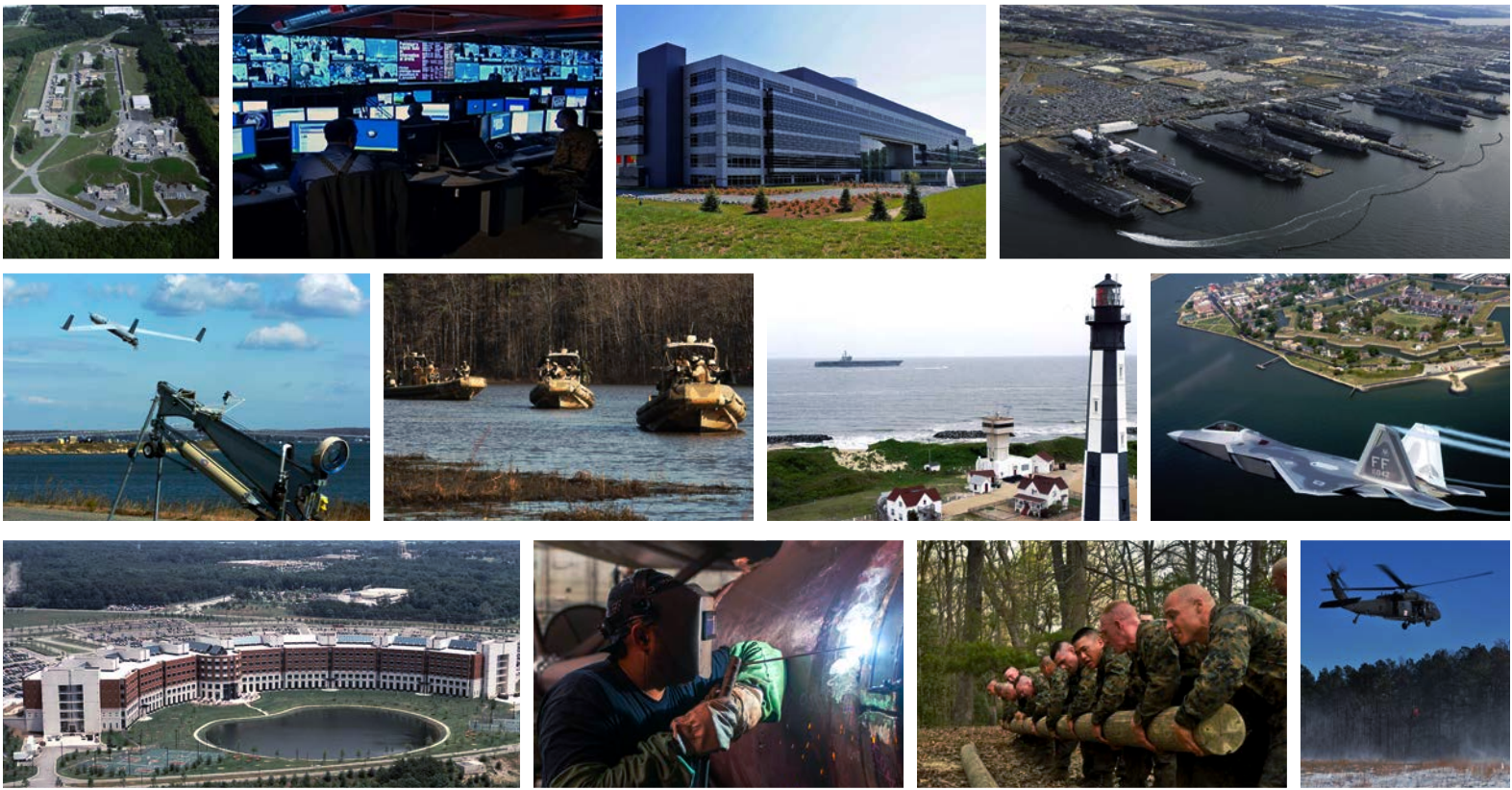




Growing the Military Mission in the Commonwealth of Virginia

Executive Summary and Public Report



Presented by the Virginia Commission on
Military Installations and Defense Activities

