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ON

NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2022

AND

OVERSIGHT OF PREVIOUSLY AUTHORIZED PROGRAMS

BEFORE THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTEENTH CONGRESS

FIRST SESSION

SUBCOMMITTEE ON READINESS HEARING

ON

FISCAL YEAR 2022 BUDGET REQUEST FOR MILITARY CONSTRUCTION, ENERGY, AND ENVIRONMENTAL PROGRAMS

HEARING HELD
JULY 14, 2021



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FISCAL YEAR 2022 BUDGET REQUEST FOR MILITARY CONSTRUCTION, ENERGY, AND ENVIRONMENTAL PROGRAMS

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON READINESS,
Washington, DC, Wednesday, July 14, 2021.

The subcommittee met, pursuant to call, at 4:00 p.m., via Webex, Hon. John Garamendi (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. JOHN GARAMENDI, A REPRESENTATIVE FROM CALIFORNIA, CHAIRMAN, SUBCOMMITTEE ON READINESS

Mr. GARAMENDI. Good afternoon, ladies and gentlemen. I call to order this hearing of the Readiness Subcommittee of the House Armed Services Committee.

Today's witnesses oversee a wide range of programs that are of great interest to this committee, including military construction, installations, installation resiliency, housing, environmental programs, and response to emerging contaminants—also, energy resiliency and climate change.

Earlier this year, we held a hearing focused on installation resiliency in which we questioned the uniformed leadership of the services' installation commands. Today, I will pose similar questions to the Department's civilian leadership:

What are you doing to ensure our installations are resilient to the specific hazards that they face, be [they] increasingly frequent storm events, droughts, wildfire, flooding, sea-level rise, pandemics, or cybersecurity? How are you incorporating climate-change adaptation measures to ensure long-range resiliency of our Nation's installations and to ensure taxpayers get their full benefit of the military construction investments?

Are you incorporating new materials that are more resilient in your construction? Does your installation master planning incorporate microgrids, environmental charging infrastructure--excuse me, that's EV [electric vehicle] charging infrastructure, and the ability to island in the event of natural or manmade grid disruptions?

Getting the answers to these questions correct is not just about addressing climate change but about ensuring that our installations can continue to perform their critical missions without disruption.

In addition to resiliency, this subcommittee has put considerable focus in the past few years on privatized housing for military families. I assure you that we will continue until all the service mem-

bers have high-quality places to live, free from environmental hazards and chronic maintenance problems.

However, privatized housing is not the only place where our service members live. Most of our junior enlisted service members live in barracks or dormitories. Through chronic neglect, these buildings have been allowed to fall into disrepair and create substandard living spaces for service members. We know that these poor-quality living conditions contribute to poor retention.

The Army announced a $10 billion plan to overhaul substandard barracks by the end of fiscal year 2030, yet only one barrack appeared on the President's budget request for Army military construction. In 2020, the Army announced that people were its top priority, but it seems the Army actually meant that people were their top unfunded priority. Lip service is simply not enough.

With that said, at least the Army has publicly acknowledged the deficiencies in their barrack facilities. I have seen no similar statements from the other military departments, yet I know that similar rates of barracks and dormitories in poor conditions and failing conditions exist within the Navy and the Air Force.

I also look forward to hearing about the witnesses' budget request in support of their environmental programs. In particular, I am surprised to see that the President's budget request for environmental restoration funds, the money used to conduct environmental cleanup, were down considerably from fiscal year 2021 enactment amounts. With thousands of cleanup sites across the country, 698 of which are installations with known or suspected releases of AFFF [aqueous film forming foam] and potential PFASes [per- and polyfluoroalkyl substances] contaminating the surrounding communities, I am surprised by the lack of emphasis on environmental programs. However, with the 2024 AFFF phase-out looming, the Department must be increasing its efforts to address PFASes and not putting them on the back burner.

With that said, I would like to turn to our ranking member, Congressman Doug Lamborn of Colorado, for any remarks you may have.

[The prepared statement of Mr. Garamendi can be found in the Appendix on page 39.]

STATEMENT OF HON. DOUG LAMBORN, A REPRESENTATIVE FROM COLORADO, RANKING MEMBER, SUBCOMMITTEE ON READINESS

Mr. LAMBORN. Thank you, Chairman Garamendi.

I would like to welcome our witnesses here today to discuss their fiscal year 2022 budget request for military construction, environmental and energy programs, as well as base and facility accounts.

Over the past several months, this subcommittee has held focused hearings on many of the core issues within these accounts. It remains clear that the services are struggling to prioritize important investments in our aging and failing infrastructure. That is one of the reasons I am a strong advocate for a higher top line. We cannot continue kicking the can down the road.

I look forward to hearing from OSD [Office of the Secretary of Defense] and the services about what they are doing to address degraded facilities. Years of deferred maintenance have made facili-

ties inefficient, have negatively impacted readiness and retention, and left us exposed to extreme weather events. Deferred maintenance is also bad business and a waste of taxpayer dollars. In fact, Federal disaster mitigation efforts can save up to $6 for every $1 spent.

I am particularly concerned with our organic industrial base and facilities and utilities that were built, in many cases, over 50 years ago. The Navy has a particularly acute problem in this area. The GAO [Government Accountability Office] has assessed that all four public shipyards are in poor or failing condition, with too few functional dry docks. The recent Navy disclosure of the Portsmouth Naval Shipyard dry-dock cost growth from $750 million to almost $2 billion does not engender faith that the Navy has completely bound the overall cost of this essential Navy repair capability.

As to ranges, we still have a myriad of problems that appear to be unfocused. Despite the increased emphasis on our Nation's hypersonic shortfalls, for instance, I am concerned about the Department's ability to adequately test hypersonic weapons. Clearly, range limitations will impede DOD's [U.S. Department of Defense's] ability to adequately develop this capability, yet not one word on this glaring shortfall in any of the witnesses' testimony. And if you look at what China is doing, they are definitely investing heavily in testing capability for hypersonic glide vehicles.

Even in my district, at Fort Carson, there is a continuing lack of emphasis on providing adequate ranges for the garrisoned forces. We have to do better and ensure that our ranges are ready.

There are many other important issues that I am confident will be discussed today. All services must remain focused on the privatized military housing projects. Given the recent troubles and prolonged implementation of the Tenants' Bill of Rights, oversight is critical.

The services' testing, cleanup, and replacement efforts related to PFAS and AFFF is another issue with bipartisan attention. The services must do a better job preventing accidental releases, of which there seem to be too many, as well as finding a suitable replacement for AFFF.

With much competition for dollars in this year's budget, I want to emphasize the need for good investments that can [stave] off the need for additional resources down the road.

I again want to thank today's witnesses, and I look forward to our discussion.

Mr. Chairman, I yield back.

Mr. GARAMENDI. Thank you, Mr. Lamborn.

We will now turn to the witnesses, and I would like to welcome them to this hearing. They are all gathered together at some office building, I suspect at the office at the Department of Defense. First time for them to get together, so we got them all in one place at one time.

We have Mr. Paul Cramer, performing the duties of Assistant Secretary of Defense for Energy, Installation, and Environment, Office of the Secretary of Defense. And then I will introduce the others in order, so—well, let's go here: Mr. Jack Surash, Acting Assistant Secretary of the Army for Energy, Installations, and Environment, Department of the Army; Mr. Todd Schafer, Acting Assistant

Secretary of Navy for Energy, Installations, and Environment, Department of the Navy; and Ms. Jennifer Miller, Acting Assistant Secretary of the Air Force for Energy, Installations, Environment, Department of the Air Force.

So, with that, Mr. Cramer, if you would like to begin.

STATEMENT OF PAUL D. CRAMER, PERFORMING THE DUTIES OF ASSISTANT SECRETARY OF DEFENSE FOR SUSTAINMENT, OFFICE OF THE SECRETARY OF DEFENSE

Mr. CRAMER. Thank you.

Chairman Garamendi, Ranking Member Lamborn, distinguished members of the subcommittee, on behalf of myself and my service colleagues, thank you for the opportunity to present the President's fiscal year 2020 budget request for the Department's energy, installations, and environment programs. I will highlight a few key areas.

Our 2022 budget request supports our efforts to address mission requirements, ensure service members have a safe and resilient place to live and work, and also begins to address resilience challenges.

We are requesting $26.1 billion for military construction and sustainment, restoration, and modernization funding to address critical mission requirements and life, health, and safety concerns within our current fiscal environment. This funding will be used to replace, restore, and modernize enduring facilities to enhance their resilience to climate events and promotes elimination of excess and obsolete facilities.

We are committed to protecting the quality of life of our personnel and their families. Our primary focus here is to ensure access to safe, quality, affordable family and unaccompanied housing. Our budget includes $1.4 billion to support our worldwide nonprivatized family housing inventory, which includes more than 34,000 government-owned and 5,800 leased family housing units. This request also demonstrates our continued commitment to modernizing unaccompanied personnel housing, with more than $477 million requested for eight construction projects.

With regard to privatized housing, the Department continues to prioritize actions that improve the tenant experience and rebuild tenant trust. Our initial phase was predominantly focused on implementing the MHPI [Military Housing Privatization Initiative] Tenant Bill of Rights and the NDAA [National Defense Authorization Act] requirements embedded in those rights. The Department has issued all policy guidance necessary to implement all rights at all MHPI housing projects. With few exceptions, all 18 tenant rights are now available.

Our budget also requests approximately $3.6 billion for environmental programs, supporting activities ranging from managing critical habitat and avoiding training restrictions to addressing drinking water health advisories and making the best use of our cleanup dollars.

Finally, the Department depends on resilient installations. To prepare for peer competition where even the homeland is contested, the Department is addressing a change of technology, operational, and policy initiatives to enhance the use of energy in warfighting.

To that end, we are requesting $4.3 billion in energy investments, including both installation energy and operational energy. This includes approximately $287 million for the Energy Resilience and Conservation Investment Program, or ERCIP, a significant increase over last year's request to reflect the significance of risk to energy systems.

We appreciate Congress and this subcommittee's continued support as we work together to provide the best possible support for our soldiers, sailors, airmen, Marines, guardians, and their families.

I look forward to your questions.

[The prepared statement of Mr. Cramer can be found in the Appendix on page 41.]

Mr. GARAMENDI. Mr. Cramer, thank you very much.

Let's now turn to the Army and Mr. Jack Surash.

STATEMENT OF J.E. "JACK" SURASH, ACTING ASSISTANT SECRETARY OF THE ARMY FOR INSTALLATIONS, ENERGY AND ENVIRONMENT, DEPARTMENT OF THE ARMY

Mr. SURASH. Thank you very much, Mr. Chairman, Ranking Member Lamborn, members of the subcommittee. On behalf of the soldiers, families, and civilians of United States Army, thank you for the opportunity to discuss the Army's fiscal year 2022 budget request.

The request works to address the challenges the Army faces in privatized housing and barracks while at the same time working to increase the climate resilience of our infrastructure. While we face a challenging task, we are making measurable and continuous progress in a challenging budget environment.

We have developed and are executing complementary strategies that inform our actions. The Army Installations Strategy supports the Army People Strategy and the Army Modernization Strategy and together encompass our efforts in taking care of people, strengthening readiness and resilience, modernizing and innovating, and promoting stewardship.

As you know, housing has been a key focus area. Our soldiers and their families deserve high-quality, safe housing. Our focus is on fixing the privatized housing issues brought to light in 2018 while at the same time working with the privatized companies to strengthen the long-term financial health of the housing portfolio.

We are conducting 100 percent quality assurance inspections on change of occupancy and on all life, health, and safety maintenance work orders.

The Army fully implemented all 18 Tenant Bill of Rights at the majority of our 44 installations. We will execute the remaining three tenant rights at eight installations by the end of the summer.

The privatized housing providers are spending $1.5 billion and reinvesting another $1.3 billion on housing improvements over the next 5 years.

In regards to barracks, the Army has invested $2.1 billion for construction, operations and maintenance, and restoration and modernization over the last 3 years. The Army is focused on modernizing barracks standards that incorporate user feedback and the latest technology. The Army will continue to work to increase the

overall quality of housing, both Army-owned and privatized housing as well as barracks.

All of this is occurring while the Army is working to maintain and increase the resilience of our installation infrastructure. Energy and water resilience, or uninterrupted access to energy and water, are essential for Army readiness and ensuring the Total Army can deploy, fight, and win.

Among the threats we face, climate change is a direct threat to Army readiness and our ability to accomplish the mission. To combat this threat, the Army is proactively taking steps to address the impacts and causes of climate change and extreme weather at our installations and upon our operational forces.

Army readiness begins on our installations. Through adaptation, mitigation, and innovation, the Army will work to secure the readiness and resilience of forces, functions, and facilities.

Thank you for the opportunity to present this testimony and for your continued support of our soldiers, civilians, and families.

[The prepared statement of Mr. Surash can be found in the Appendix on page 60.]

Mr. GARAMENDI. I thank you, Mr. Surash.

We will now turn to Mr. Schafer, Acting Assistant Secretary of the Navy.

STATEMENT OF TODD L. SCHAFER, ACTING ASSISTANT SECRETARY OF THE NAVY FOR ENERGY, INSTALLATIONS AND ENVIRONMENT, DEPARTMENT OF THE NAVY

Mr. SCHAFER. Thank you, Chairman Garamendi, Ranking Member Lamborn, and distinguished members of the committee. I thank you for the opportunity to testify on the Department of the Navy's fiscal year 2022 budget request for energy, installations, and environmental programs.

The Department of the Navy appreciates the committee's continued support of Navy and Marine Corps installations. These installations directly enable the lethality and warfighting readiness of our maritime forces.

The Department of the Navy's military construction request for 2022 includes $2.3 billion for 29 projects that invest in new platforms and technology as well as replace and modernize an aging infrastructure. Eight construction projects support the relocation of our Marine Corps forces from Okinawa to Guam.

This request also reflects our commitment to the Shipyard Infrastructure Optimization Program and to ensure the Navy's public shipyards are ready and able to support the maintenance plan for current and future submarines and aircraft carriers.

To take care of our existing infrastructure, our 2022 budget request funds the sustainment of Navy and Marine Corps facilities at 80 percent of the Department of Defense Facilities Sustainment Model.

The Department of the Navy is also requesting nearly $1 billion to fund projects that restore and modernize existing infrastructure, to include naval shipyards, utility infrastructure, runways and taxiways, hangars, training facilities, and waterfront structures.

Our 2022 budget request sustains the funding needed to ensure military families receive safe, quality, and well-maintained housing

and fair treatment from the military housing companies that own, operate, and maintain privatized housing.

Over the past 2 years, all levels of leadership across the Department of the Navy have been laser-focused on improving the privatization housing experience for sailors, Marines, and their families. Although work remains, we are beginning to see improvement in the operation, maintenance, and customer service provided by our privatized housing partners.

Navy and Marine Corps installations face threats from natural disasters and climate change, as well as risk to energy, water supplies, and industrial cyber control systems. Our 2022 budget request continues the Department of the Navy's commitment to installation resiliency and treats it as a crosscutting consideration integrated into all of our installation planning. We also include it in our environmental conservation and restoration, our facility design and construction, and in all of our decisionmaking processes.

Finally, we appreciate this committee's continued attention and the urgent need to modernize the Navy's premier aviation training range, the Fallon Range Training Complex in Nevada. The Department of the Navy remains committed to working closely with Tribal governments; environmental organizations; the State, county, and local community; and the Department of Interior to develop a solution that meets the desires of all stakeholders while providing our warfighters a range complex that meets their critical training and readiness needs.

As directed by the fiscal year 2021 National Defense Authorization Act, the Department of the Navy has collaborated with the Secretary of Interior to establish the Fallon Range Training Complex Intergovernmental Executive Committee to obtain views of stakeholders on Fallon Range Training Complex modernization and information related to management of natural and cultural resources on the range.

Thank you for the opportunity to provide this opening statement. We look forward to the continued support and attention of this subcommittee, and I am ready to address your questions. Thank you.

[The prepared statement of Mr. Schafer can be found in the Appendix on page 75.]

Mr. GARAMENDI. I thank you, Mr. Schafer.

We now turn to Ms. Miller, Assistant Secretary of the Air Force, Energy, Installations, Environment.

STATEMENT OF JENNIFER L. MILLER, ACTING ASSISTANT SECRETARY OF THE AIR FORCE FOR ENERGY, INSTALLATIONS AND ENVIRONMENT, DEPARTMENT OF THE AIR FORCE

Ms. MILLER. Chairman Garamendi and Ranking Member Lamborn and distinguished members of the committee, thank you for the opportunity to testify today.

I am here with you to review the status of our installation and energy priorities to ensure the Department of the Air Force continues to provide installations as power-projection platforms in support of the National Defense Strategy.

The fiscal year 2022 President's budget request supports the Interim National Security Strategic Guidance and lays out a plan to

modernize our military capabilities. The military construction budget prioritizes nuclear enterprise modernization and combatant command infrastructure in Europe and the Pacific. The budget also funds high return on investment in operational energy initiatives and provides for the quality of life of our airmen, guardians, and their families through investments in housing, dorms, child development centers, and community support facilities.

Secretary Austin identified tackling climate as one of the top efforts in support of the "defending the Nation" priority. Changing climate and severe weather events are a continual threat to our installations.

Over the past several years, the Department has seen firsthand the impacts climate and severe weather can have on our installations. As a result, we are smartly moving forward with the rebuild efforts at Tyndall Air Force Base following Hurricane Michael in 2018 and Offutt Air Force Base following the flooding in 2019.

Additionally, the Department enhanced installation resilience, or the ability to continue military operations in the face of challenges, to bounce back from adversity across numerous fronts.

Climate and energy resiliency considerations are being incorporated into installation development plans. Last year, we published a "Severe Weather and Climate Hazard Screening and Risk Assessment Playbook." This gives installation-level planners a consistent and systematic framework to screen for severe weather and climate hazards and assess current and future risks.

We remain firmly committed to a robust environmental conservation program, responsible environmental restoration, and protecting human health.

Regarding PFAS, the Department developed a framework to identify and remediate impacted areas. While there are no national primary drinking water regulations for PFAS, the EPA [U.S. Environmental Protection Agency] established lifetime drinking water health advisories for two—PFOS [perfluorooctane sulfonic acid] and PFOA [perfluorooctanoic acid].

Our strategy focuses first and foremost on ensuring that no one, on or off our installations, is drinking water with a Department-related PFAS or PFOA above that health advisory. And, second, I am using those CERCLA [Comprehensive Environmental Response, Compensation, and Liability Act of 1980] authorities to investigate, define, remediate groundwater and soil impacted by the Department activities.

The Department also communicates and collaborates with local communities, State and Federal agencies, and elected officials at all levels.

Regarding privatized housing, the Department, with the support of Congress, took substantive action to address concerns and make meaningful changes to our privatized housing program. Nearly all the housing companies have agreed to implement the additional 18 tenant rights.

Some privatized housing highlights we have implemented in the last year include increasing program and project oversight, as well as 60 new resident advocates that directly support military families.

We will keep focus on improved oversight, long-term project health, and sustainment of housing inventory to provide military families access to safe, quality, and affordable housing communities.

Finally, the Department continues to develop an agile and optimized approach to powering our aircraft and providing airmen with the fuel when and where they need it. We are improving enterprise-wide fuel-use data collection and conducting analysis to identify areas where existing missions can be performed more effectively with fewer resources.

Through partnerships with aviation and commercial industries, we identify innovative solutions to modernizing legacy aircraft and weapon systems while maintaining our lethality.

Mr. Chairman and Ranking Member Lamborn, that completes my remarks. Thank you for the opportunity to testify today, and I look forward to your questions.

[The prepared statement of Ms. Miller can be found in the Appendix on page 85.]

Mr. GARAMENDI. Thank you very much, Ms. Miller.

We are now going to questions. We want to try to maintain the 5-minute clock as we go through this, although the chairman has some leeway, as does the ranking member. The rest of you, it is 5 minutes or out. So we will carry on here. I am going to do mine very quickly.

Earlier, I had a discussion, Mr. Cramer, about the Department of Defense and what you are doing to carry out the President's executive order with regard to climate change.

Could you speak to us about what the Department, the Secretary of Defense office, and then the various departments are doing to carry out that instruction at the Department, that all Federal agencies aggressively address the climate-change challenge?

Mr. Cramer.

Mr. CRAMER. All right. Thank you, Mr. Chairman.

First of all, before I start, I want to, you know, take the opportunity now to thank the great team of professionals that we have assembled within the Department of Defense in very short order.

So the President's executive order came out, one of his first ones, in the early part of January. So we rapidly organized a team of professionals to address the executive order, led at the Department of Defense level by DASD [Deputy Assistant Secretary of Defense] Richard Kidd and Dr. Kate White, who is an expert in climate. This is kind of their pinnacle of success, if you will. They have been, you know, training their whole career to get at this.

And where we are at within the Department is all telling. And so I don't need to go into too much details about the effects of climate, because I think we all realize that. But the Executive Order 14008, "Tackling the Climate Crisis at Home and Abroad," in our response to that we put together the DOD Climate Adaptation Plan, which is in final draft, going up to the Secretary for signature. It is an all-of-the-Department plan, and we are all going to sign that.

In response to the EO, we have been asked not to publish that officially until all the rest of the executive branch plans get done. And that will be no later than 1 September. Or, if we get direction,

we will release it early. But I am able to go through some of the highlights within our Climate Adaptation Plan [CAP].

And the primary purpose of our CAP is to integrate climate-change adaptation and climate resilience across our programs, management of real property, our public lands and waters, and financial services.

The Department is responding to climate in two ways: adaptation to enhance resilience—these are actions and adjustments in natural or DOD systems in anticipation of or response to a changing environment in a way that effectively uses beneficial opportunities to reduce negative effects of climate—and our mitigation efforts that are being used to reduce greenhouse gas emissions.

The basis of our plan is wrapped around five lines of effort, and I will briefly go through each one of those.

Line of effort number one is climate-informed decisionmaking. What that is is climate considerations must continue progress towards becoming an integral element of DOD's enterprise resource allocations and operational decisionmaking process.

Line of effort number two: train, test, and equip a climate-ready workforce. This LOE will help shape the Department's efforts across activities related to developing, acquiring, fielding, and sustaining equipment and services.

Line of effort number three: resilient built and natural infrastructure. Built and natural infrastructure are both necessary for successful mission preparedness and readiness. Built infrastructure serves as the staging platform for the Department's national defense and humanitarian missions. Natural infrastructure supports military combat readiness by providing realistic operational testing to combat environments and conditions.

Line of effort number four: supply-chain resilience and innovation. A climate-resilient supply chain is one in which the Department has ensured that key suppliers and industries can still operate while impacted by climate change, with uninterrupted access to key supplies, materials, chemicals, and services.

Line of effort number five: enhance adaptation and resilience through collaboration. The Department will build unity of effort in mission across DOD components to exploit lessons learned and economies of scale and integrate that into existing DOD missions, not as a subset from that.

And I will turn it over to my colleagues, if they want to amplify anything.

Mr. GARAMENDI. Let's stay with this. We will go with the amplification from each of the departments, and then we will turn to Mr. Lamborn.

Shall we go in reverse order? Let's go with Air Force one. That is not an airplane; that is you, Ms. Miller.

Ms. MILLER. Well, Congressman, thank you.

So we have started working on our climate goals in support of the executive order and the climate action plan. And, as part of doing that, as Mr. Cramer briefed, we have two main lines.

The difference particularly with the Air Force, I think, is some of the initiatives that we are able to implement in the operational energy arena, because that is over 80 percent of our consumption

comes from operational energy. So we are looking at a lot of things there, some of them big items.

But one of the things that we have been able to get funded this year is some of the relatively small items, whether it is the angling of our windshield wipers on our aircraft, to little winglets, to things that we have been able to modify the aircraft, often stealing good ideas from industry. All of these things that we have been able to implement for less than $40 million this year have a return on investment within the FYDP and have some real opportunities for big savings, although little investments.

Some of the other areas that we are looking at with mitigation for our installations include things like, you know, reducing the footprint, increased demolition; trying to look at, with new telework policies, is there a way to reduce the requirements when we are building new; in our acquisition policies, being able to leverage the existing infrastructure and consider that as part of our acquisition; and then some of the things that we can do with a climate-literate workforce, including climate in all of our considerations.

On the adaptation piece, the installation energy plan, so we are well on our way to that. And by the end of next year, we will have 75 percent of our major energy-consuming installations complete. We will work those into our installation development plans.

And then some real good work that has been done with the pull-the-plug exercises. We have actually three more on the books. We have had great success so far and support from our leadership in doing that to try to determine where we have some installation energy vulnerabilities and water vulnerabilities, that then lead to where we invest our resources and prioritize our resources to get after those vulnerabilities.

I know I have probably already taken too much time, sir. Happy to answer any additional questions on those, or I can turn it over to my service counterparts.

Mr. GARAMENDI. Let's go to the Navy.

Mr. SCHAFER. Thank you, Mr. Chairman.

Climate resiliency, environmental issues, these are very important to us. As we are following the lead from the Department of Defense, we, too, are working on our climate-change issues. It is a national security concern for us.

And, as we are working through this, we think about sea-level rise for a lot of our installations that are on coastal areas. When we are working to build a resilience plan, we work with local, county, and State governments to ensure that we are good partners with the community.

We are also looking at the effects of climate change on things such as energy, water, and also the cyber piece of this, what it can do for our control systems.

My colleague from the Air Force mentioned that they have run some black-start exercises where we actually disconnect the base from the electric grid. We have done that out at Marine Corps Air Station Miramar. We have actually done that twice, where we have turned the commercial power off there. And by the use of a microgrid and 11 megawatts on-site energy capability, we were able to support the 100-plus critical mission facilities for 14-plus days.

So we are certainly taking advantage of providing energy security for things that may happen from a climate environment.

And another example is that, in August of 2020, during the heatwave out in California, we actually used our microgrid to prevent rolling brownouts in the California area there at Miramar.

So, clearly, climate is a big deal for us. We are prioritizing it into all the actions we do. And we are doing that to build climate resiliency into all of our infrastructure. So that includes our master planning, our development, our design and construction. And it also is in all of our decisionmaking processes, just as the Secretary of Defense has directed, that we need to consider climate issues in all of our processes and decisionmaking.

Mr. GARAMENDI. Thank you very much.

And we will end with the Army and then turn to Mr. Lamborn.

Mr. SURASH. Thank you, Mr. Chairman.

So, along the lines of what you just heard, what the Army is doing is, of course, working very closely with the Office of the Secretary of Defense and our sister services with respect to all things climate change.

What we have chosen to do in the Army is, starting in late February, we have put together a Climate Change Working Group. This is an across-the-Army effort. Because we really see climate change having a big effect on the operating forces of the Army, training, deployment, employment of operating forces and the need for such, as well as very obvious implications on our installation side.

So the [inaudible] is we will have a climate-change strategy that the Secretary of the Army will release probably within 60 days or so. And then we will have a very detailed climate-change action plan that will lay out a multiyear effort that covers everything with respect to the operating forces and installations that the Army is going to attempt to do, sir.

Mr. GARAMENDI. Well, very good. Thank you very much. You can be assured that we will be following up at the 60 days, so that will fit into our schedules also.

In any case, this is extremely important in every way. We last year called it conservation, energy conservation, and the like. We will follow up with more detail from you and from us.

Mr. Lamborn, if you would care to proceed.

Mr. LAMBORN. Thank you, Mr. Chairman.

I would like to ask Mr. Cramer about hypersonic ranges.

Our Nation is late in developing adequate hypersonic weapons but is starting to expand our industrial base to support a near-term hypersonic capability. But we do have a glaring shortfall in range capabilities, and because of this deficit, industrial base partners may have to field more antiquated approaches, because range limitations prohibit testing the latest technology.

Do you share this concern, and do you have any solutions going forward, Mr. Cramer?

Mr. CRAMER. Congressman, I do share that concern. We have had some conversations within the Department on how we are going to achieve the maximum range of the hypersonic systems.

I do not have any solutions I will talk to here, but I would be glad to have folks get on your calendar and come down and sit

down and kind of go through, you know, what those possible solutions would look like.

Mr. LAMBORN. Okay. Let's do that. Because I don't want to continue losing ground to China and Russia on this important issue.

Mr. Surash, the Piñon Canyon Range near Fort Carson has a multitude of existing limitations, including utility easements and airspace limitations. Does the Army have a plan to address these limitations? And can you explain any corrections that you are anticipating?

Mr. SURASH. Sir, I am aware that we are working on this. I don't have the details at my fingertips, but I will be happy to follow up with you on that, sir.

Mr. LAMBORN. Okay. Thank you.

Ms. Miller, with the transfer of installations from the Air Force to the new Space Force, there will be a corresponding shift in how these installations support the space mission. For example, flying and fighting and winning in the space domain obviously requires less focus on airfields and more on critical infrastructure for launch and for controlling assets once they are operating in space.

So my question is, to what extent has the Space Force developed standards and measures for assessing the readiness of its critical infrastructure systems?

Ms. MILLER. So, Congressman, thanks for that question.

We are actually going to be supporting within the Department of the Air Force the space installations from a secretariat. And many of the functions that our A4 logistics/engineering staff performs now will be continued to be performed by the secretariat, and many of those functions by the Air Staff. So a lot of the prioritization, the support, the assessments will be done in the same way. It will be fairly transparent.

