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SENATE BUDGET COMMITTEE HEARING - *BUDGETING FOR THE STORM: CLIMATE CHANGE AND THE COSTS TO NATIONAL SECURITY*

15 MAY 2024

Chairman Whitehouse, Ranking Member Grassley, and members of the Committee, thank you for the opportunity to appear before you this morning to discuss the impact of climate change on our national security from a defense community perspective. My name is Rick Dwyer, and I serve as the Executive Director of the Hampton Roads Military and Federal Facilities Alliance. Our alliance is a unique public-private partnership comprised of16 cities and counties that make up the Hampton Roads region and thirteen private sector businesses and organizations that serve and employ members of our communities. We are dedicated to supporting and advocating for the military and federal installations in our region and the communities that host them.

The Role of Hampton Roads in National Security

Hampton Roads has played an integral role in our national defense since our nation's birth, and its strategic value was recognized long before our independence. For members of the Committee unfamiliar with the region's vast military and federal presence, former Secretary of Defense Leon Panetta dubbed Hampton Roads, Virginia, as "the greatest concentration of military might in the world."[1] It is by itself an invaluable operational and strategic hub for both the United States and its allies. It is the only place in the country to host four different 4-star commands including NATO's Allied Command Transformation, the Navy's Fleet Forces Command, the Air Force's Air Combat Command, and the Army's Training and Doctrine Command.

The region supports 18 military installations and annexes, and personnel from all military service branches. We are home to the world's largest Navy Base, Naval Station Norfolk, which home ports all our east coast-based aircraft carriers and is the backbone of the Atlantic Fleet. We're also proud to host the nation's largest Coast Guard presence with their major cutter homeport at Base Portsmouth, their largest training center (by student throughput) at Training Center Yorktown, as well as the headquarters for the Atlantic Area,

[1] Secretary of Defense Leon E. Panetta, in a speech to the Hampton Roads Chamber of Commerce, Hampton Roads, VA, Friday, October 19, 2012, http://archive.defense.gov/Speeches/Speech.aspx?SpeechID=1729

5th District, Force Readiness Command, Shore Infrastructure Logistics Command, and Sector Virginia. Norfolk Naval Shipyard is the largest and oldest of four Navy-owned shipyards and was established in 1767 by the British. Globally, Hampton Roads provides significant airpower between Naval Air Station Oceana, the Navy's East Coast Master Jet Base, and Joint Base Langley-Eustis, which is the oldest continuously active Air Force Base in the world and home to over 40% of the Air Force's F-22s. Fort Eustis is the home of all the Army's helicopter maintenance training and the "Army's navy," from which units recently deployed to build the floating pier off the coast of Gaza. Joint Expeditionary Base Little Creek – Fort Story is the east coast hub of Naval Special Warfare units. In addition to the significant DoD presence, the region hosts other major federal facilities including NASA's Langley Research Center and the Department of Energy's Thomas Jefferson National Accelerator Facility – soon to be home to DoE's newest High Performance Data Facility. With additional Department of Veterans Affairs facilities, National Parks, and historic landmarks, there is not a denser concentration of federal installations elsewhere in the country outside of Washington, DC. Additionally, Hampton Roads plays a major role in the defense industrial base with the largest concentration of private sector naval ship repair capability as well as the only builder of aircraft carriers and one of only two builders of submarines. Supporting the military is part of who we are as a region.

Risks of Rising Sea Levels

Hampton Roads sits at the confluence of the Chesapeake Bay tidal area, James and York Rivers as well as the low-lying Great Dismal Swamp to the south, making it susceptible to sea level rise. The region has experienced nearly 18 inches of sea level rise since 1930. According to Hampton Roads Planning District staff, about 6.5 inches of that total has occurred since 2000. Additionally, land subsidence by natural occurrences and groundwater withdrawals have further compounded the challenges posed by sea level rise, with land subsidence averaging about 1/10th of an inch per year in the region.