May 1, 2015

Growing the Military Mission in the Commonwealth of Virginia



Over the past decade, the Department of Defense (DOD) has invested billions of dollars in construction on military installations across Virginia. Actions impacting the Commonwealth resulting from the 2005 Base Realignment and Closure were very favorable and resulted in growth at almost every military installation and base in Virginia. However, we cannot stand still and hope that the past will repeat itself. The defense budgets will continue to decline and a further round of some type of base closure process is increasingly likely within the near-term future. Accordingly, the Commonwealth must adopt an aggressive, forward-leaning approach to continue to grow the military mission in Virginia. Significant capacity for such growth exists in abundance, but it will take concentrated action at all levels of government and strong support from the state's many civic organizations and citizens to take full advantage of the growth opportunities that now exist.

Understanding emerging requirements and national security trends, and aligning them with the Commonwealth's existing military installations, industries, academic institutions, economic infrastructure and communities in a critical and self-evaluative manner, is essential to ensuring Virginia's continued growth and enduring relevance to the Nation's defense. Sustaining the current set of military missions and identifying when future growth is possible was the work undertaken by the Commission on Military Installations and Defense Activities – an assessment of the strengths, weaknesses, opportunities and risks inherent in Virginia's current defense-related infrastructure, and development of a strategy to improve the competitive posture of the Commonwealth in a dramatically changed budget environment.



Executive Summary

1.	<i>Create a Center of Excellence (COE) at the College of William and Mary devoted to a “Whole of Government” approach to national security challenges.</i>
2.	<i>Develop a strategy to close Navy identified strategic development gaps.</i>
3.	<i>Support expanding the RDT&E mission at NSWC Dahlgren.</i>
4.	<i>Accelerate efforts to pursue a cyber security mission for the Virginia Air National Guard.</i>
5.	<i>Host the persistent training environment for USCYBERCOM in Suffolk.</i>
6.	<i>Develop partnerships with industry and academia to strengthen and expand the Navy’s current cyber portfolio with an academic/joint/interagency Center of Excellence.</i>
7.	<i>Increase Commonwealth involvement in autonomous systems development.</i>
8.	<i>Support expanding the Aviation Applied Technology Directorate’s (AATD) mission at Fort Eustis and increase support for joint research with the NASA Langley Research Center and the DOE Jefferson Lab.</i>
9.	<i>Compete for a National Network for Manufacturing Innovation (NNMI) Institute.</i>
10.	<i>Develop a proposal to leverage the capabilities at the Virginia Modeling, Analysis and Simulation Center (VMASC) to help DOD improve war gaming and virtual and constructive training.</i>
11.	<i>Investigate opportunity to conduct logistics optimization RDT&E at Fort Lee and Fort Belvoir.</i>
12.	<i>Implement Military Infrastructure Bonding Authority.</i>
13.	<i>Fully utilize the suite of authorities under the National Defense Authorization Act (NDAA) enabling increased use of shared services.</i>
14.	<i>Support expanding the Rivanna Station Integrated Intelligence Campus.</i>
15.	<i>Continue efforts to bring the F-35 Joint Strike Fighter to Virginia.</i>
16.	<i>Promote Langley AFB as the location for additional aircraft.</i>
17.	<i>Support expanding Joint Service and Special Operations Command training opportunities at Fort AP Hill and Fort Pickett.</i>
18.	<i>Facilitate additional mission growth at Fort Belvoir.</i>
19.	<i>Support establishing Underwater, Surface and Airborne Unmanned and Autonomous Testing Range at the Third Port and Felker Field at Fort Eustis.</i>
20.	<i>Support development of additional overhaul and repair opportunities for submarines.</i>

Leveraging the efforts of the previous Commission, visiting several installations and bases which were not visited during 2013, and meeting with community and business leaders near the installations or bases visited over the past year, we identified several trends and technology operational areas where the Commonwealth should posture itself to continue to provide strong support to the military services. The Commission identified twenty (20) recommendations to be undertaken (listed in chart at left).