Now, the difference will be, as we transfer the FSRM [facilities sustainment, restoration, and modernization] and then in a couple years the MILCON [military construction] authority over to the Space Force, then those will be prioritized within the service, but then ultimately brought together at the secretariat for the assistance on the budget prioritization. So the readiness assessment ought to be fairly similar, and I haven't see proposals for a transfer on that.

Mr. LAMBORN. Okay. Thank you for that update.

And are the Space Force missions being reported for readiness on the Defense Readiness Reporting System? Maybe I didn't catch that, but for the system itself, what is the status there?

Ms. MILLER. So, for readiness, I can speak to installation investments, sir, but I would have to reach out to our probably J3 or our readiness experts, either an S3 or A3, on that. So we can take that for the record, on how they are reporting space readiness.

[The information referred to can be found in the Appendix on page 115.]

Mr. LAMBORN. Okay. Thank you. Yeah, please let us know on that one.

And then, finally, what plans does the Space Force have for identifying, prioritizing, and resourcing installation military construction requirements that do align with its new mission?

Ms. MILLER. Yes, sir. So, right now, the MILCON process still runs through the same, so the Department of the Air Force is managing the MILCON for the Space Force and the Air Force until 2024.

At that time, assuming that the capabilities exist within the Space Force to prioritize their MILCON, then they would transition. I presume that they would use much of the similar methodology that we use within the Department of the Air Force, but, at that time, in 2024, the Space Force will have entire control of both the MILCON and the FSRM accounts.

Mr. LAMBORN. Okay.

Thank——

Ms. MILLER. So we——

Mr. LAMBORN [continuing]. You all for being here.

Ms. MILLER. Oh. Sorry, sir.

Mr. LAMBORN. Oh, I was just—if you have something else to say, please finish. Otherwise, I was going to transition back.

Ms. MILLER. Yeah. So we will still consolidate for both the Space Force and the Air Force within the Department of the Air Force for the policy guidance, the budgetary oversight, et cetera. So there still will be the consolidating and review function by the secretariat for both departments.

Mr. LAMBORN. Okay. Thank you. And thank you all for being here.

Mr. Chairman, I yield back.

Mr. GARAMENDI. Thank you, Mr. Lamborn.

The gavel order is—well, let me find it here—Mr. Courtney, Mr. Wilson. And then we will have more beyond that. I will make an announcement as soon as I get the order.

So, Mr. Courtney, you are up.

Mr. COURTNEY. Great. Thank you, Mr. Chairman.

And thank you to the witnesses for being here today.

You know, we had a subcommittee hearing not too long ago about the chronic, sort of, delays in terms of turning around ship repairs and submarine repairs, particularly the attack submarines, which the public yards have really struggled in terms of finding capacity to get those platforms turned around and back out in deployment.

You know, Mr. Schafer, you mention on page 2 of your testimony the Shipyard Infrastructure Optimization Plan, the SIOP, which was established in 2018. Looking at the actual numbers which were in the budget for, you know, real construction, the Navy requested $250 million for a dry dock at Portsmouth and $156 million for dry-dock improvements at the *Ford*-class aircraft carrier at Norfolk, and that is it.

And, I mean, looking at the SIOP plan, which was about $21 billion of work, it seems like we are just really moving at a snail's pace. At the same time, you know, many of us in our committee has been pushing to expand the size of the Navy's fleet. We still have a lot of aging ships out there.

Is this enough for us to really achieve the goal of SIOP, which, you know, even the CNO [Chief of Naval Operations] has been coming before us and talking about the, you know, critical piece of the spectrum in term of the Navy's ability to get ships and sub-

marines out there. This seems, really, like a meager request for the scale of the need that is out there for SIOP.

Mr. SCHAFER. Rep. Courtney, you certainly hit on a very important program for the Department of the Navy and our ability to generate ready forces. Our SIOP plan is a long-term plan, as you probably know, that is going to go over multiple years and be multiple billions of dollars at the end. We are in the process of completing a 5-year plan to share with you all on this committee and others on Capitol Hill.

We certainly have to keep in mind that we have got to—we've kind of got to—I am going to use an Air Force example—we've kind of got to build a plane as we fly it, because we can't take down all our dry docks at once. We have to continue to do maintenance.

So that is part of what may make our submission look like it's a little meager to get going, but this is all a complex problem. And our Naval Sea Systems Command, who does our maintenance on our ships, has laid all this out and worked with our operating forces to ensure that we've got a SIOP program that will still allow us to meet the demands of the combatant commanders for force employment going forward, sir.

Mr. COURTNEY. Great. Well, I mean, the good news is, I think you have a lot of support on this subcommittee for SIOP. I mean, I think, you know, it took a while for people to sort of recognize, you know, how critical this is, but now I think the interest is sky-high.

And, you know, as soon as we can get that multiyear, sort of, view of what the plan is, I think, frankly, it will increase people's comfort level. So we certainly anxiously await that analysis.

Thank you for your answer.

And, with that, I yield back.

Mr. GARAMENDI. Thank you, Mr. Courtney.

I have repeatedly asked for the—not the 20-year plan, but what are you going to do in the next 5 years? I am not going to badger you further today, but, guaranteed, I will badger you again tomorrow and the day after that until I get that 5-year plan. What are you going to do in the next 5 years? How much money do you need? Where is it going to be spent? What will be the effect of it?

So I will just let it go at that.

Now, Mr. Wilson, it is your turn.

Mr. WILSON. Thank you, Mr. Chairman.

And I want to assure our witnesses—thank you today—that there is not badgering from the chairman; he is just making inquiries. Okay? And so——

Mr. GARAMENDI. No, no. This is badgering.

Mr. WILSON. No, no, no, no, no. Hey, hey, hey. This is inquiry.

But, Secretary Miller, the fiscal year 2019 NDAA requires the Department of Energy to study the deployment of microreactors, small modular reactors, at DOE facilities for energy security.

And, earlier this year, there was issued an executive order requiring the Department of Defense to make a report on microreactors, small modular reactors, and their implementation at domestic military installations.

What is the status of looking into enhanced energy resilience using these small modular reactors?

Ms. MILLER. Congressman, we have a great interest in it. I was actually able to go up about a year ago to Eielson and physically tour the coal plant there and look at and talk to the folks about their excitement with the pilot program out there.

So we are just getting underway on the pilot program, but we are excited to see what capabilities that provides us for our CONUS [continental United States] installations and then the potential to have those be mobile for other locations.

Mr. WILSON. And, to me, the energy stability and dependability would just be fantastic for island installations, including an entire island, the territory of Guam. But, over and over, I wish you well in looking into that.

And for any one of you, I would like to receive back—you don't have to do it right now. I am keenly interested in having from any one of you a prognostication of rising sea levels. What level of rise do you anticipate? What years of anticipation? Is there a variance by location on east coast, west coast?

Additionally, I am interested in a prognostication of rising temperatures. Again, what is the anticipated rise and what year?

And then also the prognostication—since I represent South Carolina, we are keenly interested in hurricanes. What is your prognostication of Atlantic hurricanes? How many and which year?

And for the three different issues of rising sea level, temperature, and hurricanes, I would really appreciate that in a narrative but also a graph format. And if you would please provide that to me. I would like to see what is being done.

And then, Secretary Surash, I am grateful to represent Fort Jackson, which serves as the public face of our Army for more than 45,000 basic trainees and their families every year. Despite the efforts to have the reception barracks complex completed, it is still not being included in the budget. What is the anticipation of what can be done for the reception barracks?

Mr. SURASH. Congressman, thank you for that question.

Sir, I am showing that our request has $34 million for phase two of the reception barracks at Fort Jackson, sir.

Mr. WILSON. Well, hey, I appreciate that very, very much. That is going to be very positive.

Additionally, we have, sadly, effective cuts in the fiscal year 2022 budget. And for Secretary Surash, what is the long-term impact on Army families of delayed investments in the base housing and childcare centers?

Mr. SURASH. So, sir, we've got a real focus on housing and childcare centers. I think we are moving along fairly smartly.

With respect to child development centers, we were not able to include any child development centers in the military construction portion of the bill. Over the next 10 years, we are looking to invest in about 21 additional child development centers, and I think that is going to provide about 4,500 spaces; and, through the restoration and modernization program, about 10,500, again, over the next 10 years, sir.

Mr. WILSON. Well, hey, thank you again for your efforts.

And back again on the different graphs as to rising sea level, temperature, hurricanes, if you could get that to Drew Kennedy in my office, I would really appreciate it—1436 Longworth House Of-

fice Building. That would be very helpful. I would love to see those graphs as soon as possible so that we can get prepared.

Thank you.

And, Mr. Chairman, I yield back.

Mr. GARAMENDI. Thank you very much, Mr. Wilson. Your inquiries were well put.

Now, the gavel order going forward—let's see here. We have Jason Crow, Mark Green, and Kai Kahele, in that order.

Jason, you are up.

Mr. CROW. Thank you, Mr. Chairman.

And thank you all to the witnesses for joining us today.

In the March 26 hearing entitled "Lessons Learned from Winter Storm Uri," I asked about the MIRA Act, my Military Installation Resiliency Assuredness Act, which was included in the fiscal year 2020 NDAA and requires all major military installations to integrate into their master plan assessments of resiliency, climate effects, and extreme weather.

To our knowledge, none of those assessments have been conducted by any major military installations during their planning process updates.

At the hearing, I asked General Gabram when he expects the master plan updates relative to the MIRA Act to be provided to Congress. General Gabram told me that he would take it for the record and get back to me on that. We have not received any information from the Army or any service, so that taking for the record did not actually occur as promised.

So, starting with the Army, when are we going to get that information? And can we expect it from every other service as well?

Mr. SURASH. Sir, we are very aware of—I believe it was an amendment that you personally sponsored, sir, and what it requires. I can assure you, we have rolled those requirements into the master planning process within the Army. I know we are working on this. I will you get you what our plan is looking like over the next couple years, sir.

Mr. CROW. Thank you, and I appreciate that. I guess it is good to know that you are aware of it and you have rolled it into the process. What we were looking for was an update as to how many, if any, of those master plan updates have occurred. If the answer is zero, that is fine. I think we just want an answer. If it is one, if it is three, we just want some sense as to where are we in effectuating that requirement.

Any of the other services have updates in that regard?

Ms. MILLER. Sir, so I can tell you, what we did in the Air Force is we did issue, last year, our guidance on that. And so it was done through "Severe Weather and Climate Hazard Screening and Risk Assessment Playbook," which may sound fairly simple to issue the guidance, but it was a 40-page analysis that really provided good information for the installation planners on how we wanted them to assess. And it included the 16 risks, from hurricanes to fires, that we needed each installation to assess against and what criteria, mostly using our A3 weather office, would be the, kind of, authoritative source upon which they could rely.

We did that initial screening for over 80 of our installations. And then what we have done with that now is start putting that into

our installation development plans. So, within the next 5 years, now that everyone has done the initial assessment, that will roll into our installation development plans.

As we have that information, though, it allows us to modify, as an example, the Tyndall rebuild and the Offutt floodplain rise, to modify based on the risk assessment, not only of what type of risk it would be, but then we also assess each as a yellow, green, red for the 0–25-year and then also the 25–50-year look.

Mr. CROW. Thank you. That is very helpful. I appreciate that response.

Mr. SCHAFER. And, sir, from the Department of the Navy, we have actually completed one of those at Indian Island. We are in the process of continuing to train our Navy Facilities Command engineers and others on how to do that. And those too will roll into our installation master plans over the next 5 years as they are updated.

Mr. CROW. Thank you.

Well, in the remaining minute here, I have a question about the DCAT, the Defense Climate Assessment Tool. I wanted views from the services, all of you, on how that process is going. I understand upwards of 1,300 of those have been used service-wide.

I would love any thoughts on how it is working and whether any changes need to be made to make it a more effective, more efficient tool for all of you. Whoever wants to take that.

Mr. CRAMER. So let me start, and then I will transition over to the military departments.

Yeah, this, actually—I am glad you brought it up, Congressman. So the DOD Climate Assessment Tool actually helps answer Congressman Wilson's question, too, about sea-level rise.

So the DCAT is just a higher level assessment tool of the most vulnerable things for an installation. Obviously, on a coast, it could be sea-level rise. If you are in interior, much like Colorado, really, your issues are more like drought, desertification, those kinds of things.

And the DCAT looks at it at a higher level, and it could go all the way down to a facilities-level look, which then informs those master plans, those installation energy plans as you go forward.

So we view, in the DOD, the DCAT model in high regard, because it does provide that upper-level assessment based on the [inaudible] that we [inaudible]. And then we project out two iterations, one 2050 and then one 2085, and then you can then plan accordingly as you move into that.

What comes out of the DCAT, then, would be those installation energy plans, those master plans.

And then I will turn it over to my colleagues.

Mr. CROW. Thank you. And I would love to hear more, but I am out of time.

So, respectful of my other colleagues, I will yield back, Mr. Chairman.

Thank you to all of you.

Mr. GARAMENDI. Thank you, Mr. Crow. We may come back to this issue. There may be other folks who want to ask the same question.

Mr. Green, you are nodding your head as though it is your turn, and it is. Go wherever you would like to with the questions.

Dr. GREEN. Well, thank you, Mr. Chairman. And I am confident that that will be brought back up. I am going to focus on something different in this first round.

And, Mr. Chairman, thank you and ranking member for having the witnesses here today. And I want to thank our witnesses for being here. Thanks, too, for your service to the country.

As we seek to ensure that our military is prepared to face the challenges of the coming decades and this new sort of major-competitor paradigm that we are in, one of my primary concerns is that we are taking care of those warriors' needs when they are back at home station. It is a fundamental obligation with very far-reaching effects on retention and, thus, readiness.

Unlike almost all of our competitors, America's military is an All-Volunteer Force. No one I served with or Jason served with or others on the committee here served with anyone who was forced to be there. They were all volunteers. And it imposes a challenge on our leadership, both in the military and in Congress.

Our men and women in uniform are disciplined, they are hard-working, and that makes them excellent recruits for the private sector. If we want to maintain or retain talented, experienced service members, we have to take care of them. And one key aspect is making sure that base housing meets those needs, those individual needs.

Base housing at my base, Fort Campbell, which is in my district, has some significant issues. Many facilities are over 50 years old. They are in poor condition—mold, mildew. I have visited many of them. Other damage has accumulated over the years. There are outdated barracks there that no longer suit the demands of the units that they house.

And, in particular, the barracks for the 1st Brigade of the 101st Airborne Division—a very proud unit with a proud history at Fort Campbell. They are living in dilapidated, mold-filled—they are continuously moving the soldiers out, getting the mold out, putting them back in, but the way that those structures are built and its age, it just comes back.

I get pictures of those barracks texted to me every month, and it is upsetting. Our troops deserve better. And I will actually be at Fort Campbell tomorrow looking at it again. And it is in my view that that set of barracks for the 1st Brigade has got to be a priority.

And, Mr. Surash, I would like to ask you, first, in general, to address restoration and modernization of the barracks and then, specifically, if you are aware of what is going on at Fort Campbell and the 1st Brigade and there is any plan to fix that.

Mr. SURASH. All right, sir. Thank you very much for that.

So, as I mentioned in my statement, we are very focused on taking care of people and, among those things, our barracks. So, in fiscal year 2019 through 2021, overall in the Army, we invested $2.1 billion in barracks projects. A portion of that was military construction, and the larger portion was actually restoration and modernization.

What is contained in the 2022 budget request, sir, is a total of $723 million. And that is broken out between, I think it is five barracks projects that are military construction in scope, that is $262 million, and then we have a number of restoration and modernization projects, over $460 million of projects.

So, in the 4-year period 2019 through 2022, that is a total investment of $2.8 billion.

Now, we know we need more. So the Chief of Staff of the Army is required to submit an unfunded list, and he chose to include 13 additional barracks, valued at over half a billion dollars, in his unfunded request along with the 2022 budget, sir.

Dr. GREEN. Anything specific to the 1st Brigade of the 10lst?

Mr. SURASH. Congressman, on that, I do not know the details. But I will look into that and get back to you, sir.

Dr. GREEN. Yeah. Please.

You know, one of the things—and, you know, we do our best to be bipartisan on this committee, but, you know, I am looking at the spending elsewhere in this administration, a 16 percent increase in non-DOD spending. My colleagues on the other side of the aisle and in the other side of the building are talking about now another $3.4 trillion on, you know, infrastructure stuff and climate stuff.

It doesn't seem like there are any barriers to spending money. And yet, overall, we've got a $4 billion real-dollar decrease in the Defense Department and we have soldiers living in barracks that are, you know, mildewed.

And I want some assurances that this is going to be a priority in this administration over the next several years. Somebody, please tell me that this is going to be addressed.

I mean, $460 million in projects and I think you said a couple billion over a few years is a drop in the bucket for the need. And in light of all of the other money that is being spent by this administration, I would like to see these soldiers taken care of.

Mr. SURASH. Congressman, I can speak on behalf of the Army. We are very focused on this. We would plan to invest approximately $10 billion over the next 10 years.

And we are also at the initial stages of looking at, are there any policy changes that we can make that would maybe reduce that requirement, that would involve possibly some soldiers being able to live off-installation? Our installations are very different. You know, that might work in some installations. I don't believe it——

Dr. GREEN. Sure. And unit missions will probably drive that, too. I get that. I like that out-of-the-box thinking.

I just—I need you guys clamoring to your boss, saying, "We got to take care of these guys." If we are going to spend 16 percent increase elsewhere, let's at least take care of these warriors who are going to fight to defend us. And that is really on your shoulders, to go to your boss and make those demands.

Mr. Chairman, I yield. Thank you.

Mr. GARAMENDI. Thank you very much, Mr. Green.

The recapture of the MILCON money that was sent to the border for border walls, that money is back in the Department of Defense now, at least a good portion of it. The question of how it is going to be used in the Department of Defense I don't believe has been answered in the current budget. We are going to look at that in de-

tail, since a lot of that or most of that money was MILCON money. It may very well be that this——

Dr. GREEN. That would be good.

Mr. GARAMENDI [continuing]. Issue of housing on base could be a use of that money. We will see. We are looking at it in detail. Mr. Green, you are interested. We will follow through——

Dr. GREEN. Thank you.

Mr. GARAMENDI [continuing]. And see where it may be going. It seems to me, if MILCON is MILCON and housing is MILCON and barracks are MILCON, maybe. Okay? We will work on that.

Dr. GREEN. Thank you, Mr. Chairman.

Mr. GARAMENDI. Ah, let's see. Kai Kahele, you are on.

Mr. KAHELE. Aloha, Mr. Chairman. Thank you so much, and for our testifiers today.

I am going to jump over to Hawaii's Second Congressional District and touch on UXOs [unexploded ordnance] and FUDS, formerly used defense sites. In particular, one, the Waikoloa Maneuver Area, covers approximately 220,000 acres on the northwest side of the island of Hawaii. This was an area used for extensive training and artillery practice during World War II.

A portion of these lands fall under the Military Munitions Response Program. And, although munitions continue to be discovered and cleared today, while those numbers fluctuate, about 29,000 acres have still not been cleared to date—or have been cleared to date. Excuse me.

The process from initial review to an actual cleanup award takes a very long time. There is additional frustration when a surface cleanup results in significant findings of UXO to warrant a subsurface cleanup, at least in areas where development or projects are planned. Extreme weather, including heavy rains and flooding, allows more UXOs to easily rise to the surface. After a surface sweep, however, surface and subsurface cleanups are currently conducted as a separate process. This makes little sense when UXO teams are already on site and can easily initiate a subsurface cleanup concurrently.

So my question is for Mr. Surash and the Army.

Can you shed some light on why surface and subsurface cleanups of UXOs are not allowed to be undertaken concurrently? And would it make sense to allow concurrent surface and subsurface cleanups as a time-critical removal action, especially if it is in the interest of public safety and if the lands are being used for redevelopment for a future project?

Mr. GARAMENDI. Did we lose the Department of Defense here? They have gone blank on my screen.

Mr. KAHELE. Yep. I don't have them, Chair.

Mr. GARAMENDI. Okay. I am going to get the gavel order. We are going to stop your clock at 3 minutes.

Mr. KAHELE. Okay.

Mr. GARAMENDI. And we will see if we can get the Department of Defense back on.

The gavel order going forward—hang on a second—will be Blake Moore, Strickland, and Luria. Wait a minute. I got this wrong. Moore, Luria, Speier.

And that is corrected too. I am getting corrections one after the other. So hang on, folks. We will get it right.

Okay. It is Blake Moore, Strickland, Luria, and Speier. Okay? Apparently, that is when all of you got on the screen.

Normally this problem is a problem that is unique to me, and that is, I depend upon AT&T fixed wireless. If you have any other option, take it. And I will continue to badmouth AT&T fixed wireless until something is done about it, bringing us back to the infrastructure bill and rural broadband.

Are you guys listening to my plea?

Apparently not.

Okay. We are going to stand by for a few moments. Grab your coffee or—Elaine doesn't have any questions? What is that about? Come on, Elaine.

Okay. All right. We will see what is going on here.

Dr. GREEN. I have to say, I can't believe Elaine isn't—no comments, Elaine? I actually sit with anticipation to hear you grill the Navy people. I love it.

Mrs. LURIA. I had an opportunity to speak to them at length this morning before the hearing, so I will cede that time to others. I got my questions answered.

Dr. GREEN. Cheers.

Mr. GARAMENDI. Oh, come on, share with us, Elaine. You don't get these private audiences without sharing the enthusiasm that Mr. Green has for your questions.

I don't know if you are still recording all of this or not, but they can mute the recordings, and we will have a good discussion here.

The Department of Defense has left the meeting. Yes, that is true. But my guess is they may be coming back on.

Kai, I think you were talking about unexploded ordnances?

Mr. KAHELE. Yes, sir.

Mr. GARAMENDI. My personal experience with this goes back to the 1990s, when we were trying to clean up another place in Hawaii——

Mr. KAHELE. Yep.

Mr. GARAMENDI [continuing]. And also at—let's see—and the Monterey Bay and a few other places. I was at the Department of Interior. And most of that land reverted back to the Department, and the military left the Department with a big burden. Fortunately, there was a good law that came along and said, no, no, you guys get to continue to be responsible.

So we will see what happens here, Kai.

Mr. KAHELE. Okay. No worries.

Mr. GARAMENDI. We shall see.

Dr. GREEN. We should take this moment—Chairman, we should take this moment to let you know that the Army, Navy, Air Force, Marine Congressmen have all got a bet, and we all have to wear the winner of the Commander-in-Chief's Trophy's tie or scarf or brooch at the State of the Union this year.

Mr. GARAMENDI. When do we find out what the attire is?

Ms. MILLER. Congressman, are you able to hear us through the microphone?

Mr. GARAMENDI. Yeah, we got you back. We are just kind of talking about things that are important, like the Commander's Trophy.

Kai, you are on. Do you want to finish up on your munitions issue?

Mr. KAHELE. Yeah, you bet. So my question—I don't know where I cut off——

Ms. MILLER. Wait. We have no audio. I don't know if you can hear us. We have no audio here, but we can see your video. So they are still trying to connect us.

Mr. GARAMENDI. Well, then, please stand by. We do have your video. We've got your video. You don't have our audio. We've got video and audio from the Department.

Okay.

Ms. MILLER. Ah, there we go. We can hear you, sir.

Mr. CRAMER. Can you hear us?

Mr. GARAMENDI. Very good then.

We were talking—Kai Kahele had the floor, and he was talking about unexploded ordnances on the island of Hawaii.

Kai, would you like to go forward? You've got 3 full minutes.

Mr. KAHELE. Okay. Great. Yeah, I don't know where I left off, but my question was for the Army and Mr. Surash. And I was asking a question about shedding light on why surface and subsurface cleanup of UXOs are not allowed to be undertaken concurrently, and would it make more sense to allow those surface and subsurface cleanups to be concurrently as time-critical removal actions, especially in the interest of public safety and if the lands are being utilized for redevelopment.

Mr. SURASH. Congressman, can you hear me okay?

Mr. KAHELE. Yes, sir.

Mr. SURASH. Yes, sir. I totally agree with your statement. And I was able to check on this, and, sir, it is my understanding that, starting about 2 years ago, we actually moved to a process that allows concurrent surface and subsurface cleanup, you know, at the Waikoloa, you know, site that you mentioned.

So I just want to assure you that we are prioritizing the work with respect to the priorities of the landowners and the planned redevelopment plans to our very best, sir.

Mr. KAHELE. Okay. Great.

Let me jump over to the Air Force.

Ms. Miller, for Bellows Air Force Base over in Waimanalo, there's been—the Waimanalo Bay Recreation Area is there. A big issue in the community is UXO fencing that have gone up. You know, fencing is cheaper than the cleanup, but this, you know, cuts off the community from traditional fishing grounds and things of that nature.

And so I don't know how much you know about this. I don't expect you to know too much about it. But I would love to get your commitment to work together with myself and the community members on finding a path for UXO cleanup at Bellows Air Force Station and, you know, maybe get some updates from you on the issue.

Ms. MILLER. Yes, Congressman. I was actually out there on Fourth of July and saw the beautiful area. I spent my family vacation out there on Bellows and know exactly the area you are talking about.

So I asked my team to look into this a little bit. I know we just, I think 2 months ago, had the Restoration Advisory Board that—we have looked at four COAs [courses of action]. And the initial COA that we proposed was to fence it off because of the cost associated with that. I understand the community's concerns, and I know we have received public input and are now taking comments, working with the State.

So we will continue to do that. That is only a couple months old, understanding that the Air Force's chosen COA doesn't really support the needs of the community. So tracking that, and we will continue to work that. And I will follow up with your office as soon as we have an update on whether or not we can pursue another COA.

Mr. KAHELE. Okay. Great. I have 22 seconds left, so let me jump to the Navy.

Mr. Schafer, UXO is starting to be discovered off the waters of Lanai. I know there was unexploded ordnance off of Molokini. Do you have any status updates on this UXOs risk assessment on the island of Lanai and also working together with myself and the local community on it?

Mr. SCHAFER. Sir, I do not. I will have to take that for the record and get back to you.

[The information referred to was not available at the time of printing.]

Mr. KAHELE. Okay. All right. And thank you so much.

And thank you, Chair. Sorry about the technical difficulties.

Mr. GARAMENDI. Yeah, we are not blaming you on it. It is not your problem, Kai.

Mr. KAHELE. All right.

Mr. CRAMER. It was ours.

Mr. GARAMENDI. There you go.

The order going forward: Moore, Strickland, Speier. Luria has left.

So Blake Moore.

Mr. MOORE. It's not my fault either. But if it's going to somebody's, it's gonna be Kai's. So, we'll go with that.

Mr. GARAMENDI. It's always the chairman's fault.

Mr. MOORE. Yeah. Thank you, everyone. Thank you, Chairman. Thank you for being here.

I was pleased to see the robust increase in the fiscal year 2022 MILCON budget. However, significant backlog of MILCON requirements means that many projects may never receive funding due to competing needs. It is a reality that I think all of us on this hearing can recognize and we will all face it.

I have seen firsthand the impact of deferred funding in facility and infrastructure investments at Hill Air Force Base in my district of Utah 1. Hill currently has a grouping of 66 buildings, known as the 1200-series buildings, that aren't fit to house the 4,000 DOD personnel found working in them. They were constructed over 80 years ago, initially built as ammunition warehouse space during World War II. Over the years, these buildings have been modified to house administrative functions and are in complete disrepair.

These buildings not only lead to poor working conditions but have contributed to recruiting challenges for programs at Hill, like GBSD [Ground Based Strategic Deterrent] and other really high-profile, awesome projects that Hill gets to work on, but this has been a thorn in their side. This is something that was brought up to me during the campaign, even. I was aware of this well before I even was in this role.

This 1200 series is a significant issue. The DOD urgently needs to find a way to replace these facilities. A recent economic analysis indicated a potential savings of $400 million over 20 years if these facilities were demolished and replaced. The replacement of these facilities through MILCON would cost nearly $750 but realistically cannot compete with limited MILCON funding.

That is where I bring in the reality and where I am sincerely hoping—and I will continue to push on this particular topic of, there are solutions, and they are based in our local economies and our local stakeholders wanting to engage.

I am proposing a provision in this year's NDAA that would expand the definition of "installation support services" in title 10, section 2679, that allows local government to construct, manage, and operate a facility on or near a military installation for a period of up to 10 years.

Unfortunately, we have run into a scoring implication that has stymied this simple solution. This scoring issue is in the Congressional Budget Office. It considers such lease agreements—I won't get into the details of it, but it is a scoring implication, when there is broader embrace from the local governments to help out in this regard.

So my question for Ms. Miller is, can you commit to examining innovative financing options and working with OMB [U.S. Office of Management and Budget] to facilitate local communities' desire to assist bases with their infrastructure and military construction needs?

Ms. MILLER. Congressman, yes, I would love to help tackle some of the scoring issues and have argued, where it makes financial sense, understanding that we will continue to be scored to the extent that we have a long-term responsibility for the project funding.

I know we have implemented some creative solutions at Hill, and, in fact, the building—I worked on the Hill EUL [enhanced use lease] that has been really successful out there, a huge EUL. We continue to take—I think we are on site development lease nine now, and working with MIDA [Military Installation Development Authority], which you guys have been probably the leader, of any of the States, in that organization and the support that you have been able to provide.