Sea level rise and climate impacts have increasingly posed challenges to military installations and readiness in recent years. Severe storm surges can flood portions of the runway and parking aprons at Joint Base Langley-Eustis. Flooding from heavy rains and tidal events can bisect installations and make some areas inaccessible through normal means. Rising sea levels have resulted in ships' steam services being shut off due to the pier piping runs becoming submerged during super tidal conditions, leaving crews on duty without hot water or hot meals. Hampton Boulevard, a main access road leading to Naval Station Norfolk, can flood during heavy rain events, forcing lengthy detours which impact service member quality-of-life. Workers at Norfolk Naval Shipyard are sent home early

during heavy rainstorms due to the high potential for parking lots and roadway flooding on and off the installation which can make roadways impassable. These regularly occurring events have a very tangible impact on ship repair timelines, cost, and fleet readiness.

However, the challenges of climate change are not limited to the Hampton Roads area. The FY18 National Defense Authorization Act required DoD to provide a list of installations that were impacted by climate change. In its January 2019 report, DoD assessed 79 of its mission assurance priority installations and found over two-thirds were impacted by climate-related events. These events included recurrent flooding, drought, desertification, wildfires, and thawing permafrost. Given other risks from various severe weather events and natural disasters, essentially no single military installation in the country is immune from the impacts of climate change and natural disasters.

Building Resilience to Sea Level Rise

Military installations in Hampton Roads and other coastal areas must be resilient to impacts of sea level rise, storm surge, and persistent flooding in order to defend the nation, maintain U.S. dominance and project power overseas. However, lack of infrastructure funding, staffing challenges, and inadequate coordination with host communities often hinder resilience efforts. DoD has under-resourced infrastructure for decades. When I was a brand-new 2nd Lieutenant in the Air Force in 1996, the mantra even then was "we're taking risk in infrastructure" to fund other priorities. This consistent underinvestment in infrastructure has led to the Navy's backlog of facility maintenance and restoration and modernization reaching $49 billion in 2020 dollars according to a November 2023 Congressional Budget Office report.[2] The Air Force estimates its infrastructure and facilities backlog at $46.8 billion according to its FY25 Unfunded Priorities List. Given the lack of resources to maintain and recapitalize its existing infrastructure, DoD is hard pressed to invest significant funding in making its installations more resilient to climate change.

We thank Congress for the incredibly valuable authorities and resources that have been provided to help meet some of these challenges. Hampton Roads communities lead the nation in collaborating with the military to use all the tools available to us to plan for coastal resiliency.

[2] "The Navy's Costs to Eliminate Its Deferred Maintenance Backlog and to Renovate and Modernize Its Buildings." *Congressional Budget Office,* 1 Nov. 2023, www.cbo.gov/publication/59799. Accessed 11 May 2024

In 2018, the City of Hampton and Joint Base Langley-Eustis conducted the first-of-its-kind Office of Local Defense Community Cooperation (OLDCC) Joint Land Use Study (JLUS) focused on sea-level rise and recurrent flooding. Similar efforts followed in 2019 between the Navy and Virginia Beach – Norfolk, and in 2021 for Chesapeake – Portsmouth. These studies identified high-impact areas of flooding of facilities and infrastructure in the community that directly support the military, allowing resources to be targeted to areas of greatest impact. Together, they have provided a roadmap for communities and military to work together on priority areas and to pursue additional resources through existing Department of Defense programs like the Energy Resilience Conservation Investment Program (ERCIP), the Defense Community Infrastructure Program (DCIP), the Readiness and Environmental Protection Integration (REPI) program, and Sentinel Landscapes programs as well as traditional military construction and operations and maintenance dollars. These programs help the Department of Defense and communities to collaborate and utilize resources, oftentimes in a shared fashion, to address the impacts of climate change. The key to success of these programs is continuous cooperation between local stakeholders and the military. Fixes to a base alone won't solve the problem. Given 70 – 80% of our military members live off base and critical utilities and services are provided from the community, making an installation resilient is of limited value if personnel can't get there to perform the mission.