This report provides specific actionable items for each recommendation in order to sustain and grow Virginia’ contributions to the nation’s proud defense efforts and ensure Virginia continues to serve as a strong strategic partner to our military services.

While we are not advocating for another round of BRAC, we must be ready when it comes as it surely will. Our report incorporates and builds upon the recommendations from the 2013 base-line study of several military installations. In the following pages, we detail the approach, methodology and findings of the Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis. We provide a range of recommendations, the majority of which are achievable within a seven year time horizon, and conclude that the military missions currently carried out at the Commonwealth’s bases and installations are capable of significant growth and enhancements.

Context

The enduring relevance of the military forces based in the Commonwealth was well-illustrated on September 22, 2014, when Air Force F-22 fighters from Langley Air Force Base and Oceana-based F-18's flying off the USS GEORGE H. W. BUSH (CVN-77), home ported in Norfolk, Virginia, conducted the initial strikes against the Islamic State in Iraq and Syria (ISIS).

Prior to those strikes being conducted, the National Ground Intelligence Center and Defense Intelligence Agency personnel from Rivanna Station put together the intelligence puzzle and developed the targets to be attacked.

Special Operations Forces based in Dam Neck and trained at Joint Expeditionary Base Little Creek – Fort Story coordinated operations in support of the September 22 attacks and conducted other sensitive operations throughout the region.

Intelligence related organizations, cyber forces of all the services, major headquarters for the Army, Navy, Air Force and Marines, significant logistics support headquarters and bases are all located in Virginia and played major direct and support roles in the operations against ISIS that continue to this day.

The prominent role Virginia plays in our nation's defense is not accidental – indeed, the Commonwealth's support for our military services and other Department of Defense

organizations is a carefully constructed network of bases, installations and training ranges that must be fully understood and supported by the Commonwealth's leaders to ensure Virginia continues to retain its position of prom-

inence in the nation's defense structure.

This network's interconnectivity involves a great many factors, including Virginia's unique geography, access to premier training ranges and airspace, a concentrated set of critical missions and capabilities, a specialized workforce, a dynamic economy, a world-class transportation hub, academic centers of excellence, and a strong history and heritage of service. It would be harmful to disregard Virginia's legacy of military service, for the culture it has inspired has imbued our State's leaders with a watchful eye and an innate commitment to protecting the Com-

monwealth's role in our nation's defense. Whether from our past and present elected officials in the White House, on Capitol Hill or in Richmond, former military leaders who have decided to make Virginia home, or among our industry and academic leaders, a robust military presence in Virginia is not an afterthought – it is a persistent and organizing principle.

Today, the Commonwealth is ready, well-informed, well-led, forward-leaning and prepared for the realities of DOD budget cuts, force structure reductions, and the potential



USS GEORGE H.W. BUSH (CVN 77)



FORT BELVOIR

of another BRAC round. Thanks to the proactive efforts of Virginia’s public and private sector leaders, the Navy has dropped its plans to shift an aircraft carrier from NS Norfolk to NS Mayport in Florida; the Commonwealth and the City of Virginia Beach have been praised by both the Congress and Pentagon for rolling back encroachment around NAS Oceana; a new National Monument, the result of a Presidential Proclamation, resides at Fort Monroe; and, the plan to eliminate Joint Forces Command was modified to become “Joint Staff South,” home to Navy Information Dominance forces. The announcement by the Air Force to locate the new Intelligence, Surveillance and Reconnaissance Command (25th Air Force) at Langley AFB and DOD’s decision to create a secondary continuity of operations (COOP) capability at Fort A.P. Hill are very recent examples of DOD’s recognition of the value of military establishments in the Commonwealth. Recently, Virginia won the designation to offer the FAA a truly innovative solution to help shepherd the next generation of remotely piloted aircraft into the nation’s airspace, heralding Virginia as one of only six FAA Test Sites for Unmanned Aerospace Systems development and training.