I think some other creative financing, besides the enhanced use lease and continuing to use the revenue for that for demolition, are things like intergovernmental support agreements [IGSA], potentially extending the duration of those beyond the existing 10-year statutory authority to allow us to enter into sole-source, non-FAR [Federal Acquisition Regulation] service contracts with the local State and community.

But our MILCON budget is tight. You know, we spend a third on COCOM [combatant command] requirements, a third on new-

mission MILCON, and then we have less than 20 percent left for the entirety of all of our existing infrastructure. Hill is getting one project, though, as part of the B–21 in our fiscal year 2022, so that is good news. But, yes, we will commit to continuing to work to tackle some of the scoring issues.

Mr. MOORE. And if my opening wasn't convincing enough, like, I am willing to dig into the details—our team, full disposal of our military legislative aide. We are all in on this. The community is amazing in Utah, and we want to embrace as much as possible. So I will just reiterate that here. And then, as we continue to work together, we would love to find solutions. There is a lot of options there.

And, again, I recognize the reality, so I am never—I am not one to come out and ask—you know, just recognizing those realities and trying to find solutions.

The other question that I have—you already started talking about it—was just, what other types of, you know, options might there be, doing things at a cheaper cost and accelerated timeline?

I will pause there if you don't have anything else in response to that. I think my clock actually started a little bit late, and so I will gladly yield back some of my time. But if there are any other suggestions or financing options, I am open to hear it right now.

Ms. MILLER. Sir, from the Air Force perspective, no, I think it is leveraging—so the MIDA unique opportunity with the tax increment financing that they were able to do and may be able to do up at Park City, Deer Valley, that is State-specific legislation, which we very much appreciated.

From a Federal standpoint, other than extending the IGSA authority, the scoring would be great to get after, but I don't know that that can be addressed by statute, maybe by persuasion. So, happy to partner with you on that. But I have no other creative solutions, sir.

Mr. CRAMER. You've got scoring on both ends, CBO and OMB Circular A–11. So a lot of folks have worked that, and we will continue to also work it from the Department.

Mr. MOORE. Yes. And I appreciate your mention of EUL. It is a value proposition. It is a solid option that others could adopt as well.

So, if anybody ever wants to learn—she already mentioned Deer Valley. So anybody on the committee is welcome to come to Deer Valley. I will gladly accept a CODEL to my district and would be a gracious host.

So thank you for those comments.

Chairman, I will yield back.

Mr. GARAMENDI. Thank you, Mr. Moore.

You raised the scoring issue. This is a problem in most everything we do. And, frankly, the scoring, as you have described your particular problem, is found in everything in the government. And we really need to address it. It seems to me very foolish and very unwise, prohibiting us to take advantage of many of the private partnerships that are out there, some of which you mentioned.

And so I will look forward to working with you on that, and I suspect there are others on this who find the same. And, I don't

know, maybe one or two of the folks at the table have an answer on how we can get past that scoring problem.

Okay. Let's see. We now have Ms. Strickland, followed by Ms. Speier.

Ms. STRICKLAND. Thank you, Mr. Chair. And thank you to our witnesses today.

I will have three lines of questioning: first around housing, the second one about the unique role of Joint Base Lewis-McChord that I represent, and then earthquake resiliency.

So I have the privilege of representing Joint Base Lewis-McChord, or JBLM, as we call it, and its 40,000 service members call it home. JBLM is the Army's only power [inaudible] Department continues to focus on the Indo-Pacific. Our Air Force personnel perform strategic vital airlift missions and are the only wing tasked with prime nuclear airlift mission.

One of the issues I hear about consistently, both on post and off post, is housing. We have a housing supply crisis here in the greater metropolitan region. And the South Sound that I represent is about 30 miles south of Seattle. Between 2010 and 2019, for example, over 180,000 households moved into my district, compared to 54,000 the decade prior. So housing affordability is a major issue, both on and off post.

And currently, on post, there are 776 households on a waiting list at JBLM, while 70 percent of those who serve live off post. And so it is my understanding that even if all the houses on JBLM were fully renovated, there would still be a significant waiting list. So housing access is a huge readiness issue. It affects families, and we know it has to be addressed.

So, Mr. Surash, what can the Department do to address the housing shortage on JBLM, given the high demand for it? And what do you think we in Congress can do to help alleviate some of those issues?

Mr. SURASH. Congresswoman, thank you very much for that question.

So I am aware of plans by the privatized, you know, housing provider there, which I believe is Lincoln at the moment.

Ms. STRICKLAND. Yep.

Mr. SURASH. So there is a plan to renovate about—over the next 5 years, between now and 2025, to renovate just under 600 homes, you know, major renovations, and another 500 with minor renovations.

I will get back to you to see if there are any other plans involving adding new homes, you know, from this point on. There have been homes, I believe, added, you know, since the deal was put in place. But I will get back to you on any plans to add additional housing going forward.

[The information referred to can be found in the Appendix on page 115.]

Ms. STRICKLAND. Great. Thank you for that. And please include metrics about how you measure what is an acceptable time for a family to find housing.

I will move on to the next question, and this is for Ms. Miller.

Our testing and research and development facilities do significant work, but, unfortunately, they are underresourced and under-

funded. Can you tell me how the Air Force can maintain our innovative edge when we chronically underfund testing, research, and development facilities, including the Precision Measurement Equipment Labs?

Ms. MILLER. Yes, ma'am. So I visited JBLM and met with the wing commander and toured, I think, the exact facility that you are talking about.

So, as a joint base, we work prioritization of the military construction on that base through the Army and identify the prioritization of that through the Army. But I am not trying to throw the ball at the Army here, because we are all facing the same challenges with the prioritization being on modernization, new-mission MILCON, and the combatant command support.

So I can't speak to where within the Army prioritization that particular facility is, but we are tracking in the Air Force the importance of it. Even where we have a joint base, I think we are effectively implementing our joint base agreements and effectively communicating with the local commander.

When we had the big—I don't even—culvert, the gigantic culvert, up on the airfield there, we really appreciated the Army's support in getting after and prioritizing the improvement of that facility. I think that is a good example of the joint base working like it should with the Army prioritizing a key Air Force issue.

Ms. STRICKLAND. And I have a very brief question that you can answer offline with my staff. But, in March, General Gabram said that 60 percent of the buildings at JBLM are not up to code for earthquake, which is a big concern.

So I will take that answer offline with my staff, but thank you very much for being here today.

And I will yield my time.

Mr. GARAMENDI. Ms. Strickland, earlier in this hearing, we spoke extensively about risks at every base. And every base has a different set of risks, and you certainly have your share of them there. If I recall, back in the day, there was talk about, what if your little mountain to the east were to have a serious mudslide? What would that mean to your community and to the base? The answer is not good.

So there are many, many different risks. Please continue to pursue these issues.

Now we go to Ms. Speier. And then we will start a second round. So, if you wanted to have a second round, please let the staff know.

Jackie, your turn.

Ms. SPEIER. Thank you. Can you—for some reason, my video has gone. Can you hear me?

Mr. GARAMENDI. Yes, we can.

Ms. SPEIER. All right. Thank you, Mr. Chairman. Thank you all for being here.

I must say that there is great frustration by members on both the Republican and Democratic side in this hearing about the inability, for whatever reasons, for the military to beef up barracks, housing, and childcare.

Mr. Surash, let me start with you. The Army announced with a great deal of fanfare its $10 billion, 10-year plan to bring all the barracks up to a good condition. But in the budget for this year,

you are only requesting $260 million. So, you know, there is a lot of talk, but the walk isn't there.

So, at $260 million a year, you are never going to meet that 10-year, $10 billion. And, meanwhile, many of these barracks are really unacceptable. When we were at Fort Hood, a number of my colleagues on the CODEL who have served in the military said they had never been in barracks that were as bad as some of those.

So why didn't you request more funds for barracks?

Mr. SURASH. Congresswoman, thank you for that question.

So, between 2019 and 2021, ma'am, we invested $2.1 billion in barracks for both military construction as well as restoration and modernization. You are totally accurate on the military construction request in 2022 for $262 [million], but there is another $461 [million] in restoration and modernization projects for barracks. So that will give us a total of about $720 million in 2022. And then, if we were to add up 2019 through 2022, that is $2.8 billion.

We know we need more, and the Chief of Staff of the Army chose to include 13 barracks projects on his unfunded requirements list. That totals a little bit over a half a billion dollars. And I believe there were 2—2 of those 13 projects on the unfunded list were specifically at Hood, ma'am.

Ms. SPEIER. So are you still committed to $10 billion over 10 years?

Mr. SURASH. We do have that plan, and we will do our best to properly resource it. We are also taking a look at other things we can do to possibly reduce the overall requirement. But we are——

Ms. SPEIER. All right.

Mr. SURASH [continuing]. On that plan.

Ms. SPEIER. I think what you are hearing from all of us, though, is: We want action. The talk is just talk.

Let me move to Ms. Miller and the Air Force.

You have identified more than 70 childcare development centers in poor or failing condition, yet the Air Force only requested funds for one child development center in fiscal year 2022.

Why is this not more of a priority? We have 9,000 families that have their children on waiting lists throughout the military. And if you can identify poor and failing facilities but then only fund one, we've got a problem. So why is there not a higher priority for this?

Ms. MILLER. Yes, ma'am. So we do have in the Air Force 222 child development centers [CDCs] and school-age centers. Of those, only one on the Building Condition Index was poor or red, and that one has a $3.6 million renovation pending. For the other ones, we have amber, which is still acceptable, it could use improvement, for 144, and then 74 that are green.

So, of those, I acknowledge that we have not historically funded CDCs at the level that we ought to. So we stood up a working group in 2020 and had the master plan, much like the Army, and then provided a memo where we were looking what is the prioritized list and what are those projects.

You are correct that we only have one MILCON project for a CDC on our primary fiscal year 2022 budget, but that we have five total that are ready for fiscal year 2022 execution, with four of those on our unfunded priority list.

So, as mentioned, we have very few—you know, less than 20 percent of our MILCON funds go to existing projects, but, of those, we are prioritizing the very next items that weren't funded as hopefully getting funded with those CDCs.

And then we are also addressing this with——

Ms. SPEIER. Ms. Miller, excuse me a moment. What is your waiting list in the Air Force right now?

Ms. MILLER. We have 5,100 families—5,116 kids that had unmet childcare needs.

Ms. SPEIER. All right. And what is the wait time?

Ms. MILLER. The average wait time was a 151-day wait.

Ms. SPEIER. Okay. We have heard horror stories of over a year. But with 5,100 unmet, you can see that we have got to make this a higher priority.

Answer for me, what is meant by a poor- or failing-condition childcare center?

Ms. MILLER. So we do a Building Condition Index, ma'am, that assesses the physical infrastructure requirements. So anytime there is a life, health, or safety issue, those are identified immediately; none of those go unresolved. This is where we anticipate that, without investment—and so a red is a facility that requires significant investment over the next couple of years or it is going to result in a failed facility. So these aren't failed facilities. These are poor, requiring investment.

So that one facility, as mentioned, has the major renovation planning, with the funding lined up for that. The other ones that are yellow, though, those do deserve our attention. Right now, we have 144 of those, so that is where——

Ms. SPEIER. All right.

Ms. MILLER [continuing]. We are working with the prioritization to put——

Ms. SPEIER. Excuse me, Ms. Miller. I would like for you to provide the committee and me personally with a list of all of those that are red or yellow——

Ms. MILLER. Yes, ma'am.

Ms. SPEIER [continuing]. And at what bases they are located and, also, the definition for "poor" or "failing" and what comes under that, if you would. All right?

Ms. MILLER. Yes, ma'am.

Ms. SPEIER. Thank you.

Mr. Chairman, I don't know how much time I have left, since I can't see the screen. I have one more question on PFAS, if that is possible.

Mr. GARAMENDI. Well, Ms. Speier, as chairman of the Personnel Committee, why don't you go ahead and take some of your own time here. You are actually 32 seconds over, but we are going to cut you a wide swath.

Ms. SPEIER. All right. Thank you. I will just ask one question.

My understanding is that NATO [North Atlantic Treaty Organization] and some of our civilian European airports are phasing out fluorinated firefighting foam. Why hasn't the Department taken steps to replace AFFF [aqueous film forming foam] with non-fluorinated formulations?

I guess this would be for the Department.

Mr. CRAMER. So, Congresswoman, this is Paul Cramer, in case you can't see me.

So we are making—we have made some significant strides in finding a replacement for the fluorinated AFFF, and so we are cautiously optimistic we will meet the timeline. In fact, we have done some very robust testing on alternatives that will be a drop-in replacement using the existing apparatus, and that helps us meet the 2024 timeline.

With respect to the question about NATO and Europe, the formation they use to replace AFFF in their apparatus caused them to replace the whole apparatus. The viscosity of the agent was much different than they had to do before. So it added significant cost, where we have taken the approach where we are going to control the use of AFFF, capture that so it no longer gets into the groundwater, and then find an alternative that will [inaudible] drop into the existing apparatus and then save taxpayers a lot of dollars.

And so we have at least four or five formations that are fluorine-free that will drop into existing apparatus, and those have now moved from the testing to put out the fire. They have all not met our current MILDEP [Military Department] standards, but they have achieved an acceptable standard to put out a fuel-based fire that our Fire Advisory Board is somewhat comfortable with that.

So we have now moved into the stage where we are testing those new formations for ECOTOX [environmental toxicity]. In essence, you know, we want to make sure that our replacement chemical isn't any more toxic than the current one we use. In fact, what we don't want to do is create another environmental hazard, you know, decades down the road, so we want to have one that is actually better than the formation we are using today. And that is the stage we are at now, is to go through that testing.

So we are cautiously optimistic that we will have a formation, fluorine-free, drop-in replacement into the existing apparatus, by the timeline that we have been asked to meet.

Over.

Ms. SPEIER. Thank you.

Mr. GARAMENDI. Jackie, thank you for the question. A very good one, and a good answer for all of us.

I believe it is now my turn for a second round. I am going to go very quickly here.

In the testimony that all of you have provided, you have talked about the resiliency and various steps that you are taking to understand the threats that exist in your area. In response to Mr. Wilson and his request for maps of the sea-level rise and flooding in South Carolina, similar information is available on various bases.

What I would like to offer to the committee and ask of the witnesses here is a briefing sometime during the month of September in which those maps and information would be available to the committee members, the subcommittee as well as the full committee, so that we might all become aware of the threat that you need to meet in your resiliency requirements.

So if you would take a look at that at the Department, think about how you might best inform us of these threats that exist out there. Ms. Strickland is interested in earthquakes, and I think the rest of us have our own backyard to care for.

We will do that. I offer that to the committee. We will make that available, with perhaps a week or two heads-up so that you can be there. And we will do that informally as a briefing.

And nice of my staff to know about this ahead of time so that they now have 2½ months to get it done and for the Department to prepare the maps and prepare the briefings for us.

So we want to go over resiliency, and thank you——

Mr. CRAMER. Mr. Chairman, if you don't mind, along that line, so DCAT is a web-based system, so we can actually go through the DCAT model for each one of the installations, and the members—as opposed to printing maps, we could actually do, you know, an interactive discussion with them using the DCAT model. And we will take that on and schedule it accordingly.

Mr. GARAMENDI. Well, bring your big screen.

Mr. CRAMER. Yes.

Mr. GARAMENDI. I would like to do this for all of us, so that all of us become aware of the extent of the problem. And then I am quite certain that Mr. [Moore] and others, Kahele and others, want to drill down and talk about meter by meter or inch by inch, as they should.

So let's put that together. Let's look at September to put that together.

Mr. CRAMER. Will do.

Mr. GARAMENDI. Okay. I am going to let my questions go at that point. We will go back through this.

Mr. Wilson, you would be next.

Mr. WILSON. Thank you, Mr. Chairman. And, indeed, I look forward to the hearings in September or whenever, because I just have such an interest in working for the benefit of all. So, hey, thank you, Mr. Chairman, for having this, and just keep us informed.

Thank you. I yield back.

Mr. GARAMENDI. Thank you.

I think the next would be Mr. Kahele—Mr. Green—excuse me. Mr. Kahele and then Mr. Green.

Unmute, Kai.

Mr. KAHELE. Oh, sorry, sir. I am here. Okay.

My next question is directed to OSD, and it has to do—you mentioned climate change and sea-level rise. And my question is specific to the Runit Dome, the lagoon in the center of the atoll in the Republic of the Marshall Islands [RMI].

As you all know, this is an area where we did extensive nuclear testing back in the 1950s and 1960s. There is U.S. nuclear bomb waste that is there. The threat of sea-level rise due to climate change poses a very real threat to the entire country and the surrounding region.

The potential of leakage of nuclear bomb waste due to seepage through the sand base under the dome has generated concern from the highest levels. President Biden recognized this extraordinary threat of climate change to the RMI in a March 25th letter to President Kabua, in which he stated that the RMI is especially vulnerable to climate impacts among the world's nations.

So I will jump to my question. Is the Pentagon and Secretary Austin similarly committed to addressing the threat of climate change at former U.S. nuclear testing sites?

And can you also comment on the DOD's commitment to supporting our Freely Associated States, those allies in the Pacific, including the Republic of the Marshall Islands?

Mr. CRAMER. So, Congressman, I am not familiar with the specific topic, but I will gladly take it back.

But to answer your question, is the Secretary of Defense committed to climate change, the answer is yes. And he is also committed to the President of the United States. So we will honor those commitments within the existing laws and agreements within the Marshall Islands.

I have been there myself, and it is a pristine area. So I will have my staff look into this and get on your schedule and come and meet with you and give you a proper response.

Mr. KAHELE. Okay. Great.

Well, then I will use the balance of my time just to educate on the subject.

So the United States detonated 67 bombs, nuclear bombs, over 12 years, with a force equal in radiation to 1.6 of the Hiroshima bombs that were detonated in Hiroshima. The dome, the Runit Dome, which was built in the 1970s, contains more than 3.1 million cubic feet of radioactively contaminated soil and debris that were dumped into a nuclear bomb test crater on the north end of Runit Island, and this is covered by a concrete dome.

And part of the threat is that, with rising sea levels, there could potentially be leakage from under the dome, which threatens the population area and the Pacific, of course, affecting fish stocks and coral reefs.

It is my understanding in previous NDAAs required the Department of Energy to conduct a study, but that report, delivered by the Trump administration in June 2020, did not adequately respond to Congress' concerns. The report concluded that the contents within the dome are not expected to have an adverse impact on the environment in the coming years.

And so, if you would, sir, take a look at this particular issue out in the Republic of the Marshall Islands. It is very important.

The compact agreement that we have with the Republic of the Marshall Islands expires in 2023. Those negotiations are happening now. But, you know, Kwajalein, you know, the importance of the Marshall Islands in the Pacific Deterrence Initiative, you know, those agreements that we have and the compact agreements we have with the Marshallese community is going to be really important. You know, China is in the area. We know that. And we want to make sure that we maintain our competitive edge, especially as it relates to our missile defense testing and those types of systems we have out at Kwaj.

And this Runit Dome is something that, when you get a chance, please take a look at it. I would love to work together with you on it, and appreciate your attention to it.

Mr. CRAMER. Will do.

Mr. KAHELE. Thank you, sir.

And I will yield back 18 seconds of my time.

Mr. GARAMENDI. We will put that in your list of opportunities for the future, Kai. Thank you for bringing the Pacific, all the Pacific, to our attention.

Mr. KAHELE. Okay.

Mr. GARAMENDI. We now turn to Mr. Green and the 101st Division.

Mr. Green, are you still with us? Mr. Green.

We will now turn to Mr. Blake—Blake Moore. You are up.

Mr. MOORE. No, thank you. I am doing another markup at the moment anyway, so thank you.

Mr. GARAMENDI. I am not quite sure I understood that.

Blake Moore, if you want to come on, I think Mr. Green is busy with another piece of work.

Blake, do you want to come on?

Mr. MOORE. Sorry. Could you repeat that, Chairman?

Mr. GARAMENDI. It is your turn, Blake Moore.

Mr. MOORE. Yeah, I will forgo any more questioning. Thank you. I am in the middle of another markup meeting at the time.

Thank you all for being here.

Mr. GARAMENDI. Okay. Very good. Thank you for your participation.

I believe we have run through all the members. Is that the case?

I think we have gone through all of this. I want to end this with a big thank you to the four witnesses, not only for what you have done today in informing us but really for your careers. All of you are career civil servants. Through the years, you have gathered incredible knowledge, not only about your current job but about a variety of tasks that you have undertaken.

And you have served this Nation very well, and I know you will continue to do that. As the political appointees are eventually put in place, you will provide them with the knowledge and information and the history that you carry with you.

And so, for all of you, thank you. I look forward to working with you in the days ahead. We have some significant challenges, many of which we have talked about today but many more that are on the agenda but not yet discussed.

So, with that, I will call this hearing to adjourn, and thank you all.

[Whereupon, at 5:47 p.m., the subcommittee was adjourned.]

A P P E N D I X

JULY 14, 2021

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

JULY 14, 2021

Statement of the Honorable John Garamendi
Chairman, Readiness Subcommittee
"Fiscal Year 2022 Budget Request for Military Construction, Energy, and Environmental Programs"

July 14, 2021

First, some administrative and technical notes. Members are reminded that they must be visible onscreen within the software platform for the purposes of identity verification. Members must continue to use the software platform's video function while attending the hearing unless they experience connectivity issues or other technical problems that render the member unable to fully participate on camera. If you experience technical difficulties, please contact the committee staff for assistance.

When you are recognized, video will be broadcast via the television and internet feeds. You will be recognized as normal for questions, but if you want to speak at another time you must seek recognition verbally. Please mute your microphone when you are not speaking and remember to unmute prior to speaking. Please be aware that there is a slight lag between when you start speaking and when the camera shot switches to you. Please remember to keep the software platform's video function on for the entirety of the time you are attending this hearing. If you leave for a short period for reasons other than joining a different proceeding, please leave your video function on. If you are leaving to join a different proceeding or will be absent for a significant period of time, you should exit the software platform entirely and then rejoin if you return.

Be advised that I have designated a committee staff member to mute unrecognized members' microphones if necessary. Please use the platform's chat feature to communicate with staff regarding technical or logistical support issues. Finally, you will see a 5-minute countdown clock on the software platform's display but, if necessary, I will remind you when your time is up.

Good afternoon.

Ladies and gentlemen, I call to order this hearing of the Readiness Subcommittee of the House Armed Services Committee.

Today's witnesses oversee a wide range of programs that are of great interest to this committee including military construction, installation resiliency, housing, environmental programs, response to emerging contaminates, energy resiliency, and climate change.

Earlier this year we held a hearing focused on installation resiliency in which we questioned the uniformed leadership of the service's installations commands. Today, I will pose similar questions to the department's civilian leadership. What are you doing to ensure our installations are resilient to the specific hazards they face, be they increasingly frequent severe storms, drought,

wildfire, or flooding from sea-level rise? How are you incorporating climate change adaptation measures to ensure the long-term resilience of the nation's installations and to ensure taxpayers get the full benefit of their military construction investments? Are you incorporating new materials that are more resilient into your construction? Does your installation master planning incorporate microgrids, EV charging infrastructure, and the ability to island in the event of a natural or manmade grid disruption? Getting the answers to these questions right, is not just about addressing climate change, but about ensuring that our installations can continue to perform their critical missions without disruption.

In addition to resiliency, this subcommittee has put considerable focus in the past few years on privatized military family housing. I assure you that will continue until all service members have high quality places to live free from environmental hazards and chronic maintenance problems. However privatized housing is not the only place where our service members live. Most of our junior enlisted service members live in barracks and dormitories. Through chronic neglect, there building have been allowed to fall into disrepair and created substandard living spaces for service members. We know that these poor quality living condition contribute to poor retention.

The Army announced a $10 billion plan to overall substandard barracks by the end of fiscal year 2030, yet only one barracks appeared on the President's budget request for army military construction. In 2020, the Army announced that people were its top priority- but it seems the Army actually meant that people were their top unfunded priority. Lip service is not enough. With that said, at least the Army has publicly acknowledged the deficiencies in their barracks facilities. I have seen no similar statements from the other military departments yet I am know that similar rates of barracks and dormitories in poor and failing condition exist within the Navy and Air Force.

I also look forward to hearing about the witness' budget requests in support of their environmental programs. In particular, I am surprised to see that the President's budget request for environmental restoration funds, the monies used to conduct environmental clean-up, were down considerably from FY21 enacted amounts. With thousands of clean-up sites across the country, 698 of which are installations with known or suspected releases of AFFF and potential PFAS contamination in surrounding communities, I am surprised by the lack of emphasis on environmental programs. Moreover, with a 2024 AFFF phase-out looming, the Department must be increasing its efforts to address PFAS, not putting them on the back burner.

With that, I would like to turn to our Ranking Member, Congressman Doug Lamborn of Colorado, for any remarks he may have.

HOLD UNTIL RELEASED
BY THE COMMITTEE

Statement of
Mr. Paul Cramer
Performing the Duties of
Assistant Secretary of Defense
(Sustainment)

Before the House Committee on Armed Services
Subcommittee on Readiness
Fiscal Year 2022 Budget Request for
Military Construction, Energy, and Environment Programs

July 14, 2021

INTRODUCTION

Chairman Garamendi, Ranking Member Lamborn, and distinguished members of the Subcommittee: Thank you for the opportunity to discuss the Department of Defense's (DoD) posture as it relates to energy, installations, and environment in the President's Fiscal Year (FY) 2022 budget request.

Our installations remain one of our primary weapon systems. For nearly 80 years, we have been able to operate from our bases around the world with near-impunity, which has afforded us unprecedented power projection capabilities. However, the stark reality is that the homeland is no longer a sanctuary. Therefore, we must ensure that our installations are not only postured to support the Joint Force, but that they are resilient against the full range of man-made and natural threats. The FY2022 President's Budget Request supports our efforts to address these resilience challenges, while also addressing mission requirements and ensuring Service members have a safe and resilient place to live and work.

KEY AREAS OF CONCERN

Before I review the details of the budget request, I would like to provide updates on two key issues, specifically climate change and the Military Housing Privatization Initiative (MHPI).

Climate Change

In the words of Secretary Austin, the Department faces a "growing climate crisis that is impacting our missions, plans, and capabilities and must be met by ambitious, immediate action." Climate change will continue to amplify operational demands on the force, degrade installations and infrastructure, increase health risks to our service members, and require modifications to much of our existing and planned equipment. Extreme weather events are already costing the Department billions of dollars and those costs are likely to increase as climate change accelerates.

As the Department's Chief Sustainability Officer, ASD(Sustainment) oversaw the development of the DoD Climate Adaptation Plan (CAP), that was developed per Executive Order (EO) 14008, Tackling the Climate Crisis at Home and Abroad and will be finalized later this month. The CAP identifies five lines of effort: Climate-Informed Decision-Making; Train, Test, and Equip a Climate-Ready Force; Resilient Built and Natural Infrastructure; Supply Chain Resilience and Innovation; and Enhance Adaptation and Resilience Through Collaboration. The four cross-cutting enablers for these lines of effort are continuous monitoring and data analytics, innovation, climate literacy, and environmental justice.

To enhance the oversight and execution of these initiatives, the Department recently established the Deputy Assistant Secretary of the Defense for Environment and Energy Resilience with OASD(Sustainment). Given the alignment between mission and climate priorities and the energy-related nature of climate initiatives, this integrated team is ideally positioned to review, prioritize, and oversee the Department's holistic climate and energy portfolio. The FY2022 President's Budget request increases resources, staff, and expertise needed to achieve the goals of the Secretary of Defense and the President.

Military Housing Privatization Initiative (MHPI)

Under the overall direction of the Chief Housing Officer, the Department has made significant progress implementing actions to enhance the Military Housing Privatization Initiative (MHPI) program, consistent with our commitment to ensuring that MHPI projects provide safe, quality, well-maintained housing where our members and their families will want and choose to live.

The Department continues to prioritize MHPI reform actions that will improve the tenant experience, rebuild tenant trust, and maintain MHPI housing project financial viability. This includes implementing MHPI reforms enacted as part of the National Defense Authorization Acts for Fiscal Year (FY) 2020 and FY2021, including requirements for a Tenant Bill of Rights, a universal lease, a dispute resolution process, and other elements.

Our initial phase has predominantly focused on implementing the MHPI Tenant Bill of Rights and the NDAA requirements imbedded in those rights, as a visible commitment to military members and their families. Based on our efforts to date, the Department has issued all policy guidance necessary to implement all rights at all MHPI housing projects.

As Congress recognized in the FY2020 NDAA, retroactive application of the requirements at existing projects requires voluntary agreement by the respective MHPI company; the Department cannot unilaterally change the deal terms of the complex, public-private partnerships that established the MHPI projects. Nearly all of the MHPI companies have agreed to implement all eighteen tenant rights at their existing projects; however, the final right – standard documentation (focused on a universal lease framework) – is available at more than 30 installations with MHPI housing; with few exceptions, we expect all eighteen tenant rights to be fully available by the end of FY2021.