To help with future regional planning, the Hampton Roads area is one of the few regions in the country to have adopted uniform sea-level rise planning guidelines. In October of 2018, the 17 local governments in the region approved the "Sea Level Rise Planning Policy and Approach" which incorporates relative sea level rise scenarios of 1.5 feet in the near-term (2018-2050), 3 feet for mid-term (2050-2080), and 4.5 feet for the long-term (2080-2100). This policy makes regional coordination simpler and demonstrates that our various localities understand the challenges and are working together on the issue.

Broader regional efforts led by the U.S. Army Corps of Engineers (USACE) following the impacts of Hurricane Sandy aim to make the Hampton Roads communities more resilient to future storm events. These USACE Coastal Storm Risk Management (CSRM) studies investigate flood-risk management problems and develop solutions for the study area. The Norfolk study was completed in 2019 and identified $2.6 billion in projects to protect Norfolk from storm surge events. These projects include floodwalls, levees, storm surge barriers, tide gates, pump stations, as well as nonstructural measures. Unfortunately, antiquated laws resulted in the world's largest navy base, Naval Station Norfolk, being left out of the study. Due to the USACE interpretation of the Economy Act, they could only have included Naval Station Norfolk, or other federal lands, if the Navy or respective federal agency paid to include their properties. When the Norfolk study started in 2016, the Navy

did not know about it ahead of time and did not have funding available to participate. There were also some operational security concerns about identifying installation vulnerabilities in a public study. Obtaining a cost share for these projects is difficult enough from one federal partner, but that issue is compounded as the USACE begins a coastal resiliency study for the Hampton Roads Peninsula which is home to 7 different federal entities. Unless the Civil Works authorities are changed, we will likely see a repeat of the Norfolk study where critical national security installations are left out of the effort. This leaves both the federal installations and surrounding communities vulnerable to future storm impacts. The challenges of coastal resilience do not stop with manmade boundaries, and as such, USACE authorities should be modernized to reflect this reality. We believe this change would integrate more installations and facilities into the Civil Works planning and construction processes. We believe this is a commonsense change that will ultimately produce more comprehensive solutions for challenges faced by a range of actors in the Hampton Roads region, as well as other areas around the country that host federal facilities and are subject to flooding like Florida, California, Washington State, and Rhode Island to name a few.

In an effort to address water resources and the impacts of land subsidence, the Hampton Roads region has also adopted an innovative approach to water treatment called the Sustainable Water Initiative For Tomorrow (SWIFT) program. This $2.4 billion effort is an innovative water treatment project designed to further protect the region's environment, enhance the sustainability of the region's long-term groundwater supply, and help address environmental pressures such as Chesapeake Bay restoration, sea level rise and saltwater intrusion. SWIFT takes highly treated wastewater that would otherwise be discharged into local rivers and puts it through additional rounds of advanced water treatment to meet drinking water quality standards. The SWIFT Water is then injected into the Potomac Aquifer, the primary source of groundwater throughout eastern Virginia. This process is expected to reduce the rate of land subsidence in the region.

Challenges

From our local perspective, the challenges of building military installation and community resilience come down to two essential elements: resources and processes.

Resources

Planning grants and other available funding have been critical to resiliency efforts but are insufficient at current levels to meet the challenges of sea-level rise that we see on a regular basis. The demand for these planning tools, like OLDCC's Military Installation

Resiliency grants, continues to grow but funding remains relatively stable. Additionally, funds that are needed to execute these resiliency plans and studies also remain limited. Department of Defense military construction dollars are extremely limited and, in general, represent less than 2% of the overall Department of Defense budget.[3] Much of these limited MILCON dollars go to new mission beddown requirements leaving little for recapitalizing existing infrastructure or resiliency projects. Additionally, programs like DCIP, REPI, and Sentinel Landscapes have seen significant funding but are not nearly sufficient to meet the demands from local communities that host military installations. For example, last year the DCIP program was fully funded at $100 million but there was a demand for over 100 projects that would have cost over $350 million. In short, the DCIP program, last year, was only able to address about one third of the total demand for the program. Similar challenges exist with the REPI and Sentinel Landscapes programs. The demands are real, but the resources are not yet adequate to address the backlog that exists. That is a challenge that the Hampton Roads area and many other military communities across the country face. In addition to funding shortfalls, many installation and community planning functions are understaffed and overtasked. Given the aged condition of much of the DoD infrastructure, base level staff are often focused on immediate short-term requirements and cannot spend significant time to properly plan for future resilience projects.