Over the past decade, the Department of Defense (DOD) has invested billions of dollars in construction on military installations across Virginia. Growth at Marine Corps Base Quantico, Fort Belvoir, Rivanna Station, Fort Lee, and Fort Eustis, coupled with the significant recapitalization of JEB Little Creek – Fort Story, Norfolk Naval Shipyard and NS Norfolk, have positioned Virginia well for the missions of the future. It is important to remember that while military end strength and force structure may fluctuate over time, the development of new tactics and missions, based on emerging threats and requirements, never goes away. Those requirements and consequent missions will ultimately be satisfied by human capital – uniformed and civilian defense personnel, research and

development engineers and industry partners, somewhere across our nation. Virginia is ideally postured for potential mission growth as the military departments make decisions to relocate or develop new ones consistent with emerging national security imperatives.

Understanding emerging requirements and national security trends, and aligning them with the Commonwealth’s military installations, industry, academic institutions, infrastructure and quality of life, in a critical and self-evaluative manner, is essential to ensuring Virginia’s continued growth and enduring relevance to the nation’s defense, while also avoiding the surprise of missed opportunities, or worse, losing an existing mission set entirely. This is the work undertaken by the Commission – an assessment of the strengths, weaknesses, opportunities and risks inherent in Virginia’s current defense position, and a strategy to improve the competitive posture of the Commonwealth and her military installations. We are grateful to the leaders and staff of numerous military installations, local governments, academic institutions and private sector organizations who generously shared key information on current challenges,

future plans and creative solutions during our exhaustive analysis of Virginia’s military missions and installations.

Each military installation in Virginia adds value to the nation’s defense with a specific military mission or set of missions that are integral to the whole. Our strategic approach to maintain and enhance Virginia’s military installations is to ensure the viability and continued growth of those missions and to leverage the Commonwealth’s considerable public, private and human capital assets in their support. We must anticipate the choices and changes that will confront the DOD and the military services in the next decade - due to budget reductions, evolving threats, and emerging technologies - and position Virginia’s military bases and installations as the best



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options available to the DOD in a national security environment that demands high readiness, advanced capabilities, rapid adaptability and efficiency.

Over the next ten years, the threats to our nation's security will continue to evolve rapidly and unpredictably in unforeseen parts of the world, likely undermining existing strategic initiatives such as the re-balancing of forces in the Pacific theater and the ongoing consolidation of U.S. military bases in Europe. At the same time, DOD will continue to struggle with force structure and end strength reductions as the full effects of the Budget Control Act and Sequestration are realized. Moreover, because Congress has, for the last two budget cycles, prohibited the DOD from retiring force structure, the military departments will continue to depend on decision processes like the Air Force's Strategic Basing Process and requirements definition through the Planning, Programming, and Budgeting process to save money and optimize readiness without sacrificing capability. The DOD will continue to use the President's annual federal budget request to "shrink from within" and consider using Section 2687 authorities, which provide the Secretary of Defense the ability to conduct limited closure and realignment actions with only congressional notification, until Congress relents and approves a new round of base realignments and closures. Already the President has requested another BRAC round in his FY16 Budget Request, Congress has denied this request for each of the past three years. If Congress does not authorize another BRAC round in 2017, the "Administration will pursue alternative options to reduce this wasteful spending." Downsizing and force consolidation are coming at us, one way or another.

Maximizing the efficient use of available resources and shedding excess capacity are the key drivers in today's budget environment. We expect a high level of openness to shared services, public/private partnerships and other innovative and creative approaches to accessing third

party capital to improve and increase service capabilities within extreme fiscal constraints. Virginia is exceedingly well-positioned to capitalize on this "new normal" environment for defense spending.