The Department issued housing policies to reinforce and expand the Department's programmatic oversight over MHPI housing projects, focusing on five key aspects that include: 1) senior leader engagement to collaborate internally and with MHPI companies on housing issues and necessary corrective actions; 2) rebuilding trust with military members and their families; 3) accountability at all levels within DoD and by MHPI companies to perform our oversight as originally intended at the outset of housing privatization; 4) transparency and more frequent communication with MHPI Tenants; and 5) ensuring the long-term financial viability of the MHPI projects and MHPI program. Further, the Department recently established a Deputy Assistant Secretary of Defense for Housing to enhance execution of the statutorily-defined Chief Housing Officer duties and responsibilities.

Our priority going forward is to implement the remaining MHPI reform provisions that improve safety, quality, and maintenance of the privatized housing, and to ensure accountability at all levels within DoD and the MHPI companies to perform our oversight as originally intended at the outset of housing privatization.

The Department of Defense understands that family is important and honors the sacrifice that military members and their families make to serve our nation. We recognize the environment where Service members (and their families) live impacts their quality of life, their ability to do their jobs, and the Department's ability to recruit and retain the force. We are committed to working closely with you and the committee staff to ensure the long-term success of the MHPI

program, and will continue to remain diligent in our oversight to ensure delivery of quality housing for military members and their families over the life of the projects.

MILITARY CONSTRUCTION AND FAMILY HOUSING

The President's FY2022 budget requests $9.8 billion for the Military Construction (MilCon) and Family Housing appropriation. This represents a $2.0 billion or 26% increase from the FY2021 budget request of $7.8 billion.

The request reflects the Department's priorities in supporting the Administration's Interim National Security Strategy to address critical mission requirements and life, health, and safety concerns within the current fiscal environment. In addition to new construction needed to recapitalize the nuclear enterprise, this funding will be used to restore and modernize enduring facilities to enhance their resilience to climate events and promotes elimination of excess or obsolete facilities. The FY2022 MilCon request includes projects that directly support operations, training, maintenance, production, and projects to take care of our people and their families, such as medical treatment facilities, unaccompanied personnel housing, and schools.

Military Construction

We are requesting $8.4 billion in the budget for Military Construction across the Department, an increase of 30% from last year's request, primarily due to infrastructure requirements for the beddown of the B-21 aircraft, investments in KC-46A depot maintenance facilities, recruit dormitories, F-35A facilities in the United Kingdom, continued Guam relocation efforts, investments in the Shipyard Infrastructure Optimization Program, and the inclusion of previously deferred Section 2808 projects (16 projects totaling $661 million). Slightly more than half of this request provides readiness improvements in facilities to support operations, training, maintenance and production, and supply. Another $1.1 billion funds medical facilities, troop housing, and community support, and $206 million funds DoD's continued support to the NATO Security Investment Program.

This request also includes $2 billion for the Defense-Wide Components, including

- $192 million for dependent educational facilities
- $110 million for fuel infrastructure;
- $238 million for recapitalization of National Security Agency facilities;
- $304 million to address new capabilities/mission, force structure growth, and infrastructure for Special Operations Forces;
- $51 million for Washington Headquarters Services facilities; and
- $247 million for the Energy Resilience and Conservation Investment Program.

In addition, the Defense-Wide request contains $508 million for medical facility recapitalization including $153 million for the fifth increment (of a $695 million project) for the Walter Reed Medical Center Addition/Alteration; $160 million for the fourth increment (of a $381 million) for a new hospital at Fort Leonard Wood, Missouri; $73 million for three veterinary treatment facilities; and $122 million for four smaller medical treatment facilities. These projects are critical for our continued delivery of the quality health care that our service members and their families deserve.

Facilities Sustainment and Recapitalization

Facilities sustainment represents the Department's largest category of facilities spending by providing for the regularly-scheduled maintenance and repair or replacement of facility components. These ongoing and predictable investments must be made throughout the service life of a facility to optimize its performance and support the safety, productivity, and quality of life of our personnel, while also reducing avoidable costs associated with premature deterioration.

The Department's FY2022 budget request includes $12.3 billion for the Military Services and the major Defense-wide organizations. This represents a sharp increase from the $11.3 billion in the FY2021 budget request but a slight decrease in the overall sustainment rate from 83 percent to 81 percent due to increased sustainment requirements resulting from a combination of higher sustainment costs, increased inventory, and the inclusion of costs for project design and standardized facility inspections.

In addition to facilities sustainment funding, the Department relies upon its Restoration and Modernization (R&M) program funding to provide ongoing support to assigned missions by countering obsolescence and reversing degraded conditions of existing facilities. The Department's FY2022 budget request includes $4.0 billion in Operations and Maintenance appropriations for facilities R&M, a slight decrease compared to our $4.3 billion FY2021 budget request.

Family and Unaccompanied Housing

One of the Department's principal priorities is to support military personnel and their families and improve their quality of life by ensuring access to suitable, affordable housing. Service members are engaged in the front lines of protecting our national security and they deserve the best possible living and working conditions. Sustaining the quality of life of our people is crucial to recruitment, retention, readiness and morale.

Our FY2022 budget request includes $1.4 billion to fund construction, operation, and maintenance of government-owned and leased family housing worldwide; provide housing referral services to assist military members in renting or buying private sector housing; and oversight of privatized family housing. The FY2022 request is $72 million (5.3%) higher than the FY2021 request, and $22 million (1.6%) higher than the FY2021 enacted amount to sustain our increased focus on ensuring the delivery and maintenance of quality housing for military families. The FY2022 request includes $293.2 million for construction and improvements to meet the Department's goal to maintain at least 90 percent of the world-wide Family Housing inventory at Good and Fair condition levels, to include $92.3 million for construction of 130 Army housing units at Vicenza, Italy. The O&M budget request of $1.12 billion represents a $38.4 million (3.5%) increase compared to the FY2021 request. This funding request supports more than 34,000 government-owned family housing units, most of which are on enduring bases in overseas locations, and approximately 5,800 government-leased family housing units where government-owned or privatized housing is unavailable. The requested funding will ensure that U.S. military personnel and their families continue to have suitable housing choices.

The Department's FY2022 budget request demonstrates our continued commitment to modernize Unaccompanied Personnel Housing (UPH) to improve privacy and provide greater amenities. The FY2022 budget request includes more than $477 million for eight construction projects that will improve living conditions for permanent party personnel. This includes $81 million for an Army barracks complex at Fort Meade, Maryland; $172 million for two Air Force dormitory projects at Joint Base San Antonio, Texas, and $43 million for a Navy barracks project in Joint Region Marianas, Guam.

ENVIRONMENTAL PROGRAMS

Installations are key platforms for our nation's defense. We must maintain our ability to conduct realistic training and flexible operations. The Department's environmental investments support this objective through activities ranging from managing critical habitat and avoiding training restrictions to addressing drinking water health advisories and making the best use of our cleanup dollars. The President's FY2022 Budget requests $3.6 billion for environmental programs, keeping pace with our FY2021 request.

Defense Environmental Restoration Programs

We are requesting $1.3 billion to continue cleanup efforts at the remaining Installation Restoration Program (IRP) sites and Military Munitions Response Program (MMRP) sites. The IRP is focused on cleanup of hazardous substances, pollutants, and contaminants, while the MMRP is focused on responding to unexploded ordnance and munition constituents at former military ranges. This includes $1.0 billion for "Environmental Restoration," which encompasses active installations and Formerly Used Defense Sites (FUDS – sites that DoD transferred to other Federal agencies, States, local governments, or private landowners before October 17, 1986). The remaining $264 million is for "BRAC Environmental."

Progress Towards Cleanup Goals

Goal: Achieve Response Complete at 90% and 95% of Active and BRAC IRP and MMRP sites, and FUDS IRP sites, by FY 2018 and FY2021, respectively			
	Status as of the end of FY2019	Status as of the end of FY2020	Projected status at the end of FY2021
Army	91%	91%	92%
Navy	83%	83%	84%
Air Force	88%	85%	86%
DLA	84%	84%	85%
FUDS	87%	88%	89%
Total	**88%**	**87%**	**88%**

By the end of FY2020, the Department, in cooperation with State agencies and the Environmental Protection Agency, completed cleanup activities at 87 percent of Active and BRAC IRP and MMRP sites, and FUDS IRP sites, and is now monitoring the results. During FY2020 alone, the Department completed cleanup at 312 sites. Of the roughly 40,000 restoration sites, more than 33,900 are now in monitoring status or have completed cleanup.

Our focus remains on continuous improvement in the restoration program: minimizing overhead, adopting new technologies to reduce cost and accelerate cleanup, refining and standardizing our

cost estimating, and improving our relationships with State regulators through increased dialogue. All of these initiatives help ensure that we make the best use of our available resources to complete cleanup.

Per- and polyfluoroalkyl substances (PFAS) are a top priority and may cause the DoD to reopen previously-made decisions, which could cause delays in achieving our goals. Additionally, some sites have no feasible solution for cleanup and, as a result, the Department is making significant investments in environmental technology to identify new potential remediation methods.

Per- and Polyfluoroalkyl Substances

The presence of per- and polyfluoroalkyl substances (PFAS) in the environment is a national issue due to its wide-spread use in many industrial and consumer products. The Department recognizes the importance of this issue and is committed to addressing PFAS in a deliberative, holistic, and transparent manner, as we continue to pursue a PFAS-free fire-fighting alternative and address our PFAS releases.

The PFAS Task Force

The Department established a PFAS Task Force in July 2019. This Task Force provides strategic leadership and direction to ensure a coordinated, aggressive, and holistic approach on DoD-wide efforts to address PFAS. The Task Force continues unchanged and is postured to be responsive to the direction of this Administration. The Task Force continues to focus on four main goals:

- Mitigating and eliminating the use of the current aqueous film forming foam (AFFF);
- Fulfilling our cleanup responsibilities, and
- Understanding the impacts of PFAS on human health
- Public outreach

AFFF Replacement Research

AFFF formulations in use by DoD today do not contain detectable amounts of PFOS or PFOA, but they still contain PFAS. We have an aggressive initiative to develop and demonstrate PFAS-free alternatives for AFFF. We have identified a number of commercially-available and developmental PFAS-free alternative formulations that have acceptable fire extinguishment performance against jet fuel fires. Evaluation of the aging, materials compatibility, and toxicity of these formulations is underway. The Department is committed to finding an effective firefighting alternative that meets the life-saving performance standards of AFFF and does not have negative health or environmental effects.

PFAS Cleanup and Drinking Water Mitigation

DoD follows the existing federal cleanup law (Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)) and the long-standing EPA regulations for all chemicals in our cleanup program, including PFAS. The Defense Environmental Restoration Program statute provides authorities to DoD to perform and fund cleanup actions and requires they be carried out in accordance with CERCLA.

As of March 31, 2021, the Department has identified 698 installations where DoD used or potentially released PFAS. DoD has completed the initial assessment at 129 of these installations and of those, 63 were found to require no further action, while 66 are proceeding to the next step in the CERCLA process. During these initial assessments, DoD evaluates both groundwater and drinking water. If DoD identifies PFOS and/or PFOA from DoD activities in off-base drinking water above EPA's LHA, we quickly take action (i.e., a CERCLA removal action) to provide treatment or an alternative water source.

In addition, as part of our normal operations, the Department has sampled over 500 on-base DoD drinking water systems worldwide. Of those, we identified 34 with PFOS and/or PFOA above EPA's LHA and took quick action to bring those systems below 70 ppt. As of today, no one is drinking water above EPA's lifetime HA of 70ppt where DoD is the known source.

Environmental Technology

The overall FY2022 budget request for Environmental Technology is $131.9 million, centered on two key programs: the Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP). These Defense-wide environmental technology programs coordinate closely with the Military Services to ensure research, demonstration, test and evaluation are focused on the Departments most pressing environmental needs. Our request for SERDP, which is focused on basic and applied research, is $51.9 million. For ESTCP, which is focused on validating more mature technologies to transition them to widespread use, we are requesting $31.5 million for environmental technology demonstrations and $39.9 million for energy technology demonstrations.

These programs have already achieved impactful results and have the potential to significantly reduce long-term costs by implementing new ways of treating sediment and groundwater contamination, to increase installation resilience by providing effective tools to planning staff to anticipate the impacts of climate change, and to reduce the life-cycle costs of multiple weapons systems through development and demonstration of innovative coatings and materials that avoid increasingly unavailable hazardous elements.

SERDP/ESTCP continue to invest in alternatives to incineration for disposal of AFFF-related per- and polyfluoroalkyl substances (PFAS) and development of analytical methods for PFAS in media other than drinking water in conjunction with the Environmental Protection Agency. In the critical area of installation energy, we are focused on proving technologies and solutions that cost-effectively incorporate energy storage into installation-level microgrids to improve the energy security and resiliency of our installations.

The Native American Lands Environmental Mitigation Program

Our budget request includes $12 million for the Native American Lands Environmental Mitigation Program (NALEMP) to address environmental impacts to Indian lands, Alaska Native Claims Settlement Act (ANCSA)-conveyed properties, and tribal treaty rights attributable to past DoD activities. Impacts are typically associated with hazardous materials, munitions debris, underground fuel storage tanks, unsafe buildings, lead-based paint and asbestos, and abandoned equipment. Most Indian lands and ANCSA-conveyed properties are located in rural and remote areas with low population densities; thus, they might not qualify as high priority sites under

DoD's traditional environmental restoration programs. The NALEMP seeks to bridge the gap between tribal needs and these traditional risk-based environmental restoration programs and incorporate tribal priorities to address potential impacts to Indian lands, ANCSA-conveyed properties, and tribal treaty rights. The goal of the NALEMP is to complete mitigation of sites by restoring health and human safety, protecting natural resources, protecting cultural resources, and returning tribal lands to optimal use.

Under the NALEMP, the DoD fosters government-to-government relationships with tribes through a Memorandum of Agreement (MOA) and then enters into two-year Cooperative Agreements (CAs) with the tribal governments. Funding provided through CAs enables tribal governments to lead NALEMP projects, incorporate "traditional ecological knowledge" into design for cleanup, and build tribal capacity regarding environmental services and technical remediation skills. Tribal governments conduct the cleanup with technical assistance and mentorship from DoD and the U.S. Army Corps of Engineers.

Eighty-eight sites in the lower 48 states and Alaska have been fully mitigated. Ninety percent of the 1,000+ potential tribal impacts reported to DoD have been assessed and 294 have been found eligible for NALEMP or are under review. In FY2020, DoD executed a total of 13 NALEMP CAs, of which nine CAs were with Alaska Native tribes and four with Pueblo Indian tribes in New Mexico. By the end of FY2021, DoD will execute an additional 16 CAs, of which 11 CAs will be with Alaska Native tribes and five Indian tribes in the lower 48 states.

Environmental Conservation and Compatible Development

The Department's lands and waters are vital to readiness. However, they also support a diverse array of fish and wildlife species, as well as significant historic sites and resources. DoD lands provided habitats for nearly 500 that are federally protected under the Endangered Species Act, over 130,000 recorded archaeological sites, and 45 National Historic Landmarks. Our $577 million request for Conservation will allow us to protect these resources in compliance with applicable federal statues, and manage for healthy and resilient natural landscapes to reduce climate driven risks such as flooding and wildfire.

Regulatory protections related to threatened and endangered species and their habitats continue to pose significant mission challenges by restricting use of our existing ranges and training areas, or limiting our development of new infrastructure. However, these investments in conservation are making significant progress towards alleviating these restrictions by promoting species recovery. In partnership with the Department of the Interior and US Fish and Wildlife Service, DoD has worked to identify priority species and conservation actions which has led to the proposed down-listing or de-listing of 10 species affecting 20 military installations. Building on this success, we will continue to work with our federal, state and non-governmental partners to develop new and innovative regulatory approaches that streamline processes and provide greater mission flexibility.

Additionally, developing and implementing climate adaptation and resilience into both the natural and cultural resource programs will be a priority moving forward. Using the data and information currently available through the Defense Climate Assessment Tool (DCAT) and emerging adaptation planning guidance related to natural and cultural resource management programs, the DoD will be evaluating the use of nature based solutions, and sustaining our

natural infrastructure to address climate driven risks such as restoring salt marshes or wetlands to reduce flood risk, or altering forest management practices to reduce fire risks.

Continued investments in conservation will maximize our flexibility to use our land, water, and airspace for military purposes and to address incompatible land uses beyond our fence lines, and will ensure that our military and civilian personnel have the access they need to conduct mission-essential activities. Strategies to address these conservation and climate adaptation priorities can be most effective through landscape-scale initiatives to better capitalize on both our on-installation conservation programs and our off-installation conservation partnerships through the Readiness and Environmental Protection Integration (REPI) Program.

The Readiness and Environmental Protection Integration (REPI) program

Of the Department's $577 million budget for conservation, $150 million is directed to the Readiness and Environmental Protection Integration (REPI) program. REPI uniquely supports DoD's ability to seamlessly operate across domains by stimulating innovative and diverse partnerships between local communities, federal and state agencies, and non-governmental organizations to limit incompatible development and promote climate resilience around our installations and ranges. Through FY2020, DoD has leveraged $1.08 billion with over $975 million in non-DoD partner contributions to protect over 757,000 acres of land across 115 installations in 35 states and territories.

The increased request for FY2022 will allow the REPI program to build capacity and significantly expand projects that promote resilience to climate change. This includes opportunities that maintain and improve "natural infrastructure," implementing solutions outside installation boundaries to enhance the benefits provided by natural systems. Natural infrastructure solutions encompass a wide range of possible actions that can help promote installation resilience, preserve access to critical installation and range assets and capabilities, and enhance DoD's core training, testing and operational missions.

The FY2022 funding will also enable increased investment in the Pacific region, preserving and enhancing key mission capabilities critical to deterring adversaries in the Pacific, including missile defense; intelligence, surveillance, and reconnaissance; and joint force capabilities. In the Pacific region alone, DoD and its partners have invested over $136 million at seven REPI projects across Hawaii, Alaska, and Guam.

Finally, the increased funding will enable DoD to expand the interagency Sentinel Landscapes Partnership between DoD, the U.S. Department of Agriculture, and the U.S. Department of the Interior. The Partnership promotes shared land use priorities, and works to identify landscapes across the country where the missions of the federal agencies – strengthening national defense, promoting sustainable agriculture and forestry, and building community resilience to climate change – intersect. From FY 2012 to FY2019, DoD has contributed $141 million and leveraged $542 million in funds from federal, state, local, and private partners to advance the goals and shared land use priorities of the seven sentinel landscapes. In cooperation with our federal partners, DoD intends to designate additional Sentinel landscapes in FY2022.

Military Aviation and Installation Assurance Siting Clearinghouse

The Military Aviation and Installation Assurance Siting Clearinghouse continues to protect the Department's ability to train, test, and operate as the nation expands its renewable and other commercial energy and power transmission capacity. Commercial wind development typically poses the greatest compatibility challenge to DoD due to physical obstruction of low-level flight routes and electromagnetic interference with DoD radar systems. DoD resolved project concerns though collaboration among the Clearinghouse, the Military Departments, local communities, states, and energy developers, thereby maintaining the Department's ability to train, test, and operate while enabling development of alternative energy resources. DoD negotiated and signed 29 Mitigation Agreements with wind energy developers to minimize the impacts from proposed projects on DoD missions. Through our collaborative efforts, none of the proposed projects warranted a DoD objection to the Secretary of Transportation or Administrator of the FAA.

The Department is actively implementing new approaches to protect DoD missions. The Clearinghouse intensified efforts to advocate for state-level legislation to protect military installations and operations from incompatible wind energy development. Indiana, Wyoming, and Alabama have passed protections for military missions in wind turbine permitting. Although DoD and developers have had success resolving issues related to incompatible energy development, state support is invaluable in the rare cases where developers choose not to voluntarily coordinate with DoD.

The Department has developed active interactions with the Bureau of Ocean Energy Management (BOEM) to manage increasing plans for offshore energy development. The Clearinghouse, Department of Interior, and BOEM have updated and implemented offshore review practices to allow for DoD input at every stage of planning, permitting and development.

DEPARTMENT OF DEFENSE ENERGY PROGRAMS

The FY2022 President's Budget aligns with direction from the President and the Secretary of Defense to ensure installations and forces are resilient in the face of a wide range of challenges to include climate change, disruptions to energy or water supplies, and direct physical or cyber-attacks. The FY2022 President's Budget includes approximately $4.3 billion in energy investments, including both installation energy (the energy used to power permanent installations and non-tactical fleet vehicles) and operational energy (the energy required for training, moving, and sustaining military forces and weapons platforms for military operations). Achieving Joint lethality, forward force maneuver and posture resilience, and resilient and agile logistics in support of military combat operations, each require the Department to reconsider the assured availability of fuel and power around the globe.

In support of operational energy resilience, the Department is requesting $3.2 billion to upgrade and procure new vehicles and aircraft, increase the range and endurance of platforms, enhance energy resiliency at contingency bases, and plan and execute wargames to account for increasing risks to logistics and sustainment. As the Department prepares to operate in contested environments around the globe, these investments increase range, endurance, and lethality while decreasing risks to warfighters.

In support of installation resilience, we are requesting $1.1 billion for energy resilience and energy conservation initiatives, most of which are directed to existing buildings. This includes $595 million in the Services' operation & maintenance accounts for sustainment and recapitalization projects, which generally involve retrofits to install improved lighting, high-efficiency HVAC systems, double-pane windows, facility related control systems (FRCS), and new roofs. In addition, the Energy Resilience and Conservation Investment Program (ERCIP) provides $287 million in military construction funding, including planning and design, to enhance energy resilience through installing microgrids with renewable and clean energy generation and energy storage alternatives and projects that will improve energy efficiency at our installations. In particular, the FY2022 request includes $10 million in ERCIP design funds specifically to plan and design projects to enable the installation of electrical vehicle charging stations in support of the President's Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad*, which requires the Department to electrify its non-tactical vehicle fleet.

Threats to Energy

Energy is an essential enabler of military capability, and the Department depends on energy-resilient forces, weapon systems, and facilities to achieve its mission. At home and abroad, installations are reliant on commercial, municipal, and host nation power grids for day-to-day operations, including command and control systems, communications, lighting, heating, and cooling. Similarly, the Department relies on organic capabilities and commercial partners to provide refined petroleum products to globally deployed forces, and maximizes the use of local sources to minimize the time, resources, and effort associated with acquiring, moving, and delivering fuel to deployed forces.

Adversaries recognize the strengths of U.S. power projection and sustainment, and possess long–range weapons, significant anti–access/area–denial (A2/AD) systems, and substantial cyber capabilities able to degrade the ability of the Department to provide energy to forces and facilities. In response to these threats and in alignment with statute, the Department shall "ensure readiness of the armed forces for their military missions by pursuing energy security and energy resilience" (10 U.S.C. § 2911) and "ensure the types, availability, and use of operational energy promote the readiness of the armed forces" (10 USC § 2926).

In addition, the Department's ability to provide energy to critical missions is affected by the climate. A climate-resilient supply chain is one in which the Department has ensured that key suppliers and industries can still operate though impacted by climate change, with special attention given to "last-mile" resilience.

Enterprise-wide Energy Initiatives

Facing the imperative to sustain critical operations in contested environments while also reducing our carbon footprint, the Department is implementing a series of initiatives to enhance the use of power or fuel and support informed decision-making with regard to investments and future force capabilities. In partnership with the Joint Staff, Defense Agencies, and the Services, the Department is pursuing the following initiatives to transform how the Department considers energy in planning and operations:

10 U.S.C. §2912 Energy Cost Savings

With the passage of the FY2020 and FY2021 National Defense Authorization Acts, 10 U.S.C. §2912 now allows the Military Departments to retain amounts equal to installation and operational energy cost savings in order to fund additional energy resilience, energy efficiency, and installation quality of life projects. In FY2019 and FY2020, the Military Departments piloted efforts to retain $115 million in installation energy cost savings and $20 million in operational energy cost savings using the authority. Presently, OASD(Sustainment) is supporting pilot initiatives by Military Departments to implement this authority across both installation and operational energy activities, pursuant to the statute and DoD financial regulations.

Integrating Climate Mitigation Considerations into DoD Procurement

While the Department has procured sustainable goods and services for many years, the Department now is preparing to consider greenhouse gas emissions in a broader set of energy procurement decisions. For instance, based on Executive Order 14008, the Department is evaluating how to procure carbon-free electricity for our installations. The Deputy Secretary of Defense also tasked OASD(Sustainment) to develop policy recommendations for the application of the social cost of carbon into DoD procurement. Finally, the FY2022 President's Budget provided an additional $2.0 million to support additional testing and qualification of drop-in compatible alternative fuels already in commercial use to ensure the Department's ability to use any drop-in compatible fuels available in the global marketplace.

Operational Energy Resilience

In FY2020, the Department consumed nearly 78 million barrels of fuel to power ships, aircraft, combat vehicles, and contingency bases at a total cost of $9.2 billion. To respond to the needs of a global force, the Department purchased 48% of this fuel outside of the U.S. Beyond liquid fuels, the Department also is relying on advanced energy storage to enable long-range, autonomous, directed energy, high-power sensors, and other warfighting capabilities across air, sea, and land domains.

The Department depends on the resilient delivery of energy to forces, weapon systems, and facilities around the globe. To prepare for peer competition where even the homeland is contested, the Department is addressing a range of technological, operational, and policy initiatives to enhance the use of energy in warfighting.

Investments in Operational Energy

FY2022 President's Budget significantly enhances resources dedicated to reducing operational energy risks and applying energy technologies to improve warfighter capabilities. Relative to the FY21 President's Budget, these operational energy enhancements include:

- Operational Capability Improvement Fund (OECIF): +$74.3 million
- Operational Energy Prototyping Fund (OEPF): +$23.2 million
- Alternative Fuels Certification: +$2 million
- Air Force/Navy Operations and Planning Tools: +$38.6 million
- Air Force Large Aircraft Drag Reduction: +$14.1 million

- Navy Platform and Propulsion Upgrades: +$19.5 million
- Army Tactical Vehicle Electrification: +$5.2 million

The Department also uses the budget certification authority in 10 U.S.C. §2926 to quantify operational energy investments across the Military Departments and Defense Agencies and evaluate the alignment of the President's Budget with the operational energy strategy. ASD(Sustainment) judged the FY22 President's Budget as sufficient to meet the previous operational energy strategy and will provide this assessment to the Congress by the end of July 2021. As the Department develops a revised energy strategy that reflects the new guidance related to resilience and climate, the ASD(Sustainment) will use the budget certification authority to rigorously review the sufficiency and direction of investments in operational energy resilience.

Contested Logistics and Risks to Energy

To ensure that energy considerations are included in Joint and Service capability development and planning, we are participating in the Joint Concept for Contested Logistics (JCCL) as part of the broader Joint Warfighting Concept (JWC). We also promote capabilities that identify solutions to overcome fuels distribution challenges in contested environments, and support the development of interoperable, mobile, and survivable operating concepts. These capabilities include, but are not limited to, the Joint Petroleum Over the Shore (JPOTS) system of systems and the Navy's Light Amphibious Warship (LAW). The JPOTS system of systems refreshes and advances the capability required to transfer bulk fuel from offshore to a land-based termination point during future contingency and crisis response operations.

Advanced Energy Storage

Faced with increasing kinetic and non-kinetic threats, the Department is shifting toward more distributed, austere, and autonomous operational concepts carried out by platforms and installations with escalating power requirements. Advanced energy storage is emerging as a critical enabler of these new capabilities. Similar to the Nation as a whole, however, the Department lacks a strong domestic supply chain and depends on foreign sources.

As part of this response, the ASD(Sustainment) joined four other inter-agency partners in September 2020 to establish the Federal Consortium for Advanced Batteries (FCAB) to accelerate the development of a robust secure domestic industrial base for advanced batteries. DoD was part of the inter-agency team that developed an inter-agency national strategy for lithium batteries designed to guide future investments in the domestic lithium battery manufacturing value chain; Department of Energy will release the strategy later this year. The Department also is supporting the implementation of Executive Order 14017, *America's Supply Chains*, and ASD(Sustainment) will continue to provide a single voice regarding advanced energy storage requirements for national security applications.

Installation Energy Resilience

At over 500 worldwide military installations, the Department spent $3.5 billion in FY2020 on energy to power over 500 installations and 170,000 non-tactical vehicles.

Investments in Installation Energy

The FY2022 President's Budget includes $1.1 billion in investments in installation energy. Reflecting a strong track of record and alignment with Administration priorities, the FY2022 President's Budget included enhancements totaling over $181 million relative to the previous budget request. These enhancements include:

- ERCIP for resilience and conservation: +$104.1 million
- ERCIP Planning & Design for resilience and conservation: +$15.9 million
- ERCIP Planning & Design for electric vehicle charging infrastructure: +$10 million
- Smart Grid pilot initiatives: +$48 million
- Net Zero Installations: +$3 million

Installation Energy Resilience Policy and Governance

The Department continues to be proactive in developing policy, guidance, and tools to advance installation energy and climate resilience.

The Department is coordinating an updated policy with the Military Departments to implement energy resilience requirements (10 U.S.C. 2920) that resulted from the Fiscal Year 2021 National Defense Authorization Act, and anticipates issuing the guidance this fiscal year. The policy memorandum sets forth energy availability standards for critical missions. In addition, it directs the military departments to promote the use of multiple and diverse sources of energy in their planning, prioritization of energy resources originating on the installation, encourages the use of micro grids, and favors the use of full-time, installed energy sources rather than emergency generation in their energy resilience solutions.