Processes

There are several processes which create unnecessary hurdles to resilience projects. As previously mentioned, the USACE Civil Works authorities do not allow inclusion of federal lands when studying and developing mitigation projects for surrounding communities unless the owning federal agency pays its share of the costs. This results in a piecemeal approach to coastal resiliency, leaving both the federal facilities and the surrounding communities at greater risk of storm surge and the long-term effects of sea level rise and climate change. This needs to be remedied so that these coastal resiliency studies look at an area holistically and develop comprehensive, community-wide, and geographically contiguous storm risk management solutions. We applaud the Senate for addressing this issue in section 104 of S. 4136, the Water Resources Development Act of 2022. Although that provision was not included in the final WRDA 2022 legislation, there is an opportunity for Congress to correct this matter in this year's WRDA legislation. Please see attachment 1 for a USACE developed document that explains the issue with the current authority and benefits of remedying the problem.

[3] "Long-Term Implications of the 2024 Future Years Defense Program." *Congressional Budget Office*, 1 Oct. 2023, www.cbo.gov/publication/59703#_idTextAnchor070. Accessed 11 May 2024.

Additionally, restrictions on sharing installation-specific information about infrastructure and resiliency related vulnerabilities with community partners hampers coordination with host communities. In many cases this information is designated as Controlled Unclassified Information (CUI) which restricts its sharing with non-military personnel. When it comes to installation resiliency, we need to find the right balance in being able to share the information so planning is not stovepiped and communities can act and support the military as true partners.

Recommendations

On behalf of the Hampton Roads Military and Federal Facilities Alliance, I am pleased to offer our recommendations to improve the resilience of military and federal installations critical to our national security and the communities that support those installations.

Provide Additional Resources

Traditional DoD infrastructure funding, installation resilience grants and other existing resources, used strategically, have proven essential to fortifying infrastructure in the face of sea level rise. However, more is needed. Fully resourcing DoD military construction and facility sustainment, restoration and modernization requirements are essential to recapitalizing old infrastructure and making it more resilient to the effects of climate change. Increases to DCIP, REPI, Sentinel Landscapes, as well as MIR grant funding would all be extremely beneficial to addressing the challenges posed by climate change. In particular, additional appropriation and authorization of DCIP funding that included a specific carveout for resiliency projects would be helpful for installations and communities to address identified infrastructure gaps. Additionally, while additional ERCIP funding has been provided over the last several years the backlog remains and additional funds are needed to directly fund resiliency projects on military installations such as shoreline reinforcement, tide gates, surge barriers, and floodwalls.

Modernize Processes and Remove Barriers

We encourage the Committee to work with their colleagues on the Environment and Public Works Committee and USACE to modify Civil Works authorities to allow inclusion of federal lands, using Civil Works funds, when studying and developing coastal resiliency projects for surrounding communities. The challenges of coastal and flooding resilience do not stop with manmade boundaries, and as such, USACE authorities and Civil Works funding should be modernized to reflect this reality. We also encourage Congress to provide frequent oversight of DoD information sharing programs to ensure that misinterpretations of law or oversights in regulation development do not create

unnecessary obstacles to addressing the challenges of climate change. You cannot separate installation resiliency from the surrounding community. Sharing as much information as possible with local stakeholders should be the goal to ensure our bases and the communities that host them are as resilient as possible.