Currently the military bases in the Commonwealth have very high military value, and each one has the capacity to accommodate additional mission growth. Our state is well positioned to preserve the missions that already exist and to attract, create, and grow new opportunities. We are fortunate to have strong support for Virginia's military installations at all levels of government and across all sectors of our society: our efforts to grow missions will depend on a coordinated, multi-sector advocacy strategy among federal, state and local representatives.

The Commission has identified four key areas of opportunity in which Virginia is on the leading edge and can serve as both catalyst and strategic partner to our nation's armed forces:



Maximizing the efficient use of available resources and shedding excess capacity are the key drivers in today's budget environment... Virginia is exceedingly well-positioned to capitalize on this "new normal" environment for defense spending.



- ◆ *Improving how our nation develops its military leaders;*
- ◆ *Advancing research, development, testing, evaluation and deployment of emergent technologies;*
- ◆ *Investing in infrastructure to facilitate new missions; and,*
- ◆ *Maximizing the value and use of existing facilities and resources across all branches of service and all sectors*

There are a range of exciting opportunities available in each of these areas, from game-changing "quick wins" to long-term strategic investments. Each builds upon the demonstrated strength and success of Virginia's tradition of support for our military, and may present room for creative arrangements like shared services or multi-sector partnerships.

Improving How Our Nation Develops Its Military Leaders

Virginia should facilitate strategic partnerships between the military services and the Commonwealth's academic institutions to help prepare the next generation of military leaders. Every strategic plan released by the military services over the past two years has called for strengthening leadership training and expanding relationships with non-military academic institutions. Virginia already hosts many of the military services' leading education and training institutions. As a case in point, the future of the Army is being developed at Fort Eustis, and Fort Lee is host to the largest Non-Commissioned Officer Academy in the Army. The intellectual development and schoolhouse for Marine Corps officers resides at Quantico Marine Corps Base. The Naval Warfare Development Command in Norfolk accelerates the development of game-changing operational solutions for the Navy. The Federal Executive Institute in Charlottesville trains civilian leaders across the military services and other federal agencies. We can expand Virginia's contribution to developing the knowledge and expertise of

our uniformed leaders by leveraging the world-class academic institutions in the Commonwealth.



Advancing Research, Development, Testing, Evaluation (RDTE) and Deployment of Emergent Technologies

(Cyber Security; Autonomous Systems; Modeling, Simulation and Analysis)

There is great opportunity for the Commonwealth of Virginia to partner with the Department of Defense, Department of Energy, Department of Homeland Security, NASA, and other agencies and academic institutions to develop and successfully deploy emerging technologies in growth sectors like cyber security, autonomous systems, and modeling, simulation and analysis. The density of joint interagency, intergovernmental, and multinational (JIIM) organizations already in the Hampton Roads and Northern Virginia areas is a strength that must be stressed continuously.

The Commonwealth is home to the Pentagon, the National Geospatial-Intelligence Agency, the NASA Langley Research Center, the Army's Training and Doctrine Command, the NATO Allied Command Transformation, the Joint Forces Staff College, the Department of Ener-



NATIONAL GEOSPACIAL INTELLIGENCE AGENCY, SPRINGFIELD

gy's Jefferson Lab and numerous private sector industries that are and will be users of these emerging technologies. With such a high concentration of end users, Virginia is well positioned to become the center of gravity for these growing industries.

Investing in Infrastructure to Facilitate New Missions

A future BRAC round involving all the military services and DOD activities will eventually be authorized by Congress. It is undeniable that Virginia missed out on some significant opportunities during the BRAC 2005 round. The Commission will work with State leadership to ensure they are fully aware of these past BRAC recommendations. There will need to be a focused effort in determining continued viability, as well as other potential new opportunities for consolidation in the Commonwealth.

Virginia should create a Military Infrastructure Bond Bill to support capital investments within the Commonwealth to improve military installations. In addition to helping enhance and attract future military missions, capital investment in and around the State's military installations

can act as a catalyst for economic development in the local communities.