Black Start Exercises

Black start exercises are a growing component of the Department's approach to risk assessment. In alignment with statute, the Department is conducting full-scale black start exercises to evaluate risks to the readiness of our military installations. These exercises have proven invaluable in identifying gaps in our installations' electrical infrastructure, such as previously-unknown interdependencies between various systems, so that we can best prioritize our resilience resources and planning.

Last year, the Department issued the "Framework for Planning and Executing Black Start Exercises" that facilitates the planning and execution of future exercises. An "Energy Resilience Tabletop Exercise Framework" was also issued to promote continued modeling of black start exercises in times of restricted travel and social distancing. In FY2021, the Department has executed an additional two exercises at Marine Corps Air Station Miramar and Joint Base McGuire-Dix-Lakehurst. In the remainder of FY2021 and beyond, the Department will execute exercises at Eielson AFB, Wright-Patterson AFB and Springfield-Beckley Air National Guard Base, Robins AFB, JB Langley-Eustis, Fort Hood, Fort Leavenworth, Rock Island Arsenal, Naval Construction Battalion Center Gulfport and more.

Energy Resilience and Conservation Investment Program (ERCIP)

Supported by black start exercises, installation energy plans provide the basis for prioritizing resources toward critical gaps. ERCIP is a critical element of DoD's strategy to improve the energy resilience, energy security, and energy conservation of its fixed installations.

The Department increased the budget request for ERCIP to reflect the significance of risks to energy systems as well as the need to mitigate the causes of climate change. In FY2022, DoD's combined ERCIP request is $286.75 million for ERCIP, including $243.64 million for energy/water resilience projects, $2.96 million for energy/water conservation projects, $30.15 million for associated planning and design efforts, and $10 million to plan and design EV utility infrastructure upgrades.

The FY2022 ERCIP request include two energy resilience projects, including a 10 megawatt (MW) Microgrid Project at Fort Bragg and a Landfill Gas (LFG) Power Meter Station at Marine Corps Air Station Miramar. Fort Bragg's ERCIP project consists of a 10 megawatt microgrid to increase energy resilience by providing continuous power for critical missions. Even during a commercial power outage, this microgrid technology will route continuous power to Joint Special Operations Command during contingency operations, increasing reliability of operations and mission assurance. Marine Corps Air Station Miramar is developing one of the nation's largest renewable energy microgrids to create a resilient and self-sustaining air station. The Landfill Gas Power Meter Station will enhance the microgrid controls as well as it will also incorporate and store renewable energy for use. The enhanced MCAS Miramar microgrid will result in improved energy resilience during grid outages in support of mission assurance.

For FY2022, the Department is taking a more proactive approach with an ERCIP program comprised of a variety of technologies such as renewable and clean energy power generation, energy storage systems, industrial control systems, microgrids, and improvements to distribution systems to enhance installation energy resilience, security, and control. Just as the Department ERCIP Construction request increased, our Planning and Design request increased from $14.25 million to $40.15 million to support increasingly complex microgrids, renewable and clean energy generation, and advanced energy storage. Included in this amount is $10 million specifically for planning and design of the charging infrastructure needed to accommodate the electrification of DoD's non-tactical vehicle fleet.

The Energy Resilience Assessment Tool

The Department is enabling the identification of solutions beyond backup generators to meet critical energy requirements. To accomplish this, the Department continues to upgrade the Energy Resilience Assessment (ERA) Tool for use by the DoD Components. The ERA Tool allows users to evaluate and select energy resilience investments that best meet the cost and performance requirements of their critical missions. In addition to conducting continuous virtual training for installation energy personnel, recent upgrades include improved visualization of results and site-specific courses of action. Use of the ERA Tool to validate energy resilience enhancements is a requirement for all ERCIP project submissions throughout the Department.

Performance Contracting Authorities

The Department continues to utilize performance contracting (i.e., ESPCs/UESCs) as a significant part of its efforts to enhance energy resilience through energy efficiency. Guided by the installation energy planning process, DoD will continue to use these contracts where they enhance DoD mission readiness, mission assurance, and ultimately DoD's warfighting capability.

For example, through an ESPC at Marine Corps Recruitment Depot (MCRD) Parris Island the Marine Corps has enhanced readiness through the installation of a 3.5 megawatt combined heat and power plant (CHPP), 6.7 megawatts of solar photovoltaic panels with integrated energy storage, and a microgrid control system. Built above the flood zone, the CHPP is less susceptible to hurricanes, storms and sea level rise. Based in part to savings from the ESPC, MCRD Parris Island decreased its electricity purchased from the commercial grid by more than 50% in FY20 compared to FY19, which is contributing to greenhouse gas reductions.
Additionally, Misawa Air Force Base awarded a $206 million-dollar ESPC that includes energy conservation and resilience measures such as a smart grid, solar arrays, and a cogeneration power plant capable of generating 6.2 MW of power and 83,000 lbs/hour of steam. The new generation plant will cut energy waste by an estimated 20% across 679 buildings, generate 70% of the peak electrical demand, and reduce 60% of the annual electrical load.

Cyber Resilience

To enable the projection, sustainment, and direct support to forces around the globe, DoD installations rely on a range of Facility-Related Control Systems (FRCS) to operate critical missions and facilities. FRCS in DoD are subject to a growing range of cyber threats as these systems have increasingly become more automated and connected. The attack surface for potential adversaries has increased exponentially as result of the integration of network-based building management systems, Internet of Things (IoT) devices, as well as the connection of legacy control systems into these networks.

As cyber threats continue to expand, the Department has responded by integrating cybersecurity into the overall policy and governance for energy resilience. For example, DoD installations now include cybersecurity considerations in the development of installation energy plans, and cyber secure FRCS are now integral to utility privatization agreements, energy savings performance contracts (ESPCs), and utility energy service contracts (UESCs). The Department now requires the DoD Components to submit annual FRCS Cybersecurity Plans to capture their efforts to collect inventory, complete assessments, implement mitigations, and maintain sustainment for FRCS cybersecurity. These complement installation energy plans and are due by the end of June 2021. The Department has also codified an FRCS Master List and associated security rankings to standardize the resourcing, training, education, and budgetary spend around a common definition of FRCS.

Energy Innovation

OASD(Sustainment) oversees three Department-wide research, development, test, and evaluation programs that support resilient, efficient, and clean energy for use by installations and forces.

The overall FY2022 budget request for Operational Energy Technology is $97.5 million, centered on two key programs: the Operational Energy Capability Improvement (OECI) program and the Operational Energy Prototyping (OEP) program. These Defense-wide energy technology programs coordinate closely with the Military Services to ensure research, demonstration, test and evaluation are focused on the Departments most pressing operational energy needs. For OECI, which is focused on advanced technology demonstrations, we request $59.3 million for baseline efforts and $15.0 million for nuclear fuel efforts. Our request for OEP, which is focused on demonstration of operational energy technology and validation prototyping, is $23.2 million.

To prepare for tomorrow's energy challenges and combat climate change, OECI/OEP invest in three lines of effort. Projects focused on Powering the Force support the deployment of more mobile and distributed operations with decreased and more agile logistics, especially through contested environments. Efforts in Electrifying the Battlespace enable the electrification of weapons, platforms, unmanned systems, and soldiers which drastically reduces fossil fuel resupply and enables new capabilities such as silent watch and exportable power. Finally, Commanding Energy efforts focus on capturing and understanding platform and weapon system energy profiles, including adversarial profiles, to transform the Joint Force from reactive to predictive with energy management and control.

The FY2022 budget request for Installation Energy Technology is $39.9 million, implemented through the Environmental Security Technology Certification Program's (ESTCP) Installation Energy and Water Program Area (EW). The ESTCP EW Program Area focuses on improving the resilience of DoD's energy and water systems and reducing carbon emissions from buildings and non-tactical vehicles. To achieve these outcomes, the Program identifies, demonstrates, and transitions innovative technologies that increase the energy and water efficiency of DoD buildings, improve the security and reliability of energy and water supply, reduce the life-cycle cost of DoD facilities, and reduce carbon emissions from on-site fuel consumption.

CONCLUSION

Thank you for the opportunity to present the President's FY2022 budget request for DoD programs supporting energy, installations, and environment. We appreciate Congress' continued support for our enterprise and look forward to working with you as you consider the budget request.

Mr. Paul D. Cramer
Principal Deputy Assistant Secretary of Defense for Sustainment (Installations)

In September 2020, Mr. Cramer was selected as the Principal Deputy of the Assistant Secretary of Defense for Sustainment (Installations). He serves as the principal advisor to the Assistant Secretary of Defense for Sustainment. In June 2013, Mr. Cramer was chosen for the Senior Executive Service. He served as the main advisor to the Assistant Secretary of the Army (Installations, Energy, and Environment) within the Army Secretariat responsible for the Army's worldwide installations and housing structure. He provided policy and program direction for all Active Army and Reserve Component facilities. He oversaw the execution of key Army engineering; housing; privatization initiatives; military construction; real property acquisition, management, and disposal; and base realignment and closures.

CAREER CHRONOLOGY:
September 2020 - Present: Principal Deputy Assistant Secretary of Defense for Sustainment (Installations)
June 2013 – September 2020: Deputy Assistant Secretary of the Army (Installations, Housing and Partnerships)
December 2011 - June 2013: Acting Deputy Assistant Secretary of the Army (Installations, Housing and Partnerships)
September 2010 – December 2011: Assistant for Construction, Housing, and Base Operations, Office of the Assistant Secretary of the Army (Installations, Energy and Environment)
September 2009 – August 2010: Deputy to the Garrison Commander, United States Army Garrison Yongsan, Republic of Korea
July 2007 – July 2009: Chief of Public Works, Installation Management Command, Korea Region
November 2005 – July 2007: Director of Public Works, Fort Polk, Louisiana
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EDUCATION:
Harvard Senior Executives in National and International Security, 2018
MS., Engineering Management, University of Missouri Rolla, MO, 1995
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RECORD VERSION

STATEMENT BY

MR. J.E. "JACK" SURASH
ACTING ASSISTANT SECRETARY OF THE ARMY FOR INSTALLATIONS,
ENERGY AND ENVIRONMENT

BEFORE THE

SUBCOMMITTEE ON READINESS
COMMITTEE ON ARMED SERVICES
UNITED STATES HOUSE OF REPRESENTATIVES

FIRST SESSION, 117TH CONGRESS

ON FISCAL YEAR 2022 BUDGET REQUEST FOR MILITARY CONSTRUCTION,
ENERGY, AND ENVIRONMENTAL PROGRAMS

JULY 14, 2021

NOT FOR PUBLICATION UNTIL RELEASED BY THE
COMMITTEE ON ARMED SERVICES

Chairman Garamendi, Ranking Member Lamborn and members of the Subcommittee: on behalf of the Soldiers, Families, and Civilians of the United States Army, thank you for the opportunity to present the Army's Fiscal Year (FY) 2022 budget request for installation infrastructure.

We would like to express our gratitude to members of this committee for your strong support of Army installations, Soldiers, and Families. Thank you for supporting our budget request for FY 2021.

The Army strategy provides a clear path to transform and achieve overmatch against its adversaries in great power competition. The Army priorities are people, readiness, and modernization. This prioritization reflects the Army's success in rebuilding and sustaining tactical readiness over the past six years, establishing strategic readiness, investing in critical capabilities, and recognizing the fundamental role of our people and facilities in driving readiness and modernization. In support of the Army Strategy and the evolving priorities, the Army published additional supporting strategies, amongst them, the *Army People Strategy, The Army Modernization Strategy*, and the *Army Installations Strategy* to help guide resource and programmatic allocations.

You have heard the Secretary of the Army and the Chief of Staff of the Army say People are our number one priority, our greatest strength, our most valuable asset, and our most important weapon system. *The Army People Strategy* describes how we will shift from simply "distributing personnel" to more deliberately managing the talents of our Soldiers and Civilians; how we will prioritize their quality of life; and how we will improve housing and barracks, healthcare, childcare, spouse employment, and permanent change of station moves. People drive our success in readiness, modernization, and reform.

Our FY 2022 budget request is guided by the *Army Installations Strategy* in developing modern, resilient, sustainable installations; enhancing strategic readiness by providing quality facilities, services, and support to our Soldiers, Families, and Civilians.

Installations are platforms from which we build Army culture, care for our People, and project and sustain forces essential to strategic readiness and the Army's ability to

deploy, fight, and win our nation's wars. With timely, adequate, predictable, and sustained funding, we will ensure that our People remain a priority and this will help us continue to recruit, train, and retain an Army of high quality Soldiers, prepared to win our Nation's wars.

THE ARMY INSTALLATIONS STRATEGY

The *Army Installations Strategy* nests with the priorities of the *Army Strategy*, and complements and supports the *Army People Strategy* and the *Army Modernization Strategy*. It addresses people, readiness, and modernization, in the context of Army installations and encompasses taking care of people, strengthening readiness and resilience, modernizing and innovation, and promoting stewardship. The strategy represents a pivot from an Industrial-Age paradigm characterized by rigidity and purpose-built specialization, to a data-rich, reconfigurable Information Age construct.

Taking Care of People

The Army wins through its People. Adaptable and tailorable quality of life programs for Soldiers, Civilians, and Families improve Army readiness and reduce uncertainty. Our People promote the Army as a great team to join, and installations as the best places to work and live. Facility conditions; modern services; Family programs; and Morale, Welfare, and Recreation functions are essential components for taking care of our People. Winning matters—the Army must be able to compete for and win the fight for talent—both for those who serve in uniform and those who seek to be part of our civilian workforce. What matters most to our people is not whether the Army owns or operates a facility, but whether the services are delivered in quality, safe facilities, which are responsive, user friendly, and convenient.

Quality of Life Priorities

We are in competition for talent. If we want the best Soldiers and we want them to stay, we must invest in taking care of them by investing in their quality of life. Recognizing the important role quality of life plays in recruitment, retention, and

readiness, we are focused on improving housing and barracks, ensuring the best health care, expanding access to child care, improving opportunities for spouses to gain meaningful employment and build their own careers, and reducing the turbulence of moving. Another priority is support and resilience where our focus is on increasing support and resources to some of our remote, isolated, and challenged installations. These focused efforts help strengthen the Army team.

Family Housing and Barracks

Our Soldiers and Families deserve high quality, safe housing. Our focus is on fixing the privatized housing issues brought to light in 2018, while simultaneously working with the privatized companies to strengthen the long-term financial health of the housing portfolio. We are conducting 100 percent quality assurance inspections on change of occupancy and life, health, and safety maintenance work orders.

The Army obtained agreement on implementing the vast majority of the Tenant Bill of Rights at installations with privatized housing and continues to work towards agreement on executing the remaining three tenant rights (common tenant lease; dispute resolution; and rent segregation) at six installations. We continue to host weekly housing meetings with key stakeholders and Residential Communities Initiative (RCI) companies on a rotating basis to review physical and financial condition of privatized housing. We conduct quarterly Town Hall meetings with Commanders and residents; we hired independent third-party experts to perform comprehensive financial and development reviews; we established an enforceable incentive fee metric to reward improved work order response times, achieve better quality work, and increase resident satisfaction. RCI companies have obtained $1.5 billion in private sector sourced financing and are reinvesting another $1.3 billion to make housing improvements. Furthermore, the Army has invested $1.7 billion over the past three years in Army-owned housing improvements and construction.

The Army has also invested $2.1 billion in barracks for construction, operations and maintenance, and restoration and modernization over the last three years. The Army is focused on modernizing barracks standards that incorporate user feedback and

the latest technology. The Army Maintenance Application (App) allows Soldiers to quickly submit a maintenance claim from their cell phone without having to wait for their chain of command or make an appointment. The app will eventually become the primary tool for maintenance inquiries for residents of Army-owned Family housing and barracks across the Army.

Historic Housing Program

The Army is faced with the extraordinary challenge of managing the largest inventory of historic housing in the federal government. The Army must provide quality of life for Soldiers and their Families; manage high renovation costs for historic housing; address hazards found in historic building materials such as lead-based paint and asbestos; and address the need for expanded living space and modernization of mechanical systems, all while preserving the historic and architectural character of the huge inventory of over 30,000 historic homes on Army installations.

Issued in September 2020, the *Program Comment for Department of the Army Inter-War Era Historic Housing, Associated Buildings and Structures, and Landscape Features (1919-1940)* establishes a new paradigm for integration of National Historic Preservation Act requirements as part of the solution to the Army's most critical Family housing concerns for over 3,200 Inter-War Era homes. The management actions addressed by the Program Comment directly improve the material living conditions and the quality of life, health, and safety for the thousands of Army Family members who live in Inter-War Era housing, whether government-owned or privatized, while mitigation measures ensure the historic and architectural character of this housing is preserved.

Child Care

Army Families do not always have the stability of an established neighborhood or the proximity of relatives to allow for a constant and reliable child care plan, thus Soldiers look to the Army to provide services that assist them in safely caring for their children so that they can focus on their mission and spouses on their careers.

The Army is challenged by child care capacity, mainly for infants and toddlers. Additionally, availability of quality off-post care is limited in many communities, reducing options for Soldiers who cannot access on-post care. The Army is implementing mitigation strategies to maintain and, in some cases, increase access to care. This includes adding and expanding 21 Child Development Centers over the next ten years, which will increase capacity by about 4,000 new spaces.

Safety and Occupational Health.

Ensuring our Soldiers and Civilians are ready to support the Army mission requires extensive continual investments in proactive injury and illness prevention both on the installations and during mission execution. The Army is developing prevention through design and facilities systems safety policies to identify and reduce safety and occupational health risk in our facilities. The adoption of these modern practices, during construction and while the facility is being operated, are critical to Army readiness, long-term use, and disposal of our facilities. To ensure these techniques are adequately implemented and evaluated, the Army is investing in the readiness of its safety and occupational health workforce through training, education, and partnerships.

Strengthen Readiness and Resilience

As the Army's initial maneuver platforms, installations must be able to operate and meet power projection requirements in and from an increasingly contested multi-domain operational environment. Army installations support total Army operations to mobilize and project forces and capabilities anywhere in the world, at any time. Energy and water resilience, or uninterrupted access to energy and water, are essential for Army readiness and ensuring the Total Army can deploy, fight, and win. They advance the capability of systems, installations, personnel, and units to respond to unforeseen disruptions and quickly recover critical missions.

The recently published *Army Installation Energy and Water Strategic Plan* aligns with the Army Installations Strategy and establishes resilience, efficiency, and affordability as strategic goals. They also must be prepared to address cyber, physical, and natural threats including climate change.

Climate Change

The Army recognizes climate change as a growing global security threat. In line with the President's and the Secretary of Defense's direction, we are prioritizing climate change considerations in our threat picture, strategic plans, operations, and infrastructure design. We will include climate risk analyses in our war-gaming, modeling and simulation activities, and our daily operational missions. The Army is poised to build on past efforts with a focus on integrating climate change factors within assessments and planning, installation resilience, science and technology, operational energy, sustainable land management, and procurement. We are taking significant steps to address climate change and extreme weather impacts, which include a Secretary issued Army Directive, "U.S. Army Installation Policy to Address Threats Caused by Changing Climate and Extreme Weather," the Army Climate Assessment Tool, and the Army Climate Resilience Handbook. In March 2021, the Army established the Army Climate Change Working Group to synchronize and direct Army activities to address climate implications and policy, planning, and implementation across the force, and execute climate change objectives.

Energy and Water Resilience

The Army is the largest consumer of installation energy in the Department of Defense, spending more than $1 billion per year on facility energy and water. Our installations rely, with few exceptions, on commercial energy and water sources to accomplish critical missions. The vulnerabilities in the interdependent electric grids, natural gas pipelines, and water resources supporting our installations jeopardize mission infrastructure, installation security, and the Army's ability to project power and sustain global operations.

The *Army Installation Energy and Water Strategic Plan* sets a vision and establishes goals, strategic objectives, and measurable targets to shape efforts to achieve long-term infrastructure resilience, efficiency, and affordability. Building and

measuring resilience enables Army readiness by improving the ability to prevent and recover from disruptions to vital energy and water utility services.

We gain valuable insights into our existing infrastructure condition and capability gaps, resource access, and system operations and plans through planning and condition assessments. Installation Energy and Water Plans (IEWPs) outline critical mission needs, characterize energy and water baseline conditions, and propose prioritized approaches for projects and operational activities to increase energy and water resilience. The Army has 30 IEWPs at or near-completion; all remaining installations are scheduled to be completed by the end of FY 2022. IEWP results will be incorporated into installation master plans. Black Start Exercises assess capabilities and reveal gaps which are not always discoverable during table top exercises. They have also resulted in improved communications between the Army, local community, and utility companies that service an installation.

The Office of Energy Initiatives is the Army's central program management office that develops, implements, and oversees privately financed, large-scale energy projects. Energy generation, storage, and control capabilities are favored; when combined, these capabilities create an “island” effect—enabling critical mission sustainment during an electrical grid outage. Their portfolio includes 11 operational projects with 325 MW of energy production capacity. These projects have resulted in $643 million of private sector investment in Army resilience, on top of anticipated life-cycle operations and maintenance values of $603 million.

The Army also leverages private sector expertise and partnership through Energy Savings Performance Contracts and Utility Energy Service Contracts to improve efficiency and contribute to resilience. While these projects are targeted at reducing energy and water consumption, they also enable Army to address maintenance and repair backlogs sooner than if we rely solely on constrained appropriated funds.

The Energy Resilience and Conservation Investment Program is the DoD’s only direct-funded program targeted for energy resilience. The Army received approximately $35.1 million for two projects that included energy and water resilience capabilities.

The Army's Utilities Privatization Program conveys utility systems to a non-government entity, usually a utility company, through a utility services contract. These contracts allow the Army to access private sector financing for up to 50 years to modernize and recapitalize utilities infrastructure. We have privatized utilities at 14 of 18 Power Projection Platforms Installations and at all four of our Mobilization Force Generation Installations.

Modernize and Innovate

The Army Modernization Strategy states installations must modernize "at pace" with the rest of the Army to support a modernized Army by 2035. To do this, installations must provide facilities, ranges, airfields, and support infrastructure that possess the appropriate physical characteristics required by new Army weapons systems.

Army modernization requires that installations provide the facilities, systems, and connectivity to support the Army on its path toward full multi-domain operations readiness by 2035. Installation management practices must transform to accommodate new information-era technologies. Innovation efforts support the Army priority of Reform. We will prioritize those that create efficiencies, expand workforce productivity, and generate resilience.

The Army will plan for upgrades to maintenance facilities, motor pools, ranges, network infrastructure, administrative facilities, housing, barracks, secure facilities, and utilities upgrades to keep pace with other modernization efforts. Force projection also requires assessment of roads and highways, bridges, ramps, marshaling yards, ammunition supply points, railways, and airfields. Real property master plan processes will expand in technical sophistication, using data-informed analysis and modeling to accommodate new specifications for modern equipment and achieve better environmental analysis necessary to fulfill requirements of the National Environmental Policy Act.

We will leverage our data to produce new return-on-investment metrics expressed not solely in terms of the condition of the buildings, roads, and utilities, but in new terms of personnel, readiness, modernization, and/or cyber effects. For example,

ultimately what matters is not whether we have too many Q3/Q4 (failing to meet minimum standards) barracks, but whether barracks investments observably move the needle on retention or reductions in disciplinary and health problems. Another example is a recent RAND study that revealed in the case of tactical equipment maintenance facilities (TEMFs), the lack of overhead crane lift capacity correlated with lower Fully Mission Capable (FMC) ratings for Armored Brigade Combat Team companies, and battalions. In particular, Fort Hood had converted some old tactical vehicle wash racks into shelters to mitigate the lack of overhead crane lift capability in the older TEMFs. Over time, this resulted in higher than expected FMC ratings given the overall age of the TEMF inventory. Perhaps smaller targeted investments can yield significant improvement in FMC ratings over time.

Promote Stewardship

The Army's mission is inseparable from the environmental resources that are critical to accomplishing that mission. Readiness training for multi-domain operations; high intensity conflict; and development, testing, and fielding for combat system modernization all require access to realistic natural landscapes, ecosystems, and environmental conditions that Soldiers and materiel experience during combat. Preserving these assets in a safe, sustainable manner is critical not only to Army readiness, but to the well-being of the Total Army and those communities that surround and support Army installations.

Preserve Natural Resources

Mission supporting capabilities of our training and testing sites are directly impacted by the loss or alteration of the natural infrastructure. Limitations on training and testing, loss of range facilities and assets due to increases in wildfires, floods, and training restrictions due to increasing endangered species and critical habitats are some of the documented impacts to the mission. Due to the 226 threatened or endangered species found on 170 Army installations and facilities in the United States, the Army has species-related restrictions on over two million acres of training and testing lands. As

the Army sustains and improves the natural infrastructure containing endangered species habitat on our installations, endangered species populations increase. When endangered species populations increase, the military capabilities of mission critical natural landscapes are enhanced. Due to the recovery of endangered species populations, species related training restrictions have been lifted on 325,000 acres of critical Army land at Fort Hood, Fort Bragg, and Fort Stewart. Effective planning and management ensures training and testing realism, and also makes certain natural infrastructure assets remain viable and accessible. The Army's focus on sustaining its natural infrastructure ensures training and testing realism, and makes certain these natural assets remain viable, accessible and resilient into the future.

Remediate Contaminants

The Army conducts cleanup under the Defense Environmental Restoration Program (DERP) and in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This provides a consistent national approach for addressing cleanup and includes prioritizing sites throughout the United States using a risk-based process—essentially worst sites first. The Army uses DERP to address two types of environmental cleanup: the Installation Restoration Program (IRP), which manages the cleanup of chemicals released to the environment—things that may cause human health or ecological concerns, and the Military Munitions Response Program (MMRP)—primarily addresses explosive hazards. DERP cleanups occur at Active and Reserve installations as well as closed. The Army has implemented, and continues to execute, a strategy that enables sites that meet eligibility guidelines to be addressed using DERA funding. The FY 2021 National Defense Authorization Act, authorized use of DERA funds to address Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) at Army National Guard locations. Within the framework of CERCLA, the Army investigates releases, prioritizes responses, and assesses appropriate, cost-effective cleanup actions based on risks to human health and the environment.

FY 2022 BUDGET REQUEST FOR INSTALLATION INFRASTRUCTURE

The Army's FY 2022 budget requests funding to take necessary near-term actions to help make installations multi-domain ready and resilient.

Military Construction

Army Military Construction. The Army's FY 2022 Military Construction request for $1.7 billion will improve Installation Readiness, Industrial Base Readiness and Soldier Quality of Life. The Quality of Life investments consist of four new barracks projects for $262 million and one Family Housing project for $92 million. The total request includes $835 million for the active component, $257 million for the National Guard, $65 million for the Army Reserve, $491 million for Army Family Housing (Construction and Operations), and $65 million in the Base Closure Account for environmental remediation, caretaker services, and program management costs at BRAC sites.

Military Construction, Army (MCA). Inside the Active Army's request there is $399 million supporting Installation Readiness ($141 million Training, $95 million Command & Control and $51 million Maintenance, $96 million Industrial Base and $16 million in support of European Combatant Command) and $249 million for Barracks. The Active Component also has $27 million for Host Nation Support.

Pilot Program for Additional Child Development Center Construction. In the FY 2021 National Defense Authorization Act, section 2865, the Services were directed to conduct a pilot program under which the services may carry out military construction projects not otherwise specified in law. The Army plans to utilize the existing $27 million authorization provided in FY 2020 to accelerate a Child Development Center project at Fort Gordon, subject to the availability of funds.

Military Construction, Army Reserve (MCAR). The FY 2022 MCAR budget request supports three major construction projects: Area Maintenance Support Activity facility in Southfield, Michigan, valued at $12 million; Wright Patterson AFB Army Reserve Training Center, valued at $19 million; and Fort McCoy, Wisconsin transient training building, valued at $12.2 million.

Military Construction, Army National Guard (MCNG). The National Guard's request supports readiness by funding $139 million for Readiness Centers and $43 million for Maintenance Facilities. It also provides $13 million for Barracks.

Minor Construction/Planning & Design. All three components have funds planned for Unspecified Minor Construction and Planning and Design.

Army Family Housing (AFH). The Army's request for $92.3 million in construction funding supports one new/replacement project providing 130 new homes (Vicenza, Italy) and necessary planning and design funds. The Army's request for $391.2 million in Family Housing Operations funding provides for Army Family Housing operations, maintenance and repair, utilities, leasing, and management of our privatized housing as part of the Residential Communities Initiative.

Base Realignment and Closure (BRAC). The Army's request for $65.3 million includes $7.1 million for continuing caretaker and program management requirements at remaining BRAC installations closed or realigned under the five previous BRAC rounds (Legacy BRAC (1988, 1991, 1993 & 1995} and BRAC 2005) and $58.2 million for environmental cleanup requirements. Additionally, there is $21 million in prior year funds for Polyfluoroalkyl Substances (PFAS) cleanup requirements, a carryover from the $35 million PFAS funding provided in FY 2021.

Operation and Maintenance of Facilities

Facilities Sustainment, Restoration, and Modernization (FSRM). The Army is requesting $5.3 billion in FSRM to address our backlog of facilities maintenance and provide sustainment to slow degradation of facilities.