Conclusion

Addressing the challenges posed by climate change requires close and frequent communication and collaboration between local communities, states, and the military installations. Solutions to impacts of climate change on our military bases must take a comprehensive approach as floodwaters and other threats don't care about fencelines or jurisdictional boundaries. That can only be done when Congress provides authorities that direct such collaboration from federal partners as well as require local input. The challenges posed by climate change to our national defense are real and daunting. Congress has taken positive steps in providing authorities and resources, but more is needed. I thank you for this opportunity to discuss the Hampton Roads region's work with our military partners and appreciate your consideration of our recommendations. I look forward to answering your questions.

Attachment 1

Inclusion of Federal Installations / Facilities During Coastal Storm Risk Management Feasibility Studies

PROBLEMS

- USACE lacks the fiscal flexibility to incorporate military installations and other Federal facilities into the implementation of its Civil Works projects.
- Most notable in the inability to account for such installations and facilities in the formulation and construction of coastal storm risk management features.
- Both the federal facilities and the adjacent communities are left at greater risk of storm surge and the long-term effects of sea level rise and climate change.

OPPORTUNITIES

- USACE has the authority and capability to synchronize climate resilience efforts by incorporating military installations and other Federal facilities into the formulation of its CSRM projects.
- Interest by Congressional representatives to better synchronize Civil Works and military climate resilience efforts by leveraging USACE capabilities.
- Although military and other Federal presence in the Hampton Roads area is robust, there are numerous metropolitan areas with a moderate to heavy Federal presence along the U.S. coastlines.