The Commonwealth should conduct a targeted review, on a statewide basis, of the top unfunded military construction requirements for potential public-private partnerships, utilizing both the National Defense Authorization Act Section 331 authority and other authorities, including Enhanced Use Lease (EUL). EULs have the potential to generate millions of dollars from third-party developers - dollars that can be used to revitalize facilities and infrastructure on our military bases. The objective is to entice compatible industries (those that can support existing or future missions at the base) to locate on the base. Virtually every Virginia installation has property that is available for EULs.

Maximizing the Value and Use of Existing Facilities and Resources

Virginians should partner with local communities, the private sector and the military services to enhance the value and benefit of existing installations to all sectors. The Commonwealth is home to irreplaceable training ranges (at sea and ashore) that must be preserved and protected. The military installations associated with these ranges are critical to local economies, generating thousands of jobs and billions of dollars in economic activity and tax revenue annually. In the past, incompatible development has been a factor in the loss of training operations and restructuring or loss of mission-critical components at various military installations. To protect missions currently carried out at Virginia's military installations, and the health of the economies and industries that rely on them, encroachment must be addressed through collaboration and joint planning between installations and local communities.

The DOD, USAF Combat Command and Congress all recognize the need for additional investment in Electronic Warfare Ranges for Full Spectrum Operations. The DOD desires the ability to train interagency and other partners for a Whole of Government (WOG) approach. Opportuni-



USAF F-22 RAPTOR

ties to conduct Defense Support of Civil Authorities (DSCA) response, like a Chemical, Biological, Radiological, Nuclear and Explosive weapons (CBRNE) event or even a mass casualty training area would be valuable as well as setting up urban environments for counter insurgency operations. The Commonwealth should engage the Military Airspace and Range owners directly to determine what they need for the region to be a joint "Full Spectrum" training environment for 5th generation fighter aircraft.

Implement a Holistic Approach to Confront Infrastructure and Climate Change Challenges

The Commission recognizes that it must work in concert with other agencies and organizations to advance many of the concepts we outline in this report. A perfect example of this need to cooperate on common interest can be seen with the Department of Natural Resources. Two of the Department's three main priorities, land conservation and climate change, are directly related to issues and challenges facing our military installations and support communities. With respect to land conservation, it is a very effective tool to consider when mitigating encroachment challenges and preserving mission. The Department of Defense has successfully partnered with land conservation interests to help buffer critical areas around installations, like accident potential zones, high noise areas, and low level military training routes. In term of climate change, many of the installations and communities we visited (especially around the Hampton Roads area) were very concerned about sea level rise. According to a June 2014 report by the World Resources Institute, "The Hampton Roads area possesses the second largest concentration of military capacity and activities in the United States...all

major military facilities in Hampton Roads are threatened by sea-level rise." The report goes on to say, "Since 46 percent of the local economy comes from Department of Defense spending, this makes Hampton Roads uniquely vulnerable to sea-level rise." As the article alludes and as we discovered in our visits, a holistic approach to this challenge is required...you can't have military resilience without community resilience, and vice versa. By the same token, thought this report focuses mainly on active duty installations and the communities that surround them, the Commission recognizes the vital role the Virginia National Guard (VNG) plays in both national defense and in State emergencies. The VNG is facing its own set of challenges, such as aging infrastructure, undersized or outdated facilities, and poorly aligned geographic locations that no longer fully support assigned units. This, in conjunction with rapidly declining budgets, places the VNG in a situation where they may be forced to consider options that may be unpopular, such as consolidating armories and realigning units.