Army Sustainment. The Army's FY 2022 Facilities Sustainment request for $3,767 million (Active $2,832 million, USAR $255 million, ARNG $680 million) will provide 80% of the Facility Sustainment Model requirements for all Components. It will allow maintenance work orders on all facilities and preventative maintenance orders on Quality of Life and mission readiness facilities. Army intends to ramp to the Office of the Secretary of Defense goal of 90% of FSM in future years.

Restoration and Modernization (R&M), Active Army. The FY 2022 request for the Active Army is $1,142 million and will primarily fund restoration projects for barracks and Child Development Centers across the Army and readiness facilities at key installations.

Restoration and Modernization (R&M), Army Reserve. The FY 2022 request for the Army Reserve is $87 million and will primarily fund restoration projects for barracks, maintenance activities, and Reserve Centers.

Restoration and Modernization (R&M), Army National Guard. The FY 2022 request for the Army National Guard is $265 million and will primarily fund restoration projects for barracks and training facilities.

CONCLUSION

Army Readiness begins on our installations. We need ready and resilient installations to ensure our Soldiers are properly trained and can be deployed anywhere in the world in order to fight and win our Nation's wars. Your continued advocacy helps to ensure we will remain an attractive option for current and future generations who want to serve their Nation while maintaining the readiness of the current force.

Thank you for the opportunity to present this testimony and for your continued support of our Soldiers, Civilians, and Families.

J .E. "Jack" Surash, P.E.
Acting Deputy Assistant Secretary of the Army (Energy & Sustainability)

Mr. J. E. "Jack" Surash became the Acting DASA (E&S) in September 2016. In this position he is responsible for overall program direction, establishment of policies, development and refinement of strategies, and oversight for implementation of all programs and initiatives related to Energy Security and Sustainability within the Army. As the Army's Senior Energy Executive, Mr. Surash coordinates and integrates both installation (traditional as well as expeditionary) and operational energy programs and strategies.

He comes to the Pentagon from duties as the Senior Project Management Advisor at the Department of Energy's Office of Environmental Management (EM). Prior to that, he was the Deputy Assistant Secretary for Acquisition and Project Management. In that position, he led efforts for EM's $6 billion per year portfolio, served as EM's Head of Contracting Activity, oversaw procurement planning, contract management, and provided project management support. A native of Charlotte, North Carolina and raised in Rochester, New York, Jack has served the nation in key positions around the world.

Mr. Surash joined the Department of Energy as a member of the Senior Executive Service in 2005 as Director, Office of Infrastructure and Facilities Management at the National Nuclear Security Administration. He was also the Business Development Manager for Johnson Controls Inc., a Fortune 100 company, and Chief Business Officer for Miami-Dade County Public Schools, the 4th largest K-12 public school district in the U.S., where he was responsible for facilities planning, design and construction, maintenance, food service, and school bus transportation.

During a twenty-seven year distinguished Navy career, Mr. Surash served in a broad range of increasingly responsible facilities management, design, construction, contracting, and "Seabee" (Construction Battalion) assignments around the world. He commanded Naval Mobile Construction Battalion Seven and Navy Public Works Center San Diego. In an earlier assignment, he led a Seabee detail that supported the Army's 3rd Battalion 319th Field Artillery Regiment, in Honduras during Operation Ahuas Tara II. Mr. Surash retired at the rank of Captain from the United States Navy's Civil Engineer Corps.

Under his leadership, Navy Public Works Center San Diego received the California Eureka Award for Performance Excellence, Vice President Gore's Hammer Award, and the President's Quality Award for Quality Improvement (Malcolm Baldrige criteria). For actions during California electricity crisis, his Navy Region Southwest Regional Energy Team received a Presidential Award for Leadership in Federal Energy Management, and numerous other recognitions including an Energy Leadership Award from the San Diego Regional Energy Office and an Excellence in Energy Award from the San Diego Business Journal. In addition, Mr. Surash was presented the Department of Energy's Louis R. Harris Award for establishing one of the Federal Government's first resource efficiency management programs.

Mr. Surash holds a Bachelor of Science degree in Mechanical Engineering from the University of Rochester and a Master of Engineering degree in Mechanical Engineering, specializing in energy management, from Texas A&M University. He completed the Advanced Management Program at Duke University, Fuqua School of Business and the Executive Certificate in Management and Leadership Program at the MIT Sloan School of Management. Mr. Surash is a registered professional engineer.

NOT FOR PUBLICATION
UNTIL RELEASED BY THE
HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON READINESS

STATEMENT OF

MR. TODD L. SCHAFER
ACTING ASSISTANT SECRETARY OF THE NAVY
(ENERGY, INSTALLATIONS AND ENVIRONMENT)

BEFORE THE

HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON READINESS

JULY 14, 2021

NOT FOR PUBLICATION
UNTIL RELEASED BY THE
HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON READINESS

Introduction

Chairman Garamendi, Ranking Member Lamborn, and distinguished members of the Subcommittee, thank you for the opportunity to testify on the Department of Navy's Fiscal Year (FY) 2022 Budget Request for Energy, Installations and Environmental Programs.

As the Department of Navy (DoN) balances today's urgent readiness needs with investments in the future force and business reforms, we are compelled to make tough decisions regarding our current and future infrastructure. The DoN appreciates this committee's continued support of Navy and Marine Corps installations, which directly enable the lethality and warfighting readiness of our maritime forces.

Military Construction

The Navy's FY 2022 Military Construction (MILCON) request of $1.3 billion includes 14 projects, $258 million for planning and design, and $41 million for unspecified minor construction projects. This year's budget request contains five overseas MILCON projects, totaling $295 million, which will enhance the global reach and persistent presence of forward-deployed naval forces. FY 2022 continues the Department's commitment to our Shipyard Infrastructure Optimization Program (SIOP) to ensure the four public shipyards are ready and able to support the class maintenance plan for the Navy's current and future submarines and aircraft carriers. SIOP MILCON projects include a Dry Dock Saltwater System for USS GERALD R. FORD at Norfolk Naval Shipyard in Virginia and follow-on incremental funding for the Multi-Mission Dry Dock #1 Extension at Portsmouth Naval Shipyard in Maine.

The Marine Corps' FY 2022 MILCON request of $1.1 billion includes 15 projects, $112 million for planning and design, and $18 million for unspecified minor construction projects. Eight construction projects support the relocation of Marine Corps forces from Okinawa to Guam and provide facilities to meet current and future training requirements.

The Department is also investing in new platforms and technologies such as F-35 Flightline Utilities Modernization Phase II at Cherry Point Marine Corps Air Station Cherry Point in North Carolina and Directed Energy Weapons Test Facilities at Naval Base Ventura County, Point Mugu, in California. We are also replacing aging infrastructure such as the Submarine Pier 3 at Norfolk Naval Shipyard in Virginia and II Marine Expeditionary Force Operations Center at Marine Corps Base Camp Lejeune in North Carolina.

Facilities Sustainment, Restoration, Modernization (FSRM) and Demolition

The President's Budget request for FY 2022 funds the sustainment of Navy and Marine Corps facilities at 80% of the Department of Defense Facilities Sustainment Model. When sustaining our existing infrastructure, the Department prioritizes life, health, and safety issues and focuses on repairing only the most critical components of our mission-critical facilities. As we take this deliberate level of risk and repeatedly defer less-critical repairs, we acknowledge many facilities will continue to degrade and our facilities maintenance backlog will increase.

The Navy's FY 2022 request includes $613 million to restore and modernize existing infrastructure. This investment is focused on naval shipyards, utilities, hangars, waterfront structures, barracks and other Fleet priorities. The Marine Corps' facility restoration and modernization request includes $309 million to update and upgrade critical utility infrastructure, runways and taxiways, hangars and training facilities.

With the FY 2022 budget, the Marine Corps aims to divest of 2.3 million square feet of older, excess, and obsolete facilities contributing to the consolidation and right-sizing of the Marine Corps' facilities footprint to improve operational readiness. The Navy has no dedicated demolition funding in FY 2022 and is instead focusing limited resourcing to repair mission-critical facilities that immediately impact warfighter readiness.

Fallon Range Training Complex (FRTC) Modernization

The DoN appreciates this committee's continued attention to the urgent need to modernize the Navy's premier aviation training range, the Fallon Range Training Complex (FRTC) in Nevada. Naval forces must have the right facilities to train, fight, and win, even as various land, sea, and airspace demands reduce the available area for military training, and the FRTC plays a central role in the readiness of Naval Aviators and Navy Sea, Air and Land (SEAL) forces. Unfortunately, the existing footprint is simply too small to support training requirements for today's weapons. Our aviators are unable to sufficiently train with longer-range precision-guided munitions weapons and our SEALs cannot perform ground mobility maneuver training or fire their organic weapons in a realistic tactical environment.

The complex currently consists of 231,069 acres, of which 202,864 acres are public land withdrawn from the Department of the Interior (DoI) for military purposes. We appreciate that

Congress extended the existing withdrawal of 202,864 acres via the FY 2021 National Defense Authorization Acts (NDAA), but this withdrawal extension does not meet our training requirements as it does not accommodate the capability of precision-guided munitions, the aircraft that employ them, or realistic SEAL Team training. Failure to modernize the FRTC will degrade readiness as our aviators and SEALs will not be able to train as they would fight.

Earlier this year, the Department collaborated with the Secretary of the Interior to establish the FRTC Intergovernmental Executive Committee to obtain views of stakeholders on FRTC modernization and information relevant to the management of natural and cultural resources on the range. The committee consists of representatives from the DoN, DoI, the State of Nevada and five of its counties, and multiple interested Tribes. We are committed to working closely with Tribal governments, environmental organizations, and the local community to develop a solution that meets the desires of the local community while providing our warfighters a range complex that meets their critical training and readiness needs.

Privatized Family Housing

The Department's FY 2022 budget request sustains funding needed to ensure military members and their families receive safe, quality, well-maintained housing and fair treatment from the Military Housing Privatization Initiative (MHPI) companies that own, operate, and maintain the DoN's privatized housing. Over the past two years, all levels of leadership across the DoN have been laser-focused on improving the privatized housing experience for Sailors, Marines, and their families. Installation Commanding Officers are personally involved in resolving privatized housing issues and advocating for military families. Although work remains, we are beginning to see improvement in the operation, maintenance, and customer service provided by our MHPI partners. We have increased the number of DoN personnel in our housing offices to provide better oversight, quality control, and advocacy at the installation, regional, and headquarters levels. We have also made significant progress on near-term efforts to better advocate for Service members and their families, increase awareness of the problem resolution process, and increase involvement of the DoN government housing team.

The DoN continues to move forward with addressing the significant MHPI reforms in the FY 2020 and FY 2021 NDAAs. In February 2020, the Secretary of Defense and the Secretaries of the Military Departments signed a partial Tenants Bill of Rights which certified 14 of the 18

rights available to service members and their families through existing business agreements. As of June 1, 2021, the DoN's MHPI partners have implemented the seven-year Maintenance History, Dispute Resolution and Rent Withhold for the majority of our residents, and the Universal Lease is being rolled out as leases are executed or renewed.

Per- and Polyfluoroalkyl substances (PFAS)

We remain committed to the health and safety of our men and women in uniform, their families, and the communities in which we serve. Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) are organic chemicals that are part of a larger group of chemicals referred to as PFAS, which were used to make carpets, clothing, furniture fabric, food packaging, and cookware resistant to water, grease, or stains. At Navy and Marine Corps installations, PFOS and PFOA are also found in the Aqueous Film Forming Foam (AFFF) used for firefighting.

The Department's cleanup program plans to execute over $37 million in FY 2022 and has spent approximately $270 million through FY 2020 on PFAS investigations or response actions, ranging from sampling to drinking water treatment. We expect future costs for cleanup to increase as we complete our initial investigations and Environmental Protection Agency (EPA) and state guidance/regulations evolve.

The DoN is implementing a comprehensive strategy to manage and address known or potential releases of PFAS from DoN activities on Navy and Marine Corps installations through a multi-pronged approach:

- Ensuring Drinking Water Does Not Exceed EPA Health Advisory Levels on DoN Installations. Testing is complete at all Navy and Marine Corps installations to ensure drinking water does not contain PFOS/PFOA above the EPA's lifetime health advisory level.
- Eliminating PFOS or PFOA Drinking Water Exposure from Off-Installation Public Water Supplies and Private Wells. The DoN has proactively identified locations where PFOS/PFOA may have migrated to off-installation drinking water sources and gathered water samples from drinking water wells for testing. If drinking water contains PFOS/PFOA levels that exceed the EPA's lifetime health advisory level, we provide alternate water and seek a long-term solution.

- Investigating and Responding to PFAS Releases under the DoN Environmental Restoration Program. If we release PFAS during our firefighting or other operations, the DoN immediately takes action to respond to and mitigate the risks and impacts of the release.
- Replacing Legacy AFFF. The DoN is actively supporting DoD's research and development effort to identify suitable replacements to transition to a PFAS-free firefighting alternative on installations.
- Working closely and communicating early with the public and stakeholders. The DoN will continue open and timely communication with the public, regulators, and congressional partners.

Environmental Priorities

The Navy and Marine Corps take a proactive role in enhancing mission effectiveness through the thoughtful and deliberate implementation of environmental programs to meet our expanding mission requirements; to protect and improve the environment where we live, work and train; to avoid and reduce future liabilities; and to build trust and equity with our internal and external stakeholders. The Department's environmental program provides policy, resources, and oversight required to address legal compliance of Navy and Marine Corps operations/ installations with U.S. environmental laws and international treaties. Environmental programs consist of Planning, Compliance and Restoration, Natural and Cultural Resources Management, and Compatibility and Encroachment. Navy and Marine Corps environmental efforts support continued access to vital testing and training ranges through the implementation of mitigation to include environmental monitoring and research. The Department continues to focus its efforts on protecting the mission readiness of Navy and Marine Corps installations, ranges, and operating areas.

Installation Resilience

The FY 2022 DoN budget request continues our commitment to installation resilience as a crosscutting consideration integrated into our installation planning, environmental conservation and restoration, facility design and construction, and decision-making processes. DoN installations face environmental threats from natural disasters and climate change, as well as

risks to energy, water supplies, and industrial cyber control systems. Following the guidance in Executive Order 14008 and the newly established Secretary of Defense Climate Working Group, the DoN will continue to incorporate climate risk analysis into installation planning and deploy new solutions to strengthen the resilience of critical capabilities at installations and with the surrounding communities. We recognize the interdependencies between our installations and the surrounding communities, and we are looking beyond our fence lines to collaborate with local communities, States, other federal agencies, and industry leaders to develop regional plans that protect military capabilities.

Base Operating Support (BOS)

BOS is critical to the operations of all Navy and Marine Corps installations; it enables the warfighting readiness of Naval forces by providing security, safety, transportation, air and port operations, quality of life programs, logistics services command support, and facilities management. Funding levels for BOS at Navy and Marine Corps installations have remained essentially flat year-over-year; our Naval installations worldwide have absorbed this risk and continue to accept and adjust to low installation service levels.

Base Realignment and Closure (BRAC)

The Department's FY 2022 budget request includes $111 million for installations closed in previous BRAC rounds; $101 million of this is for environmental cleanup. The DoN has completed disposal of 95% of property (180,400 acres) with the remaining 5% representing 8,642 acres at 16 former installations. More than 40% of the remaining property is at two BRAC 2005 installations: Naval Air Station Joint Reserve Base Willow Grove in Pennsylvania and Naval Weapons Station Concord in California. 27 of 43 former installations have no property remaining for transfer and still require environmental cleanup or monitoring. PFOS and PFOA have affected public water supplies and private wells at multiple BRAC installations. In FY 2022, the Navy will continue investigations and/or cleanup actions at 40 former installations with known or suspected PFOS and PFOA.

We appreciate Congress' support of the environmental cleanup efforts at the former Hunters Point Naval Shipyard. Fraudulent contractor work delayed property transfers in support

of redevelopment, and extensive rework on low-level radiological cleanup that began in 2019 will continue.

Conclusion

I appreciate the ongoing commitment and attention of this committee, and I thank you for the opportunity to discuss the DoN's energy, installations and environmental portfolio. As we look forward to FY 2022, the Department will continue to seek ways enhance the warfighting capability of our Naval forces, increase the readiness of our warfighting platforms, and support quality of life for our Sailors, Marines, Civilians and their families.

Mr. Todd L. Schafer
Acting, Assistant Secretary of the Navy (Energy, Installations and Environment)

Mr. Todd L. Schafer, a Tier III member of the Senior Executive Service corps, serves as the Acting, Assistant Secretary of the Navy (Energy, Installations and Environment) [ASN (EI&E)]. He reports directly to the ASN (EI&E) and is the ASN (EI&E)'s principal advisor on delivering Fleet readiness and combat lethality through modernized shore infrastructure and test and training ranges. He is also responsible to the ASN (EI&E) for the oversight and policy for Navy and Marine Corps facilities sustainment, restoration and modernization; military construction; acquisition, utilization and disposal of real property and facilities; environmental protection, planning, restoration and natural resources conservation; and safety and occupational health; and recurring, independent, objective, and timely audits of the Department of the Navy's Public Private Partnerships.

Mr. Schafer began his career in 1989 as an Air Force Financial Management (PALACE Acquire) intern. His 30-plus years of experience incorporate policy making, requirements generation, planning, programming, budgeting, cost estimating/analysis, accounting and finance, human resources, manpower, contracting, cybersecurity, communications and computers, full spectrum military operations, program and risk management, modeling and simulation and transformation. His civilian leadership service spans the departments of the Air Force, Army and Navy. Assignments have been at the base, program office, acquisition center, major command, unified combatant command, military department, joint and coalition levels.

Mr. Schafer successfully defended budgets to Congress and the Office of Management and Budget. He has significant acquisition exposure and training. He is a skilled orator before senior leadership and large audiences. He brings a unique joint operational perspective to all his assignments. He has devoted his career to continuous learning, innovation and taking care of people.

EDUCATION:
1989 Bachelor of Science in Business, Management Science, Wright State University, Dayton, OH
1992 Master of Arts, Procurement and Acquisition Management, Webster University, St. Louis, MO
1996 Professional Military Comptrollers School, Maxwell Air Force Base (AFB), AL
1997 Master of Business Administration, Troy State University, Montgomery, AL
1997 Air Command and Staff College, Air University, Maxwell AFB, AL
2001 Executive Leadership Development Program, Washington, DC
2007 Defense Leadership and Management Program Graduate, Washington, DC
2010 Joint Executive Management Course, University of North Carolina, Chapel Hill, NC
2018 Intermediate Flag and Executive Course, Naval War College, U.S. Navy, Leesburg, VA

CAREER CHRONOLOGY:
1989 - 1993, Budget Analyst, Budget Division, Financial Management and Comptroller Directorate, HQ Air Force Communications Command, Scott AFB, IL
1993 - 1995, Budget Analyst, Program Analysis and Financial Management Directorate, United States Transportation Command, Scott AFB, IL
1995 - 1996, Supervisory Budget Analyst, Financial Management Branch, 88th Communications Group, Wright-Patterson AFB, OH
1996 - 1997, Student, Air Command and Staff College, Maxwell AFB, AL
1997 - 1999, Cost Analyst, Cost Division, Comptroller Directorate, Aeronautical Systems Center, Wright-Patterson AFB, OH
1999 - 2000, Chief, Program Control, C-5/KC-135 Development Systems Office, Mobility Systems Program Office, Aeronautical Systems Center, Wright-Patterson AFB, OH
2000 - 2003, Deputy Director, Home Office Division, Comptroller Directorate, Aeronautical Systems Center, Wright-Patterson AFB, OH
2003 - 2005, Director, Workforce Management, Office of the Assistant Secretary of the Air Force

(Financial Management and Comptroller), Pentagon, Washington, DC
2005 - 2007, Chief, Budget Operations Division, Office of the Assistant Secretary of the Air Force (Financial Management and Comptroller), Pentagon, Washington, DC
2007 - 2008, Executive Director of Programs and Resources, United States Southern Command, Miami, FL
2008 - 2012, Executive Director of Resources and Assessments, United States Southern Command, Miami, FL
2012 - 2013, Director of Management and Control, Office of the Assistant Secretary of the Army (Financial Management and Comptroller), Pentagon, Washington, DC
2013 - 2014, Executive Director for Resource Management and Procurement, Combined Security Transition Command - Afghanistan, International Security Assistance Force (ISAF), North Atlantic Treaty Organization (NATO), Camp ISAF, Kabul, Afghanistan
2014 - 2020, Executive Director and Chief of Staff, United States Pacific Fleet, Joint Base Pearl Harbor - Hickam, HI
2020 - Present, Principal Deputy Assistant Secretary of the Navy (Energy, Installations and Environment), Pentagon, Washington, DC

AWARDS AND HONORS:
1992 Secretary of Defense Medal for the Global War on Terrorism
1994 St. Louis Federal Executive Board's Employee/Quality Improvement
1996 and 1998 Notable Achievement Awards
1997 Member ASC Technical Excellence Team of the Year
2014 NATO Non-Article 5 Medal
2014 Department of the Army Superior Civilian Service Award
2020 Department of the Navy Distinguished Civilian Service Award

PROFESSIONAL MEMBERSHIPS AND AFFILIATIONS:
American Society of Military Comptrollers
Association of Government Accountants
Air Force Association
Senior Executives Association

PROFESSIONAL CERTIFICATIONS:
Certified Defense Financial Manager-Acquisition
Certified Government Financial Manager
Certified Acquisition Professional, Level III, Business, Cost Estimating and Financial Management95
88th Communications Group Civilian Manager of the Quarter

Department of the Air Force

Presentation

Before the House Armed Services
Subcommittee on Readiness

Installations and Engineering

Witness Statement of
Ms. Jennifer L. Miller
Acting Assistant Secretary of the Air Force for
Energy, Installations and Environment

July 14, 2021

Not for publication until released by the House Armed Services
Subcommittee on Readiness

BIOGRAPHY

JENNIFER L. MILLER



Jennifer L. Miller, a member of the Senior Executive Service, is the Acting Assistant Secretary of the Air Force for Energy, Installations and Environment, Headquarters Air Force, the Pentagon, Arlington, Virginia. Ms. Miller is responsible for the formulation, review and execution of plans, policies, programs and budgets to meet Air Force installations, energy, environment, safety and occupational health objectives.

Prior to assuming her current position, Ms. Miller served as the Deputy Assistant Secretary of the Air Force for Installations, Headquarters Air Force, the Pentagon, Arlington, Virginia. She was responsible for the management, policy and oversight of Air Force installation programs. These included base realignments and closures, installations planning and strategy, strategic basing, the Air Force Environmental Impact Analysis Process, compatible and joint land use, encroachment management, public/private partnerships, the Readiness and Environmental Protection Integration program, housing and real property transactions. She also previously served as Deputy General Counsel, Installations, Environment and Energy Division, Office of the Air Force General Counsel.

Prior to becoming a member of the Senior Executive Service, Ms. Miller spent several years supporting the Air Force's real property and housing privatization programs. Before that, she was a real estate attorney at a Seattle law firm. She is also an Army Reserve Judge Advocate. In 2013 and 2014, she deployed with a special operations joint task force in Afghanistan, and in 2018 and 2019, she served as the Deputy Staff Judge Advocate for United States European Command in Stuttgart, Germany. She currently supports United States Indo-Pacific Command exercises as an Operational Law Reserve Attorney.

EDUCATION
1997 Bachelor of Arts, Politics, Philosophy and Economics, magna cum laude, Claremont McKenna College, Calif.
2001 Juris Doctor degree, cum laude, Seattle University, Wash.
2001 Master of Business Administration, Seattle University, Wash.

CAREER CHRONOLOGY
1. 1997, Legal Intern, Smith & Zuccarini, P.S., Bellevue, Wash.
2. 1998–1999, Legal Intern, Kent City Attorney's Office, Kent, Wash.
3. 1999–2000, Tax Associate, Arthur Anderson, Seattle
4. 2000–2001, Legal Intern, Foster Pepper, PLLC, Seattle
5. 2001–2005, Associate, Foster Pepper, PLLC, Seattle
6. 2005–2007, Senior Counsel, Secretary of the Air Force/General Counsel - Air Force Housing Privatization (AFCEE/HP)
7. 2007–2008, Senior Counsel, SAF/GCN - Air Force Real Property Agency
8. 2008–2009, Chief Counsel, SAF/GCN - AFRPA
9. 2009–2011, Chief Counsel, SAF/GCN - San Antonio (AFCEE/HP and AFRPA)
10. 2011–2015, Deputy General Counsel, Installations, Energy and Environment
11. 2015–2020, Deputy Assistant Secretary of the Air Force for Installations
12. 2020–2021, Principal Deputy Assistant Secretary of the Air Force for Installations, Environment and Energy, the

Pentagon, Arlington, Va.
13. 2021–present, Acting Assistant Secretary of the Air Force for Energy, Installations and Environment, the Pentagon, Arlington, Va.

AWARDS AND HONORS
Presidential Rank Award
Meritorious Civilian Service Award
Bronze Star Medal
Meritorious Service Medal
Army Commendation Medal
Army Achievement Medal

PROFESSIONAL MEMBERSHIPS
District of Columbia Bar
Phi Beta Kappa

(Current as of January 2021)

Introduction

Installations are weapon systems. Every Department of the Air Force (DAF) mission starts and ends on an installation. We train and equip joint operations, project power, generate readiness, test new platforms, and provide safe and healthy communities at our Air and Space Force installations, which serve as key nodes in enabling Joint Force mission success around the world. More than 330,000 active duty personnel organize, train, and equip at DAF installations, and for thousands of Airmen, Guardians, and their families, installations also serve as their homes. The readiness and resiliency of installations is a matter of strategic importance.

Our Nation faces several challenges: the rise of great power competition with China and Russia, the increasing complexity of threats that emanate from several domains simultaneously, fiscal pressures, the rapidly increasing rate of technology change, and the fact that our installations are threatened in new ways. In particular, the rapidly changing climate and the growing strength and frequency of natural disasters endangers, not only our Airmen and the places where they live and work, but our weapon systems, defense infrastructure, and water and power networks.

The Fiscal Year 2022 (FY22) President's Budget Request supports the Interim National Security Strategic Guidance and lays out a plan to modernize our military capabilities. The Military Construction (MILCON) budget prioritizes nuclear enterprise modernization and Combatant Command (CCMD) infrastructure support in the European and Pacific theaters. The budget also funds high return-on-investment operational energy initiatives, including the optimization and modernization of legacy aircraft, which increases our readiness and provides more combat capability for every gallon of fuel consumed – while also mitigating greenhouse gas emissions. Furthermore, the budget provides for the wellbeing and quality of life of our service members and their families through investments in housing, dormitories, child development centers, and community support facilities. The result is a budget that supports installations capable of fulfilling mission requirements and the needs of our Airmen, Guardians, and their families.

Within the installations, environment, and energy portfolio, the DAF is facing numerous challenges that are influencing our investment decisions and budget execution. We are committed to overcoming these challenges and appreciate the continued help from Congress to address them and ensure the Air and Space Forces are enabled to defend the Nation and our allies.

Challenges

Installations

The DAF has continually accepted risk in installation investment as resources are prioritized to the most critical needs, ensuring the Service can continue to deliver combat capability to the Joint Force. Over time, this resulted in atrophied facilities and infrastructure with a deferred maintenance and repair backlog of more than $30 billion. More than 1,500 facilities are considered poor (Building Condition Index of 55 or less on a 100 point scale) and require significant investment. If left unchecked, the condition of infrastructure will impact the Department's ability to safely and effectively execute our mission. Additionally, atrophied facilities and infrastructure are more susceptible to effects of routine or severe weather events. This was evident at Tyndall Air Force Base (AFB) during Hurricane Michael in 2018 where facilities constructed more recently, using updated building codes, weathered the storm better than degraded or older facilities which were constructed under outdated building codes and subject to longer term deferred maintenance. We also observed this during recent severe winter storms across the United States. In many instances, degraded facility systems and components failed, which caused water and fire suppression liquids to freeze, expand, and eventually burst the pipes.

The DAF has also struggled to award MILCON projects in the year of appropriation. Sub-optimal design maturity, as a result of insufficient budgeting for Planning and Design (P&D), significantly contributed to cost overruns and drove the need to request additional funds or reprogram. Design maturity issues also led to the need to finish or re-design projects after funding was appropriated leading to additional cost increases and construction award delays. These delays have also left MILCON funds susceptible to rescission or reallocation.

Operational Energy

Our Joint Force wargames have highlighted the critical need to defend our energy networks at home and abroad, from our bases to forward deployed locations. Contested and competitive operating environments and the changing geopolitical landscape threaten our fuel and power supplies like never before. The DAF does not - and will not - have undisputed access to the substantial energy resources we require to operate around the world. In order to achieve our global mission, warfighters must have assured access to energy that is resilient to all hazards and threats.

Overcoming Challenges

The DAF is working to overcome these challenges through implementation of our Infrastructure Investment Strategy (I2S), increased senior leader oversight of the portfolio, and reforms within our MILCON program. First introduced in 2019, the I2S is the Department's long-term strategy to cost-effectively modernize and restore infrastructure readiness, improve the resiliency of mission-critical nodes, and drive innovation in installation management practices. This strategy informs efforts to optimize facility and infrastructure investment decisions and project prioritization within the MILCON and Facilities Restoration, Sustainment, and Modernization (FSRM) programs. The I2S also focuses on the recapitalization of facilities and infrastructure by identifying opportunities to reduce costly infrastructure in poor condition which no longer sufficiently meets mission requirements.

