf area of downtown New Haven.

The Army plan under the Disaster Relief Supplemental Appropriations Act also funds one Operations and Maintenance work project in Connecticut. For FY 2022, $125,000 has been allocated to provide advance engineering and design to extend public water utility from the Beach restroom area to the West Lawn and Upper End restroom areas at Hop Brook Lake.

For additional details regarding the amounts provided to various programs, projects and activities for each of the appropriations accounts for FY 2022, visit the USACE Civil Works Budget and

Performance webpage at https://www.usace.army.mil/Missions/Civil-Works/Budget/.

Newburyport Harbor in Massachusetts. File photo

Dredging up the past

Photo by Brian Murphy

Marilyn Ortiz presents Chris Turek, Construction Division, a bouquet of flowers during his retirement ceremony. Turek traded in his work boots and hard hat for more time on his boat when he decided to retire after more than 36 years of federal service. A retirement lunch for the New Bedford Resident Office's Resident Engineer was held at Whites of Westport on July 17, 2015.

Public Affairs Office
New England District
U.S. Army Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751
Meter Code 40

First Class
U.S. Postage
Paid
Concord, MA
Permit No. 494