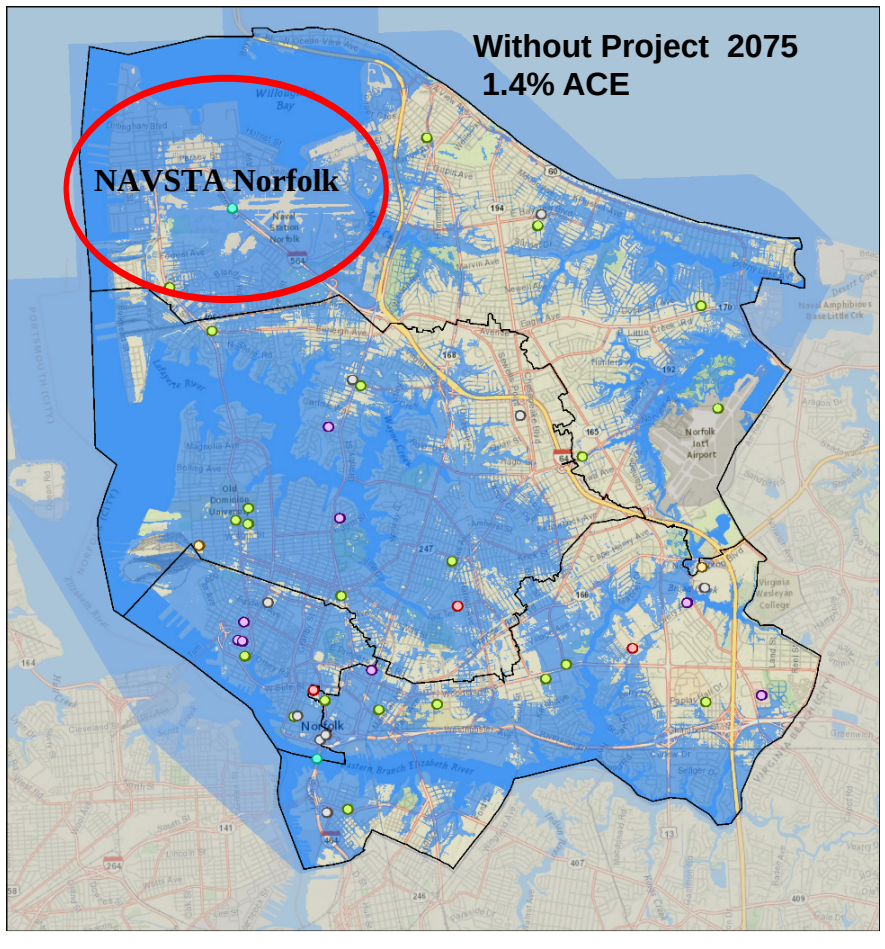
OBJECTIVES

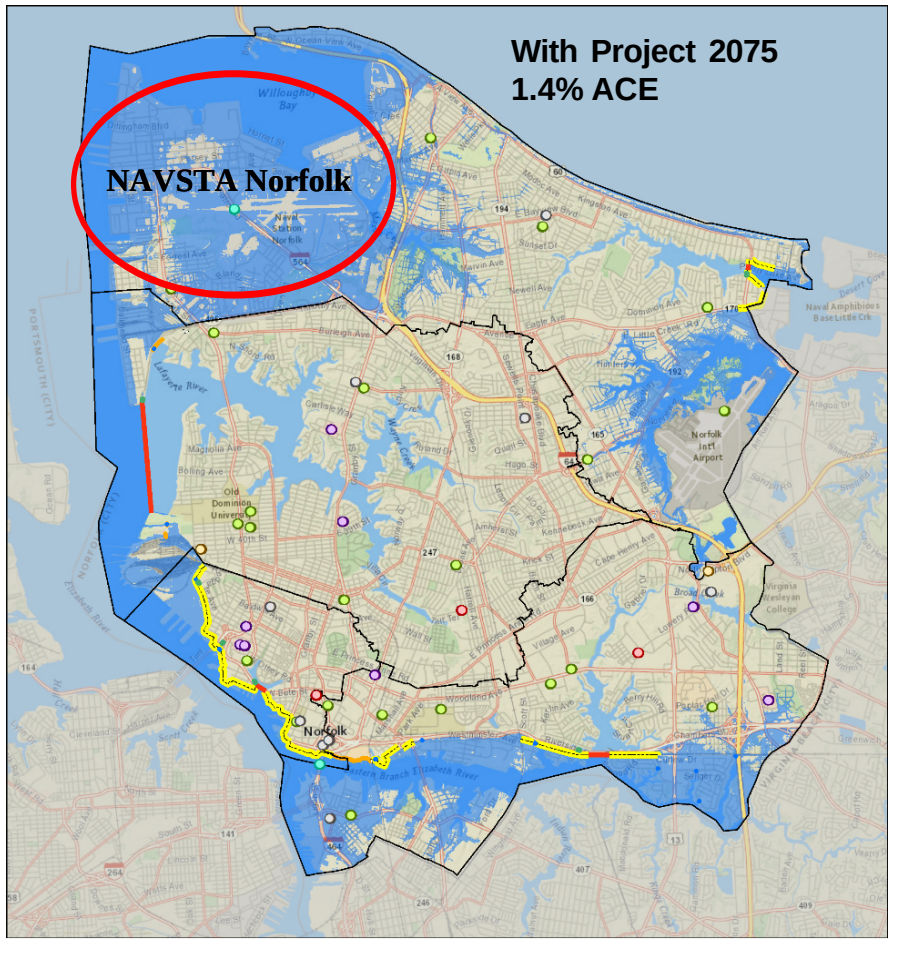
- Legislative changes that would allow the use of Civil Works funds to study and construct coastal protection features at Federal installations and facilities.
- Partnering with Federal or military entities within the Civil Works framework to ensure the development of comprehensive, community-wide, and geographically contiguous storm risk management

BENEFITS

- Preventing the likelihood of military construction funding not being available at the same time and on the same scheduled as a USACE CSRM feasibility study.
- Addressing the geography and coastal environment as a system versus segmented by Federal and non-Federal boundaries.
- Providing support to civilian areas that are integrated with or supported by Federal installations.

Ex. Norfolk CSRM study unable to incorporate features in Recommended Plan to include Norfolk Naval Station.