In an effort to leverage advanced infrastructure risk analytics, the DAF continues to develop predictive models which use current building condition information to advance requirements. As a result, the DAF developed our first five-year Integrated Priority List (IPL) for FSRM projects for the FY21-25 program and continues it this year. It is a key step in our intentional shifting from a "worst-first" prioritization approach to investing at the optimal time of the lifecycle for a facility, otherwise known as "sweet spot" investing.

The DAF senior leaders oversee I2S implementation efforts through the biannual Infrastructure Program Management Review, where we review and provide guidance on the direction of I2S initiatives. In order to assess the impact of funding and asset management practices on infrastructure readiness, the DAF developed a series of metrics. These figures show the impact of I2S policies on infrastructure condition, investment decisions, facility space use, and MILCON cost growth. Assessing the impact of I2S initiatives on a regular basis allows senior leaders to make timely decisions that affect not only execution of the program but future budget decisions as well.

In building the FY22 program, the DAF made great strides to build a mature, stable MILCON program to address award timeline issues and cost overruns. We defined 35% design criteria to ensure project documentation was consistent for every project, created a two-year program lock to stabilize the program and optimize P&D expenditures, and enforced admissibility criteria with requirement owners across the enterprise to ensure only ready projects were included in the budget proposal. The FY22 program includes only two projects (Royal Air Force

Lakenheath Weapons Load Training Facility and Munitions Inspection Facility) that did not meet the Financial Management Regulation 35% design milestone by August 31, 2020, but these projects reached 35% design on January 29, 2021, and are on track to award in the year of appropriation. Additionally, all projects exceeding $40 million include Design/Construction Agent cost assessments to further build confidence in our program and estimates. We were also able to address under-designed projects over the last year. We used a portion of our FY21 appropriation to provide funding to bring all previously authorized and appropriated projects to full design.

The I2S also recommends programming annual Maintenance and Repair (M&R) funding at a minimum investment level of 2% of Plant Replacement Value (PRV), with an ultimate goal of 2.3% of PRV, to reduce the growing backlog of deferred maintenance and restore our facilities and infrastructure. M&R is made up of our FSRM portfolio as well as the portion of the MILCON program that recapitalizes existing infrastructure. The baseline funding level for FY22 demonstrates our deliberate efforts to align our budget request to the I2S.

Energy

The DAF works to incorporate energy considerations into the strategic planning process while investing in energy Research Development Test & Evaluation. We aim to ensure the acquisition system values and enhances the energy supportability of future platforms and operations, considering a full range of resilient, cyber-secure, and sustainable energy solutions, including renewable energy technologies, to meet the needs of mission critical functions while decreasing energy demand where possible. Through exercises, wargames, and modeling and simulation, we are incorporating energy resilience into emerging joint operational concepts to better identify and mitigate risk.

Special Interest Items

Tackling the Climate Crisis

Secretary of Defense Austin recently released his top three priorities for the Department of Defense: Defend the Nation, Take Care of our People, and Succeed through Teamwork. He identified tackling the climate crisis as one of the lines of effort under the priority to defend the nation, elevating climate as a national security priority. Changing climate and severe weather events are a continual threat to our installations. As the largest fuel consumer in the DOD, the DAF is not only addressing the need for climate adaptation to improve our resilience, but

introducing mitigation efforts to optimize fuel consumption and reduce our logistics burden, while simultaneously reducing greenhouse gas emissions.

Over the past several years, we have seen first-hand the impacts climate and severe weather can have on our installations and operations. The DAF is smartly moving forward with rebuild efforts at Tyndall AFB, Florida, following the devastation caused by Hurricane Michael in 2018 and Offutt AFB, Nebraska, following historic flooding in 2019. We are also recovering from recent winter storms that brought extreme cold to much of the United States, impacting dozens of DAF installations.

In recent years, Congress has included numerous provisions in legislation to enhance installation resilience efforts across the Department of Defense. The DAF, in conjunction with the Office of the Secretary of Defense (OSD), is implementing these provisions. Climate and energy resiliency considerations are being incorporated into Installation Development Plans (IDPs). Last year, we published a Severe Weather and Climate Hazard Screening and Risk Assessment Playbook, which gives installation-level planners a consistent and systematic framework to screen for severe weather and climate hazards and assess current and future risks. We have completed initial assessments at all major installations and will be incorporating results into an Installation Resilience Component Plan for IDPs over the next several years. Additionally, we completed twenty four Installation Energy Plans by the end of CY20 to identify risks and track and adjust requirements to advance energy and water resilience goals. We expect to complete an additional twenty this year.

The DAF is incorporating resiliency directly into MILCON projects as well. All projects are assessed to determine if the planned facility could be impacted by current or future mean sea level fluctuations or if it is located in a 100 year floodplain. We implement mitigation actions to raise the elevation when required by the mission. One mitigation action example from Offutt AFB, addresses future flood concerns. As part of the rebuild of three critical campuses, we are importing approximately 600,000 cubic yards of fill material, or about 40,000 dump trucks, to raise the elevation of the entire site at least three feet above the 100 year floodplain. Additionally, the DAF provides inputs to drive changes to the Unified Facilities Criteria (UFCs) and then applies those evolving building codes to all MILCON projects. Many of these UFCs have been updated recently to specifically incorporate resilience considerations such as sea level rise scenario planning and updated structural engineering criteria to address wind, seismic, and flood threats.

The DAF is also incorporating operational energy efficiency initiatives to mitigate risk to the warfighter, increase lethality, and reduce our climate impact. We are working to implement a number of energy-informed solutions into operations that will increase aircraft range, streamline mission execution, and improve readiness, while also mitigating greenhouse gas emissions.

COVID-19

The COVID-19 pandemic has challenged the DAF to adapt to sustain our global operations. In particular, travel restrictions and social distancing measures affected personnel access at some installations, material production and delivery, and construction design reviews. Access and material production and delivery issues were alleviated as the world came to grips with the pandemic and markets and processes adapted to the new normal. The DAF adapted to design review challenges by utilizing virtual platforms to complete remote design reviews and charrettes, which typically require group gatherings, to prevent design delays and maintain quality reviews. Should any delays arise in the future, the DAF is prepared to work with our Design/Construction Agents and base level contracting professionals to address any Requests for Equitable Adjustments. While no significant requests for delay-driven compensation have arisen yet, contractors may quantify COVID-related costs in the future.

Additionally, the DAF is gathering data on potential footprint reductions resulting from implementation of long-term telework business models. We are looking at operational impacts and more subtle effects like DAF culture. The outcome of this analysis may inform future policy changes.

Winter Storms of 2021

Recent extreme winter storms throughout much of the Midwest and southern United States had a considerable impact on DAF installations. Initial assessments indicate some degree of damage at 28 installations. The DAF continues to assess the damage and will restore facilities to full mission capability.

A majority of the damage was the result of burst water and fire suppression lines due to freezing. Our personnel prepared our installations admirably, but numerous factors, including sustained periods of extreme cold, degraded facilities and infrastructure, and off-base power and water supply issues, led to damage and temporary interruptions. Several installations experienced limited power or water interruptions consistent with interruptions experienced by the local communities. Back-up energy sources and contingency plans, as well as effective coordination

with commercial power and water suppliers, were generally effective in minimizing the length and impact of utility interruptions. In some cases, such as at Offutt AFB, installations were able to use on-base power plants and generators to supply their own power. These efforts were instrumental in helping the utility provider stabilize the power grid and minimize rolling blackouts in the community.

Natural Disaster Recovery Efforts

In 2019 and 2020, Congress appropriated $3.6 billion for the recovery and rebuild of Tyndall AFB, Florida, from the devastation caused by Hurricane Michael, and Offutt AFB, Nebraska, from the effects of historic flooding. The funding will also enable construction at Joint Base Langley-Eustis, Virginia, to support the relocation of the F-22 Raptor training mission from Tyndall AFB. To date, the DAF has awarded five construction projects for $72 million. Design efforts continue for the rest of the program. The DAF expects to award an additional $2.25 billion of construction contracts by the end of 2021.

Through the Natural Disaster Recovery program, the DAF will rebuild these installations in a more efficient and resilient manner. Facilities are being designed and constructed using the latest Department of Defense building codes, or UFCs. In addition, given the extensive damage at Tyndall AFB, the DAF made a policy decision to design beyond the minimum UFC criteria for civil and structural engineering. The minimum design wind speed being used for all new facilities is 165 miles per hour, exceeding the highest wind speed captured during Hurricane Michael, and incorporates best practices from the Florida Building Code's High Velocity Hurricane Zone for Miami-Dade, Broward, and coastal Palm Beach Counties. Facilities are also being designed 14 to 19 feet above today's mean sea level, which incorporates a 7-foot projected sea level rise scenario through the year 2100. Additionally, coastal resiliency is one of the most important aspects to the plan at Tyndall. This partnered approach includes cost-shared investments which combine with DAF FSRM and MILCON investments to attenuate storm energy through natural infrastructure before it reaches built infrastructure. Key partners such as the Defense Advanced Research Projects Agency, Fish and Wildlife Service, Bay County, the Florida Department of Environmental Protection, and the University of Florida are working together as part of OSD's Readiness and Environmental Protection Integration Program on key initiatives. We are exploring several low life-cycle cost Engineering with Nature initiatives to include sand fencing, submerged shoreline stabilization, living shorelines, oyster reefs, and marsh

and seagrass enhancements. At Offutt AFB, we are consolidating facilities to higher ground out of the 100-year floodplain. Where relocation is not possible due to mission requirements, we are raising the finished floor elevation above the floodplain and building in a way to minimize clean-up should flooding occur again.

Taking Care of People

In December 2020, the Chief of Staff of the Air Force, General Charles Q. Brown, released a series of action orders providing guidance to implement his strategic approach, "Accelerate Change or Lose." The first action order focuses on Airmen. If the Service is to ensure it has a quality future force where Airmen see continued service as an attractive career choice, we must consider the environments we provide for these Airmen and their families at DAF installations. Taking care of Airmen, Guardians, and their families is not just about quality of life, it is also about readiness. It is at the forefront of ensuring the DAF can continue to provide critical warfighting capabilities to the Nation. Two programs with direct ties to quality of life are Child Development Centers (CDC) and dormitories.

In early 2020, the DAF established a cross-functional Child Care Capacity Initiative Working Group to address unmet child care needs. This team has prioritized child development and school age care facility projects based on unmet childcare demand, staffing, and building conditions. We issued a Strategic Enterprise Executive Decision memo directing installations to initiate planning actions for 14 projects identified on the prioritized list. The DAF is using the $11 million in MILCON P&D funds provided in FY20 to initiate designs and posture these projects for future execution. Five of our top priority CDCs – Sheppard AFB-Texas (TX), Joint Base San Antonio (JBSA) – Lackland-TX, JBSA – Fort Sam Houston-TX, Wright Patterson AFB-Ohio, and Royal Air Force (RAF) Lakenheath, in the United Kingdom – will be ready for execution in FY22. The Sheppard AFB CDC is included in the FY22 budget request. The fifth CDC at Royal Air Force Lakenheath in the United Kingdom is required due to the new F-35A mission bed down. CDCs historically have not competed well against other mission-related priorities in the MILCON program. We are addressing childcare facility concerns with FSRM while MILCON projects are being postured for future execution. Nine FSRM projects, valued at $37 million, are in development and will be ready for award in FY22.

The DAF is also committed to ensuring unaccompanied service members are provided quality housing on our dormitory campuses. The Department has re-emphasized the roles and

responsibilities of commanders in protecting the health and safety of unaccompanied Airmen and Guardians. Commanders are responsible for enforcing inspection criteria to identify and report conditions requiring immediate and future maintenance, as well as sustaining an adequately resourced maintenance and repair program to effectively address requirements. Funded from the DAF FSRM account, the investment strategy for dormitories focuses on restoration and modernization of these facilities in their existing configurations. This strategy will ensure the Service continues to meet the Department of Defense goal of 90% adequate dormitory rooms for permanent party unaccompanied Airmen and reduce the requirement for replacement construction. This enables the DAF to focus MILCON funds on modern, formal training facilities for newly recruited Airmen, such as the Airman Training Center at JBSA, Lackland, Texas, included in the FY22 budget request.

Space Force

The FY20 NDAA established the United States Space Force (USSF) as the sixth branch of the armed forces. In accordance with Department of Defense direction that the Space Force be established as a lean, agile, mission-focused military Service, the Space Force will rely on the Air Force for infrastructure, logistics, security, medical services, and a host of other support functions. Formal agreements and implementation plans are being finalized to codify all stakeholder roles and responsibilities. From an installation engineering perspective, Air Force civil engineer squadrons will continue to support Space Force installations as they did prior to establishment of the USSF. Air Force Material Command's Air Force Installation and Mission Support Center will provide enterprise level support for all installation and mission support programs and processes. In FY22, the DAF will transfer FSRM, unaccompanied housing, and facilities operations funds to the Space Force for execution. MILCON authorization is expected to be transferred to the Space Force by FY24. The Space Force is in the process of developing a separate governance process, leveraging current Air Force processes, to ensure strategic alignment of investments to Space Force priorities.

FY22 MILCON Program

In FY21, the DAF focused on MILCON program stability to ensure we are postured to award projects in the year of appropriation. Having improved policy to correct these measures in FY21, the DAF expects the future programs to return to a level similar to funding requests from previous years. In FY22, the DAF MILCON request is $2.38 billion, approximately double the

FY21 enacted amount. This return to previous funding levels will support the DAF's commitment to fulfilling National Defense Strategy requirements and posturing for the future high-end fight.

The FY22 MILCON program supports Combatant Commanders with a focus on the Pacific and European theaters and modernizing the nuclear enterprise. Our request also focuses on P&D to reinforce the Department's MILCON program stability and consistency. Additionally, the MILCON program continues efforts to bed down new weapons systems and seeks to recapitalize facilities that have outlived their useable life or no longer meet mission requirements.

Combatant Commander Infrastructure

The FY22 MILCON program prioritizes Combatant Commander requirements with a particular emphasis on the Pacific and European theaters. Support to Indo-Pacific Command will enhance the United States defensive posture in the region, reassure allies and partners, and increase readiness capabilities. The request includes $545 million for projects in Alaska, Guam, Japan, and Australia to recapitalize key facilities, disperse resources, and construct operational facilities as well as Pacific focused P&D. The request includes the construction of three warehouses to store pre-positioned Airfield Damage Repair equipment and materials in Guam and Japan, aircraft operations and maintenance facilities in Australia and Japan, munitions storage structures in Guam and Japan, and a runway extension to increase airfield capacity in Alaska.

The DAF remains committed to European Defense Initiative (EDI) efforts to reassure North Atlantic Treaty Organization allies and other European partners of United States commitment to collective security and territorial integrity. In FY22, the DAF requests $162.4 million for EDI and other European theater projects to include support for the prepositioning of equipment in the United Kingdom, and airfield upgrades in Hungary and Spain. These projects will further improve deterrence efforts in the theater and enable joint and coalition forces to quickly respond to aggressive regional actors. The DAF request also includes support to CCMDs within the United States to include a continued focus on Weapons Generation Facilities and Joint Air Defense Operations which directly supports Strategic Command and Northern Command, respectively.

New Mission Bed Downs

The FY22 budget request also supports the bed down of new weapons systems and missions, with a heavy focus on modernizing the nuclear enterprise. The request includes six projects at Ellsworth AFB, South Dakota, to bed down the first B-21 Raiders and three projects at

Hill AFB, Utah, and Vandenberg AFB, California to support the transition from the Minuteman III intercontinental ballistic missile weapon system to the Ground Based Strategic Deterrent (GBSD). The NDS directs the Department of Defense to build a more lethal force by modernizing key capabilities, the first of which are nuclear forces. Once on-line, these weapons systems will ensure the DAF can effectively supply two thirds of the nation's nuclear triad well into the future.

The DAF is appreciative of the legislative authorities which posture the Ground Based Strategic Deterrent (GBSD) program for success. The FY21 NDAA provided significant flexibility for the Launch Facility/Launch Center conversion under MILCON authorization, authorized $15 million of MILCON P&D for GBSD, enabled all GBSD construction to be carried out under direction and supervision by the Secretary of the Air Force, and allowed a single prime contractor to plan, design, and construct all GBSD projects. Furthermore, it established authorization expiration in 15 years or until GBSD fielding is complete (whichever is earlier), and allowed grouping of MILCON projects within each missile base and encouraged grouping by squadron. The DAF will continue to inform Congress on the Department's progress during design, construction, and commissioning of GBSD facilities.

The FY22 President's Budget also requests funding for two projects at Royal Air Force Lakenheath to construct operational facilities for the F-35A bed down. Additionally, the request re-integrates two F-35A project at Luke Air Force to provide flight training and planning space and additional maintenance capacity. Lastly, the budget request includes a three-bay depot maintenance hangar at Tinker AFB, Oklahoma to directly support reliable and responsive infrastructure for the KC-46A weapons system.

Existing Mission Recapitalization

The FY22 budget request also seeks $447.4 million to recapitalize facilities that have outlived their useable life or no longer meet mission requirements. This request includes additional funding for our Basic Military Trainee Recruit Dormitory modernization, to include reinserting Dormitory 7 back into the program at JBSA-Lackland, Texas. The Air Force previously cancelled Dormitory 7 to cover funding disconnects with the other dormitories in the program, but in FY22, the time is right to bring this requirement back into the budget to construct the final dormitory required for bringing new Airmen into the Service. Other recapitalization projects include the Nuclear Command Control and Communications Acquisitions Management Facility at Hanscom AFB, Massachusetts, which provides a critical facility for the Air Force Nuclear Weapons Center,

a crash fire rescue station at Joint Base Andrews, and a gate project at Davis-Monthan AFB, Arizona.

Planning and Design

P&D remains a central focus of the DAF MILCON program to reinforce program stability and consistency. Sufficient P&D enables projects to progress rapidly through design and meet maturity criteria for admissibility into the program, provides more accurate cost estimates, and maximizes opportunity to award projects in the year of appropriation. Without sufficient P&D, the DAF must award designs by design phase, which adds risk associated with costs and timely delivery of design. With the FY22 P&D request of $229.3 million, the DAF intends to complete remaining design requirements for our FY22 program, fully fund designs for our planned FY23 and FY24 projects, and initiate design for FY25. Our two year budget lock policy outcome is a stable MILCON program allowing us to efficiently use P&D for future projects.

Facilities Sustainment, Restoration, and Modernization (FSRM)

The FSRM and MILCON programs are interdependent. Together, these two funding streams are the foundation of DAF installations. FSRM provides a non-MILCON pathway to repair facilities and infrastructure maximizing their lifespan. The FY22 budget request of $4.55 billion in FSRM funding is a 20% increase from FY21 enacted levels. The increase shows our deliberate focus on ramping funding toward the I2S recommended floor of 2% of PRV to address degrading infrastructure.

Our I2S drove changes in how we execute the FSRM program by prioritizing projects based on mission risk and timing investments at the optimal point in the asset lifecycle. The centralized FSRM scoring model targets investments at an asset's "sweet spot" in its life cycle rather than at end-of-life failure, which is significantly more expensive. FSRM funding distributed directly to installations (considered decentralized FSRM), empowers Commanders to make the right local investment decisions, including day-to-day maintenance and smaller scale repair and sustainment projects, based on mission requirements and I2S guidance.

In FY22, the DAF will continue to utilize I2S principles to restore the health of our installations by refining business processes and implementing private sector best practices. These include implementing cost management strategies specific to different spending categories, leveraging data to improve the timing of sustainment and recapitalization actions, and establishing standards of services and equipment to achieve economies of scale. In order to maximize the near-

term impact of current funding levels, the DAF will continue to assess mission thread vulnerabilities and prioritize infrastructure repair requirements which directly affect an installation's primary mission.

Housing Construction and Operations and Maintenance

The DAF prioritizes providing safe and healthy homes to our families. The FY22 budget request seeks $441 million for housing construction, P&D, and operations and maintenance. These funds will support a continued focus on eliminating inadequate housing from the DAF inventory and correcting health and safety deficiencies. The military family housing construction request of $116 million will fund planning studies and design for future construction projects, renovation of existing homes, and support the restructures of privatized housing projects.

The high cost of construction in the Pacific, specifically on Okinawa, Japan, continues to present challenges where the DAF is the executive agent for more than 7,800 family housing units. The increased cost of construction requires solutions within the DAF family housing construction program to include cancelling projects that are no longer necessary due to European posture changes and using existing resources to achieve full scope on multiple projects. The DAF continues to focus investment in the Okinawa housing inventory to provide adequate housing for all service members and their families residing on the island.

Our military family housing operations and maintenance request of $325 million will fund efforts to sustain, improve, and modernize our Government-owned inventory of approximately 15,200 family housing units and provide enhanced oversight of over 55,000 privatized homes. The additional $20 million in Family Housing Support and Management funding provided in FY21 will ensure continued support for the housing needs of Airmen, Guardians, their families, and our Army, Navy and Marine Corps teammates housed in government-owned and privatized inventory.

Environmental Stewardship

The safety and health of our Airmen and Guardians, their families, and our community partners, is a DAF priority. To meet our obligations to protect human health and the environment, the FY22 PB request includes $302 million in funding for Environmental Restoration activities associated with the cleanup of current installations, including munitions sites, and $459 million for Environmental Quality programs including environmental compliance, environmental conservation, and pollution prevention. These funds ensure environmental considerations are successfully integrated into the DAF mission. The DAF greatly appreciates Congressional support

for our efforts to address per- and polyfluoroalkyl substances (PFAS) and continue Environmental Restoration Program progress.

Environmental Restoration

The DAF remains focused on completing investigations and establishing remedial actions to reduce risk to human health and the environment in a risk-based, prioritized manner for all substances where DAF actions have impacted the environment. We currently have approximately 13,000 restoration sites at our active and closed installations. Recently, much of our restoration program focus has been on chemicals of emerging concern, most notably, PFAS.

The DAF began using aqueous film-forming foam (AFFF) containing PFAS in 1970. The DAF funds and executes environmental response actions to address its PFAS releases under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). We are committed to following the CERCLA process to address PFAS impacts attributable to DAF activities and continuing to partner in good faith with local communities, state regulatory authorities, federal interagency partners, and Congress to tackle this national issue.

DAF PFAS Strategy

The Environmental Protection Agency (EPA) has established lifetime drinking water Health Advisories (HAs) for two PFAS, perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). The DAF PFAS strategy focuses first and foremost on assuring no one on or off our installations is drinking water with DAF-related PFOA or PFOS above the EPA HAs, and second on using CERCLA authorities to investigate, define and ultimately remediate groundwater and soil impacted by DAF activities. The DAF also conducts a robust effort to communicate and collaborate with local communities, State and Federal agencies and elected officials at all levels. Recognizing the DoD is only one source of PFAS, we are actively engaged with other government agencies working to identify and address other sources, exposure pathways for humans and the environment, and health effects of PFAS. The DAF framework guiding our response to PFAS issues are Protect Human Health, Communication and Collaboration, and a Whole of Government Approach.

The first objective, Protect Human Health, is the broadest and has the primary budget impact. Within this objective, the DAF is using authorities granted under CERCLA and the Defense Environmental Restoration Program to conduct off-base drinking water testing and response actions related to PFAS. In prioritizing CERCLA environmental response actions, the

DAF uses a risk-based decision-making process with protection of drinking water as a top priority. Although the DAF does not program restoration funds by chemical, as of March 2021 it had spent $685 million identifying, investigating, and responding to PFAS releases, completing drinking water response actions at 33 installations (implementing bottled water, point-of-use filtration, whole-house filtration, municipal water supply hookup), and completing initial PFAS CERCLA site inspections at 38 installations. Our FY22 budget submission includes sufficient funds to complete the remaining site inspections. As of March 2021, the DAF had awarded remedial investigation contracts for 47 total force installations. While the DAF takes quick actions under CERCLA to address drinking water, long-term responses to address groundwater can take potentially decades.

Environmental Quality

The DAF ensures a resilient natural infrastructure and maintains sound environmental stewardship by funding compliance with environmental laws. The environmental compliance program focuses on regulatory compliance for our air, water, and land assets. Examples of compliance efforts include detailed air quality assessments to analyze environmental impacts from DAF activities, protecting our groundwater by enhancing the management of our underground and above ground storage tanks, hazardous waste management and disposal, and ensuring environmental plans and permits are compliant and up-to-date.

Efforts in pollution prevention include maximizing the diversion of solid waste from landfills to reduce the volume and cost of disposal, recycling used oil, fluorescent light bulbs, spent solvents, and supporting our hazardous materials pharmacies to effectively reduce and safely manage the use of hazardous materials. We also continue to protect the health of our Airmen, Guardians, and the environment by making investments to minimize hazardous materials usage and hazardous waste disposal through the demonstration and validation of new technologies.

We remain firmly committed to a robust environmental conservation program. Prior appropriations have allowed the DAF to invest in conservation activities on and around our training ranges that provide direct support to mission readiness. The conservation program in FY22 supports ongoing habitat and species management efforts for 123 threatened and endangered species on 54 DAF installations and provides for continued cooperation and collaboration with other government agencies like the U.S. Fish and Wildlife Service. These partnerships help us to provide effective ecosystem and habitat management, including wildland fire management, which

helps avoid losses in our capability to support the military mission due to the presence of endangered species on our installations. Working collaboratively with the Fish and Wildlife Service in the DoD Recovery and Sustainment Partnership, the DAF enhanced mission operations and increased range access while protecting endangered species by facilitating the down-listing or delisting of six threatened or endangered species over the last two years.

The DAF remains committed to responsible environmental restoration and quality. As trustee for more than 8.3 million acres of land including forests, prairies, deserts, wetlands, and coastal habitats, the DAF understands the important role natural resources play in maintaining our mission capability. To maintain military readiness the DAF needs realistic test and training environments, which themselves are ecosystems. Quite simply, if we do not maintain the ecosystems we need to test and train and clean up the impacts of past mission activities, we will not be able to maintain military readiness.

Installation Energy and Water Resilience

Energy and water are essential resources that often require long, complex, interdependent, and vulnerable logistics tails. The DAF must have reliable power and water to accomplish both operational and training missions. As stated in the DAF Installation Energy Strategic Plan, which was released in January 2021, the overarching vision for the DAF's installation energy and water program is "Mission Assurance through Energy and Water Assurance." This vision is focused on securing the ability to perform our warfighting mission in the face of disruptions to traditional sources, while simultaneously optimizing energy and water availability and productivity through better planning, technology, and process improvements. The DAF is actively pursuing investments in clean energy generation and improvements in energy efficiency as a way to enhance it energy resilience.

When assessing near-and long-term energy and water infrastructure needs and requirements, the DAF emphasizes resilience, or the ability to continue operating in the face of challenges and bounce back from adversity, while carefully considering cost and factoring in the ability to leverage clean sources. From the DAF's perspective, all energy and water projects must improve resilience in some capacity across the spectrum of robustness, resourcefulness, redundancy, response, and recovery. Projects to improve resilience may include initiatives such as microgrids, clean energy generation, or energy conservation efforts.

Installation Energy Resilience

Energy enables DAF missions. The DAF Installation Energy Program focuses on ensuring Air and Space Force installations have the energy required to fight from our critical bases, at all times, no matter the circumstances. The DAF is therefore committed to reducing installation energy vulnerabilities through the incorporation of the five key resilience attributes, the "5Rs," in assessing gaps, prioritizing energy projects, and ensuring enabling system investments are effective in supporting mission needs. The "5Rs" help describe how a system plans for crises (preventative attributes: robustness, redundancy, and resourcefulness) and how the system performs in the event of crises, dependent on risk, events, and time (performance attributes: response and recovery).

One key focus area is to address the growing risk associated with natural hazards or adversarial threats that may result in a denial of service, such as missions being separated from the bulk power grid as well as the increasing potential for long-duration power outages. Using a mission threat perspective, the DAF is working to identify key nodes on and off installations that, in a denial of service scenario, may result in a significant impact on the DAF's ability to deliver key capabilities. This begins with a comprehensive understanding of mission requirements and current system operations. Additionally, through increased situational awareness and more accurate reporting of outages, the DAF is using historical data on past power outages to better understand the causes and impacts of such outages. Through increased investment in, and improved maintenance of, these energy systems, the DAF is striving to decrease the number of outages on installations.

Finally, the DAF has partnered with the Office of the Assistant Secretary of Defense for Sustainment and the Massachusetts Institute of Technology Lincoln Laboratory to develop a comprehensive Energy Resilience Readiness Exercise (ERRE) framework to baseline installation power resilience capabilities and validate vulnerabilities, requirements and system enhancements. ERREs are also referred to "pull-the-plug" and "black start" exercises throughout the defense industry. Thus far in FY21, the DAF has completed one ERRE at Joint Base McGuire-Dix-Lakehurst in New Jersey, bringing the DAF total to three ERREs, and commenced planning for two additional exercises at Eielson and Wright Patterson AFB in CY21. The DAF has created supplemental guidance to provide lessons learned and best practices that enable installations to conduct their own ERREs once an initial exercise has been conducted on site.

Water Resource Management

The DAF is placing a new emphasis on water resilience, recognizing that water is essential to mission sets yet is under increasing pressure. Threats to water availability include aging infrastructure, water scarcity, malicious attacks and natural hazards, changes in climate, rising costs of supply, quality issues, and encroachment. The DAF is taking a risk-based approach to water management and linking water security more directly to mission assurance, with activities focused on increasing transparency into mission needs and readiness, identifying and assessing water risks comprehensively, expanding external stakeholder engagement, and analyzing capability gaps and developing mitigation strategies.

Installation Energy and Water Planning

Installation Energy Plans (IEPs) are a standardized framework for all DAF installations to advance their energy and water goals and ensure resilience to meet critical mission assurance using the "5R" framework. The DAF completed 24 Installation Energy Plans through the end of CY20, and is on track to finalize IEPs for all priority installations and the top 75 percent of energy-consuming installations by the end of FY22. To address the installation energy and water vulnerabilities identified through the IEPs, "pull-the-plug" exercises, and mission thread analyses, the DAF had over 125 resilience initiatives in development across the enterprise at the start of FY21.

Financing Energy and Water Infrastructure

The DAF Installation Energy Program does not have a dedicated budget line; rather, it relies on direct investment, third-party financing, and innovative funding solutions. Direct investment typically comes from the Facility Sustainment, Restoration and Modernization (FSRM) account or the Energy Resilience and Conservation Investment Fund (ERCIP), while third-party financing includes such vehicles as Energy Savings Performance Contracts (ESPCs) and Utility Energy Service Contracts (UESCs). In total, the DAF awarded one ESPC project and modified three contracts totaling $75 million in CY20.

The DAF is also continuing to explore innovative funding solutions, such as our development of Energy-as-a-Service business model pilots at Hanscom AFB and the Resilient Energy Savings Resource Vault (RESRV), which leverages authorities provided by Congress under Title 10 USC 2912.

Industrial Control Systems Cyber Resilience

Industrial control systems are essential to DAF core missions as they support critical infrastructure that enables mission capabilities across the enterprise. Technological advancements have created more efficient control systems but have also opened up additional avenues for adversaries to attack. In compliance with the National Defense Authorization Act (FY) 2017, we have conducted assessments of critical infrastructure to identify vulnerabilities. These assessments have exposed risks to missions that the DAF was unknowingly accepting and validated the mitigation measures we were already pursuing to increase control systems' cybersecurity and resiliency. The DAF is developing the Strategic Plan for Control Systems to reduce system vulnerabilities and published the Department of the Air Force Instruction 90-1701, *Installation Energy and Water Management*, which requires energy and water control systems become more cyber-secure.

Privatized Housing

The Department of the Air Force, with the support of Congress, has taken substantive actions to address the concerns and make meaningful, enduring changes to our privatized military housing program. The FY20 and FY21 NDAAs identified measures to improve privatized housing. Nearly all of the Air Force's MHPI companies have agreed to implement all eighteen tenant rights at their existing projects, and with few exceptions, we expect these rights to be fully available at Air Force installations with privatized housing by the end of FY21.

Some highlights regarding the improvements the DAF implemented last year include increased program and project oversight. The DAF added 147 authorizations to increase installation-level oversight. These additional personnel are receiving training to conduct change of occupancy inspections consistent with national industry standards. Additionally, the DAF added 60 authorizations to provide Resident Advocates to directly support residents ensuring they have multiple avenues to raise and resolve issues. Resident Advocates report directly to the wing leadership to increase commander awareness of concerns raised by residents. The DAF has also added 11 authorizations for Headquarters DAF, Air Force Civil Engineer Center and our legal staff. Finally, the Department instituted a revised governance structure to review programmatic and systemic issues, best practices, and financial health of the program. The revised governance structure culminates with a council that includes the uniform chain of command and is advised by

military housing office professionals. Overall, the DAF added 218 authorizations and to date has filled all 218 positions to improve oversight, quality assurance, and advocacy at all installations.

The DAF also approved a revised performance incentive fee (PIF) framework to increase both the commander and resident voice in assessing earned PIFs. The new performance incentive fees will improve tracking and reporting of maintenance operations at each project. The DAF is in the process of re-negotiating the PIF framework with project owners, reaching agreement with two of the nine project owners that have a PIF as part of their agreements. As part of the DAF's plan to increase transparency and accountability, all the project owners implemented automated work order systems, allowing residents to submit electronic work orders, schedule repairs, and provide satisfaction feedback. Lastly, the DAF centrally contracted for the annual tenant satisfaction survey, coordinating with the Army and Navy to ensure a consistent survey DoD-wide as well as issuing the survey to collect resident input from both privatized and government owned housing.

While we have made progress on compliance and oversight, there are some projects that are not financially healthy. We are planning to restructure several under-performing projects to ensure long-term sustainment. There is still more work to accomplish to ensure quality and safe homes for our Airmen, Guardians and their families. Therefore, the DAF continues to remain focused on improved oversight, long-term project health, and sustainment of the housing inventory to provide military families access to safe, quality, affordable, and well-maintained housing communities where they choose to live.

Base Realignment and Closure (BRAC)

The FY22 PB request includes $101 million for the BRAC cleanup program to fund environmental restoration and property transfer activities at 35 former DAF installations closed through prior BRAC initiatives. Our BRAC cleanup program focuses on protecting human health and the environment, projects that transfer acreage and achieve beneficial reuse of property, and investigations and response actions associated with PFOS and PFOA. Through the BRAC process the DAF has closed 40 installations and sites and transferred more than 98% of the property back to communities for beneficial use, producing $2.9 billion in annual savings. Property transfer is complete for 34 former installations, and we expect to complete transfer of fewer than 2,000 acres at the remaining six former installations by 2027. The DAF greatly appreciates Congressional

support for our efforts to address PFOS and PFOA and continue the cleanup and transfer of BRAC properties.

Operational Energy

As a critical enabler to our global mission, operational energy (aviation fuel and energy to power aircraft) comprised over 82% of the $4.6 billion Air Force energy bill in 2020. To remain ahead of our adversaries in a complex and ever-changing battlespace, the DAF continues to develop a more agile and optimized approach to powering our aircraft and providing Airmen with fuel when and where they need it. In FY22, the budget provides $49 million in funding for the research, development, acquisition, and operation of modern technologies, data analysis, and innovative process improvements that will enhance our combat capability, mitigate operational risk to the warfighter, and work to reduce our climate impact.

Optimal Operations Planning and Data Collection

The DAF is improving enterprise-wide fuel use data collection and conducting analyses to identify areas where existing missions can be performed more effectively with fewer resources. We work with stakeholders across the DAF and DOD to implement efficiency best practices, support modernized information systems and software applications, and optimize mission planning and execution to maximize combat capability.

Our real-time data analysis capabilities have facilitated greater visibility into Air Force fuel use and have uncovered numerous opportunities to enhance operations through the efficient application of resources. For example, our analysis of C-17, KC-135, and B-52 data models correlates precision fuel planning (optimized fuel loads specific to each mission) with reduced maintenance costs and improvements in readiness metrics such as aircraft availability. Data analysis also allows us to assess the effects of energy optimization on combat capability in warfighting scenarios and demonstrates more efficient air refueling not only decreases fuel demand and sortie requirements, but enables greater fuel offload, effectively doubling the efficiency gain.

Through 21st century tools and software, the DAF has established a pipeline to record and collect flight and fuel use data from multiple sources, enabling us to work with stakeholders across platforms and datasets. The collaborative environment allows us to better analyze operations, optimize aircraft fuel and load planning, and identify efficiency best practices to maximize aircraft reach and readiness. The recently developed software application "Magellan", a long-range

allocation and scheduling tool, now serves as Air Mobility Command's (AMC) system of record for the Readiness Driven Allocation Process. The tool provides a single source and secure collaborative platform for the allocation of global mobility assets at AMC, optimizing processes and increasing the combat and training effectiveness of each aircraft.

The DAF anticipates the active fielding of an auto-planning capability within the tanker planning tool Jigsaw, to further optimize resource allocation and improve asset availability for the Combined Air Operations Center at Al Udeid Air Base, Qatar. Testing indicates the supplementary feature will improve the fuel efficiency of tanker plans by an additional 10 percent from Jigsaw's baseline - the equivalent of removing 10 tankers from the average Air Tasking Order, which would enable crew reallocation and save approximately 400K gallons of fuel per week.

The live, collaborative scheduling platform Puckboard is available to service members around the globe, supporting immediate forecasting decisions. The tool streamlines the aircrew scheduling process through secure remote access and will incorporate machine learning to automate and optimize a previously manual intensive process.

The DAF identified cargo load planning to be a recurring problem that hinders optimization of global airlift missions. We worked with stakeholders at Air Mobility Command and Air Force Institute of Technology to identify elements of cargo planning that could be improved across the Air Force. With optimized cargo load plans, comes more efficient flight operations, and the possibility to decrease fuel use by maximizing loads using fewer aircraft.

Additionally, the DAF is creating an incentive for planners and operators to use fuel more efficiently. We created the Mission Execution Excellence Program (MEEP) to promote a DAF culture of energy-awareness by incentivizing energy-optimized best practices, often utilized in the commercial aviation sector. This competitive, voluntary pilot program will encourage Airmen to apply fuel efficiency processes and behaviors during their day-to-day operations to save the DAF millions of dollars per year in unnecessary aviation fuel costs. Additionally, the decreased fuel use has a secondary benefit of avoiding an estimated 267 thousand metric tons of greenhouse gases per year from entering the climate. Future savings will be reinvested in tools and programs that enable efficient and resilient operations.

Finally, under the authority provided by Congress in Title 10 U.S.C. 2912, the Air Force is implementing the Operational Energy Savings Account (OESA) program to further incentivize energy-aware behavior and processes. By documenting fuel savings from previous operational

energy initiatives, OESA allows those funds to be re-invested in other optimization efforts making it a self-sustaining program.

Weapon System Sustainment

The DAF depends on the readiness of our weapon systems to maintain global reach and power. Through partnerships with the aviation and commercial industries, we identify innovative solutions to modernize legacy aircraft and weapon systems while maintaining our lethality. We research and test 21st century technologies utilized by commercial airlines, such as infrared imaging, laser scanning methods, engine foam washing, and advanced manufacturing techniques for the cleaning, inspection, rework, and coating of engine compressor blades to determine whether these innovations can be applied to the DAF to optimize legacy engine performance.

Fuel Logistics and Alternative Fuels

The Air Force Operational Energy Office, the Air Force Petroleum Office, and the Air Force Research Laboratory (AFRL) continue to monitor and study advances in renewable and alternative fuels to better understand their benefits and how they can potentially reduce the DAF fuel logistics footprint. Our research and analysis of conventional and alternative fuel certification processes, fuel additives, fuel transfer equipment, and fuel storage capacity, allows us to better identify logistical gaps and propose resiliency improvements to the jet fuel supply chain in energy-constrained environments, mitigating risk to the warfighter.

Energy-Informed Wargaming

We support the development and execution of DAF and joint-service wargames to analyze the jet fuel supply network in an energy-constrained environment and reduce operational risk to joint logistics. Through modeling and simulation tools, we increased our awareness of future energy requirements and the potential for fuel supply gaps, disruptions, and adversarial threats.

The results of the Air Force's Global Engagement and Long Duration Logistics Wargames, as well as the Joint Forces Energy Wargame, highlighted the criticality of energy distribution infrastructure and the necessity for energy planning across all phases of an operation. We continue to develop methods to analyze our strategic energy posture and the unique challenges in the Western Pacific and European theaters to inform infrastructure and capability investments.

Acquisitions and Capability Development

The DAF actively works to test, develop and field modern aerodynamic technologies on our legacy aircraft to reduce Department fuel costs. C-17 Microvanes, small fins placed on the aft

fuselage of the aircraft to streamline airflow, reduce drag by 1 percent, saving roughly 10 million dollars per year in fuel costs. Additionally, simply adjusting the static orientation of windshield wiper blades on the KC-135 from horizontal to vertical is expected to save approximately 7 million dollars per year. Other technologies present opportunities to reap fuel savings and maximize tax-dollar utility.

The DAF is leveraging big data analytics to identify and remedy anomalies in rigging of aircraft flight control surfaces. When poorly rigged, the moveable surface structures will cause additional drag on an aircraft, leading to unnecessary fuel burn. Adjustments to movable flight controls, engine controls, flight deck controls, and retractable landing gear component parts have been shown to significantly reduce drag and increase aircraft performance in commercial applications. Improvements to the rigging of aircraft is expected to result in fuel savings of 23 million gallons.

Finally, the DAF guides acquisition policy to address operational energy requirements associated with new and major modification programs through the Energy Key Performance Parameter and Energy Supportability Analysis. We work closely with AFRL to push the technology envelope and help advance key disruptive technologies to maximize operational energy efficacy and outpace our competitors.

Conclusion

The DAF's FY22 budget request supports the President's Interim National Security Strategic Guidance and lays out a plan to modernize our military capabilities while taking care of our Airmen, Guardians, and families. It keeps us on the path toward a successful future posture. The I2S continues to guide MILCON and FSRM budget decisions and business practices as we endeavor to deliver ready, resilient installations as cost effectively as possible. The MILCON portion of the FY22 request prioritizes nuclear enterprise modernization and supports Combatant Commanders, with particular focus on the European and Pacific theaters. The housing request provides the resources needed to sustain and improve the DAF's inventory of government-owned homes and provide oversight of privatized housing project owners. The Department remains committed to overcoming challenges affecting this portfolio and delivering effective, efficient installation engineering services. The FY22 President's Budget request ensures that our Airmen, Guardians, and installations are ready to defend American interests now and in the future.

WITNESS RESPONSES TO QUESTIONS ASKED DURING THE HEARING

JULY 14, 2021

RESPONSE TO QUESTION SUBMITTED BY MR. LAMBORN

Ms. MILLER. The USSF is currently utilizing the Defense Readiness Reporting System (DRRS) to report readiness, with adjustments in work to make it a better readiness tool for space forces

- The USAF Air Expeditionary Task Force (AETF) model within DRRS does not sufficiently portray readiness of Employed-in-Place (EiP) USSF forces
- USSF is in the process of defining and implementing a new USSF force presentation model that will enable more robust DRRS utilization and readiness reporting
- The standup of the USSF required changes to the Unit Identification Codes (UIC) for the new Service that current DRRS tools do not accept (requires manual workaround)
- USSF is investing in Space Force specific DRRS input tools to account for the new UIC nomenclature and to enable timely and accurate readiness reporting

[See page 13.]

RESPONSE TO QUESTION SUBMITTED BY MS. STRICKLAND

Mr. SURASH. In February, almost 700 of the privatized homes at JBLM were unavailable for occupancy due to a significant between-occupancy maintenance backlog that resulted from labor shortages in the Fort Lewis area. The Army approved the Military Housing Privatization Initiative (MHPI) housing project at JBLM to use $7M in project Reinvestment Account funds to bring on additional, dedicated contractor firms to accelerate between occupancy maintenance of vacant quarters during the current Permanent Change of Station (PCS) season. The Amy Material Command (AMC) and Army Installation Management Command (IMCOM) are closely monitoring the MHPI housing project's progress towards the goal of reducing the vacant quarters backlog to less than 100 by September 2021. In addition, the MHPI hotel at JBLM that is part of Army's Privatization of Army Lodging (PAL) program is offering soldiers the option to remain in the hotel at a room rate equal to their Basic Allowance for Housing (BAH) rate, pending permanent assignment to on or off-post housing. [See page 27.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

JULY 14, 2021

QUESTIONS SUBMITTED BY MR. WILSON

Mr. WILSON. Microreactors not greater than 50 MW in size offer the opportunity for significant national security benefits to DOD. Microreactors could power critical facilities in island mode separate from the commercial electric grid, and could operate for several years without need to shut down for refueling, with the ability to protect against cyber threats and natural phenomena. Some advanced reactor designs have demonstrated unlimited coping time in the event of a blackout or other emergency, and can provide black start capabilities. Please explain how DOD views mobile vs. stationary NRC licensed reactors for potential application at DOD facilities.

Mr. CRAMER. The Department seeks to use innovative technology to improve energy resilience against all hazards, to include the effects of climate change. Stationary Nuclear Regulatory Commission (NRC)-licensed microreactors are an option for permanent DOD installations within the United States and its territories, especially those in remote locations, to enhance energy security and energy resilience. In coordination with DOE, DOD is pursuing the demonstration of a stationary NRC-licensed reactor at a permanent installation in the continental United States as a pilot program to validate microreactor technology and determine the viability of microreactors for future energy resilience efforts. If the demonstration is successful, DOD could pursue additional projects similar to the pilot initiative at suitable locations in the future, incorporating lessons learned from the pilot.

To provide increased operational capabilities and energy resiliency in strategic and operational support areas, the Strategic Capabilities Office, within the Office of Secretary of Defense, is pursuing the design and development of a working prototype under their program, Project Pele. Currently there are two vendors in a design competition, for which final designs will be due in March 2022, with a potential prototype construction and initial operation by Spring, 2024.

Mr. WILSON. Executive Order 13972, "Promoting Small Modular Reactors for National Defense and Space Exploration," signed January 5, 2021, requires that DOD "implement a plan to demonstrate the energy flexibility capability and cost effectiveness of a Nuclear Regulatory Commission licensed microreactor at a domestic military installation." Please provide a status update on this report. If the report is complete, please provide a copy of the report.

Mr. CRAMER. DOD has prepared a draft Demonstration Plan to meet the requirements of Executive Order 13972 and is currently coordinating this plan among various Department stakeholders.

Mr. WILSON. Executive Order 13972, "Promoting Small Modular Reactors for National Defense and Space Exploration," signed January 5, 2021, requires that DOD "implement a plan to demonstrate the energy flexibility capability and cost effectiveness of a Nuclear Regulatory Commission licensed microreactor at a domestic military installation." Please provide a status update on this report. If the report is complete, please provide a copy of the report.

Mr. SCHAFER. [No answer was available at the time of printing.]

Mr. WILSON. Executive Order 13972, "Promoting Small Modular Reactors for National Defense and Space Exploration," signed January 5, 2021, requires that DOD "implement a plan to demonstrate the energy flexibility capability and cost effectiveness of a Nuclear Regulatory Commission licensed microreactor at a domestic military installation." Please provide a status update on this report. If the report is complete, please provide a copy of the report.

Ms. MILLER. The report in question is under development by the Office of the Secretary of Defense (OSD). While the Department of the Air Force did provide inputs, OSD will need to provide the up-to-date status of the report.

QUESTIONS SUBMITTED BY MR. SCOTT

Mr. SCOTT. Does the National Guard have access to the same authorities and funding source for environmental clean up as the rest of DOD installations? What are the risks to the cleanup program when they don't have access to the same authorities and funding source?

Mr. CRAMER. State-owned or -operated National Guard facilities have the same DOD authorities and funding source for environmental cleanup to address PFOS and PFOA, as well as what DOD considers the first two investigation phases (e.g., preliminary assessment (PA) and site investigation (SI)) under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA, aka Superfund).

The Defense Environment Restoration Program (DERP) law provides DOD the authority to perform and fund its environmental restoration responsibilities arising under CERCLA. CERCLA responsibility (i.e., liability) extends to, among others, the owner and operator of the facility. DOD reemphasized in FY18 that the use of DOD environmental restoration funds does not extend to releases that occurred at State-owned, State-controlled, and State-operated National Guard facilities. However, Congress amended DERP in FY20 and FY21 to allow the use of DERP funds for PFOS and PFOA cleanups at National Guard facilities.

Where National Guard facilities are ineligible for these DERP funds, they are eligible for other federal funds (i.e., Army and Air Force National Guard Operation and Maintenance appropriations) for environmental cleanup actions to address contaminants at state-owned or operated National Guard facilities. The National Guard works with the Army or Air Force, as applicable, to receive federal funds for cleanup actions, and have been doing this for over 30 years. Because the National Guard must conduct its cleanups in accordance with CERCLA, and federal funds are used for these cleanups (regardless of whether they are DERP or federal O&M funds), there are no identified risks.

Mr. SCOTT. Why were National Guard restoration sites pulled out of the Defense Environmental Restoration Program under an OSD policy in FY18 when they were successfully cleaning up sites under the Defense Environmental Restoration Program for over 30 years?

Mr. CRAMER. State owned or operated National Guard facilities have the same DOD authorities and funding source for environmental cleanup to address PFOS and PFOA, as well as what DOD considers the f irst two investigation phases (e.g., preliminary assessment (PA) and site investigation (SI)) under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA, aka Superfund). The Defense Environment Restoration Program (DERP) law provides DOD the authority to perform and fund its environmental restoration responsibilities arising under CERCLA. CERCLA responsibility (i.e., liability) extends to, among others, the owner and operator of the facility.

DOD reemphasized in FY18 that the use of DOD environmental restoration funds does not extend to releases that occurred at State-owned, State-controlled, and State-operated National Guard facilities. However, Congress amended DERP in FY20 and FY21 to allow the use of DERP funds for PFOS and PFOA cleanups at National Guard facilities. Additionally, federal funds (i.e., Army and Air Force National Guard Operation and Maintenance appropriations) have been used for over 30 years for environmental cleanup actions to address contaminants at state-owned or operated National Guard facilities.

Mr. SCOTT. When National Guard installations are not eligible for the Defense Environmental Restoration Program, what do they have to do to be eligible and how long does it take?

Mr. CRAMER. State-owned or -operated National Guard facilities are eligible for Defense Environment Restoration Program (DERP) funds to address PFOS and PFOA, what DOD considers the first two investigation phases (e.g., preliminary assessment (PA) and site investigation (SI)) phases under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA, aka Superfund). Where National Guard facilities are ineligible for these DERP funds, they are eligible for other federal funds (i.e., Army and Air Force National Guard Operation and Maintenance appropriations) for environmental cleanup actions to address contaminants at State-owned or -operated National Guard facilities. The National Guard works with the Army or Air Force, as applicable, to receive federal funds for cleanup actions, and have been doing this for over 30 years.

Mr. SCOTT. The FY20 NDAA authorized National Guard PFOS/PFOA sites to be moved into DERP. Have all of the sites been transferred? If not, why?

Mr. CRAMER. DOD already uses DERA to fund its initial investigations under CERCLA (i.e., preliminary assessment/site inspection) at Guard sites. The FY20 NDAA allowed DERA to be used to address later phases in the CERCLA process for PFOA and PFOA.

DOD issued guidance on September 29, 2020 for the transfer of eligible National Guard PFOS/PFOA sites into DERP. The only requirement is for the Deputy Assistant Secretary of the Army or Air Force, as applicable, to provide the Deputy Secretary of Defense for Environment and Energy Resilience a list of eligible sites that

will be moving to DERP. As of the end of July 2021, DOD has only received this notification for a small number of sites.

Mr. SCOTT. What steps has DOD taken to proactively engage with technical experts and industry to address any concerns about the use of variable refrigerant flow (VRF) equipment before modifications to Unified Facilities Criteria's (UFC) VRF requirements are issued?

Mr. CRAMER. DOD first published HVAC design criteria on the installation of new VRF systems in January 2017. Prior to that, DOD had significant direct involvement with the HVAC industry in general, including several industry reviews of various proposed updates to HVAC controls specifications, and several industry forums that included soliciting industry comments.

These engagements were not focused on VRF systems in particular, but were open to industry representatives of all HVAC systems, to include VRF systems. During this process, neither industry associations nor VRF manufacturers raised any issues or concerns with DOD's proposed HVAC control system requirements that later surfaced as the VRF-specific problem.

The January 2017 restrictions in HVAC design criteria were based upon analysis of VRF manufacturer's technical literature, experience with previously-installed VRF systems, and review of Department of Energy studies on VRF systems which were available for DOD technical personnel to review. This analysis was supported by the broader industry engagement on HVAC control systems already mentioned.

As a result of the design criteria restrictions, DOD arranged an in-person meeting of its entire technical team and UFC program managers with VRF industry representatives at the offices of AHRI in Arlington, VA in May 2017, focused on understanding respective concerns and sharing of technical papers and presentations. This engagement ultimately led to several subsequent updates to DOD criteria that were informed by, and resulted from, DOD-industry engagement during this three-year period. The first such update replaced the general "blanket" restrictions on new VRF installations with specific design criteria equivalent to other HVAC systems, effectively placing VRF systems on a level playing field with other types of HVAC systems. DOD afforded AHRI the opportunity to review and comment upon this proposed update prior to its approval and publication. A later update for key HVAC control system specifications was preceded by DOD seeking industry-wide input via FedBizOps as described above to both refine DOD's specification and inform DOD of industry capability to satisfy it. Based upon its accumulated industry input, DOD subsequently updated its design criteria yet again to provide VRF system installations under particular circumstances an exception from meeting DOD's open protocol control system specification.

Mr. SCOTT. Given that the Critical Change Request (CCR) process is largely retroactive, requires industry to submit individual requests for each proposed UFC revision, and lacks a public platform to track the resolution status of CCRs submitted, do you believe this process is sufficient in creating opportunities for DOD and industry to work together to mitigate technical concerns, optimize equipment performance, minimize energy consumption, and maximize energy savings?

Mr. CRAMER. The Criteria Change Request (CCR) process is but one tool that DOD can use to engage with stakeholders both internal and external to the Department; all of these tools are necessary to fully engage with industry to address issues and develop opportunities in technical criteria and specifications. A CCR initiates a formal process that is logged and tracked within the Unified Facilities Criteria (UFC) program management structure and visible by the affected technical experts in the Army, Navy, and Air Force for collective action to adjudicate the submission. The tool enables a direct response back to CCR submitter as to its disposition once it has been fully reviewed by DOD technical personnel. A such, it serves as an efficient means of communication, albeit of a very focused nature and dependent upon the scope of the CCR itself as it relates to already-published documents. Other tools offer broader and more open-ended dialog between DOD and industry, such as "Industry days" where DOD invites the public and specific industries of interest to attend public DOD presentations and provide live feedback and discussion, typically in advance of adopting new criteria or specifications. Additionally, the Solicitations and Awards Management (SAM) process includes formal "Sources Sought" actions to solicit industry information on capabilities to meet DOD requirements, as well as complimentary "Requests for Industry" process to solicit input to specific draft criteria and specifications. The combination of all these tools provides the necessary opportunities for DOD and industry to resolve technical concerns and develop new opportunities.

QUESTIONS SUBMITTED BY MR. GOLDEN

Mr. GOLDEN. As we work to advance DOD's readiness capabilities regarding increased extreme weather events, it will be important that the Department approaches this issue by investing in innovative and new building technologies. What are some barriers that the DOD faces in acquisition of innovative building products that can mitigate the damage caused by extreme weather events?

Mr. CRAMER. DOD generally seeks to adopt new technologies only after they been tested and certified for the commercial market, as long as the technology is not military-specific. Once new technologies have been demonstrated as viable, the greatest barrier is typically the effort required to adopt or establish a suitable specification (or multiple specifications) for DOD use that ensures DOD receives what it expects. Even with a suitable specification, the remaining potential barrier is that of cost-risk-benefit analysis, where cost is weighted against benefits (such as risk reduction). DOD may avoid a new technology that mitigates damage from extreme weather if its cost outweighs the expected cost avoidance from its use.

Mr. GOLDEN. The DOD follows the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), which is a Federal clean-up law. Where the DOD is the known source of contamination, CERCLA allows the DOD to provide bottled water, filter systems, and other removal actions to quickly assure no one is drinking water above the EPA PFOS/PFOA lifetime Health Advisories level. When a State establishes their own drinking water standard, the Department evaluates this as part of an overall site remediation strategy during the feasibility study (FY) phase of CERCLA. Can you explain what happens during the DOD's feasibility study phase and what remedial steps the DOD takes when a State's PFOS/PFOA acceptability standards are less than the EPA standards?

When a State changes its own PFOS/PFOA drinking water standard and the DOD is the contaminating source, how is the DOD notified about the State's change and how does that affect the DOD's remediation strategy for that State?

Mr. CRAMER. During a CERCLA Feasibility Study (FS), site-specific options for remedial action are developed, screened, and evaluated. This FS process includes evaluating promulgated federal and state standards as identified in section 121(d) of CERCLA. This is referred to as the Applicable or Relevant and Appropriate Requirements (ARARs) process. If a more stringent state drinking water standard qualifies as an ARAR, it is incorporated into the cleanup levels that must be attained at the site upon completion of the remedial action. As part of the ARARs process, consistent with the NCP, at the Remedial Investigation (RI) scoping phase, DOD, as the lead agency, initiates the identification of potential state ARARs. During the FS phase, States should identify their potential ARARs for evaluation which would include any new potential state ARARs so they could be incorporated into the ARARs evaluation process.

QUESTION SUBMITTED BY MR. KAHELE

Mr. KAHELE. Earlier this year in March, a UXO's was discovered in the waters off Lanai.

Mr. Schafer, do you have any status updates on this UXO's risk assessment? Can you commit to working with me and the local community to explore alternatives to blowing up the UXO? There was a similar case near Molokini and there was strong public outcry against exploding the UXO near the fragile coral reefs.

Mr. SCHAFER. [No answer was available at the time of printing.]