Levee
Floodwall
Pump Station
Surge Barriers
Tide Gate
Commercial Facilities
Emergency Services Sector
Government Facilities Sector
Health Care and Public Health Sector
Transportation Sector
Water and Wastewater Systems Sector
NACCS 2075 1.4% Inundation

Note: Assumes USACE Intermediate RSLR increase of 1.45 ft. from 2016

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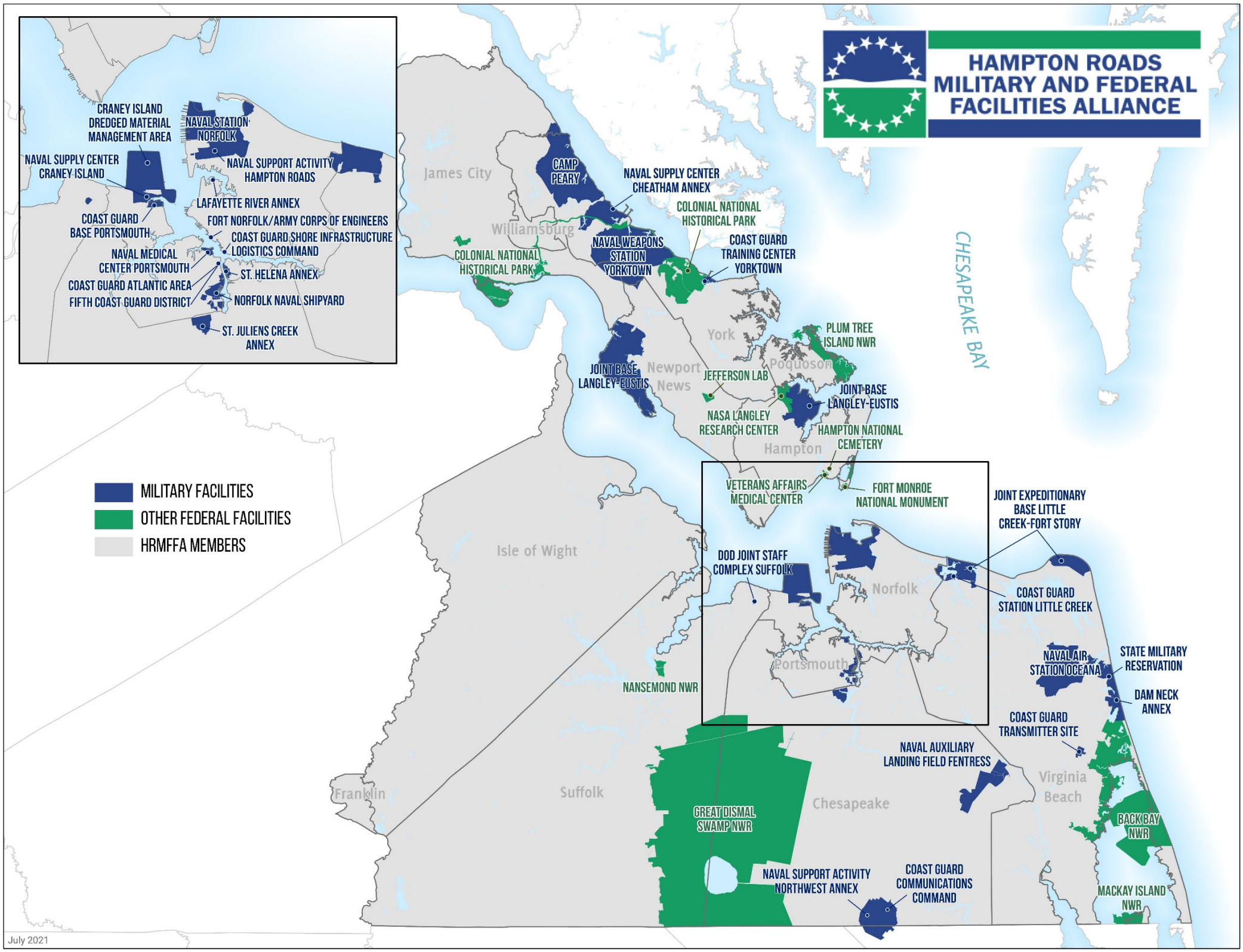

U.S. Army Corps of Engineers, Norfolk District