HAMPTON ROADS

Recommendations

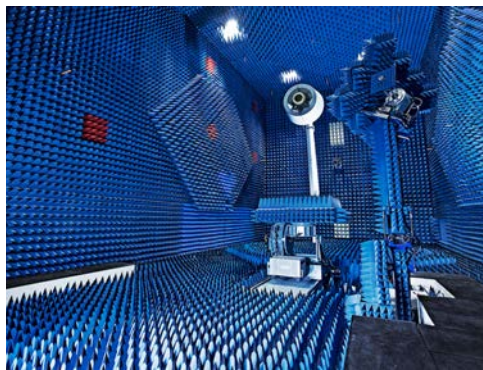
1. Create a Center of Excellence (COE) at the College of William and Mary devoted to a “Whole of Government” approach to national security challenges. The Army’s Training and Doctrine Command (TRADOC) has led a robust effort with college internships, but more can be done - a joint, interagency, intergov-

ernmental COE centered on the concept of whole of government (WOG) solutions to the most pressing national security challenges. The COE could offer graduate and PhD programs in strategic studies and leverage the density of joint interagency, intergovernmental, and multinational (JIIM) organizations already in the Hampton Roads area. The College of William and Mary and Virginia’s other premier public institutions are ideally suited to host such a COE. The WOG approach is designed to take government in the direction of creating a common understanding of and a common approach to solving the most pressing national security challenges. AFRICOM, for example, includes the U.S. AID, State Department, Commerce Department, and NGOs all working together to address problems in Africa.

The Army’s two Combat Development Centers at the National Training Center and the Joint Readiness Training Center are expanding the duration of their rotations and including additional scenarios which feature the use of inter-agency actors. Congress and the Obama administration are also encouraging federal agencies to improve collaboration on cross-agency, high priority goals. **(Leadership Development)**



THE COLLEGE OF WILLIAM & MARY



SURFACE SENSORS AND COMBAT SYSTEMS FACILITY AT NSWC DAHLGREN

2. Develop a strategy to close Navy identified strategic development gaps. The Commonwealth should fully embrace and understand the Chief of Naval Operations (CNO) commitment to developing a new generation of Navy strategists, captured in the Navy’s reinvigorated Navy Strategic Enterprise. Assess why Vir-

ginia is not a significant center of Navy strategic thought, despite the location of the Navy Warfare Development Command, Joint Forces Staff College, NATO ACT, and other centers of strategic development. Determine gaps in strategic development at the Naval War College, RI, Naval Post Graduate School, CA, OPNAV’s Strategic Studies Group, DC, and other places such as N3/N5. **(Leadership Development)**

3. Support expanding the RDTE mission at NSWC Dahlgren. The Navy will likely consolidate Space and Naval Warfare Systems Command (SPAWAR) and research labs in the next BRAC round. Develop an initiative that supports NSWC Dahlgren’s goals to “develop and implement an integrated human capital strategy that aligns recruiting, develop-

ment, recognition and retention with Dahlgren Division mission priorities and critical talent needs; establish/evolve training, academic education, and apprenticeship programs that are aligned to NSWCDD strategic thrusts and core work areas and that sustain our technical capabilities and organizational values; and develop strategies and initiatives that foster a workplace environment and employee experience that make NSWCDD an employer of choice throughout government and industry.” **(Leadership Development)**

4. Accelerate efforts to pursue a cyber security mission for the Virginia Air National Guard.

Virginia is competing for an Air National Guard cyber forces mission in Hampton Roads. The Director of the ANG will announce the final four units to be assigned cyber missions in FY17. The Air Force Cyberspace Vulnerability Assessment/Hunter (CVA/Hunter) weapon system executes vulnerability, compliance, defense and non-technical assessments, best practice reviews, penetration testing and Hunter missions on Air Force and DOD networks and systems. The 74 person team would support the Air Force mission with 39 people assigned to a Cyber Protection Team supporting USCYBERCOM. *(RDTE - Cyber)*



USCYBERCOM

5. Host the persistent training environment USCYBERCOM in Suffolk.

The Department of Defense is currently doing a Capability Based Assessment (CBA) to help define the Persistent Training Environment (PTE). The PTE will establish an environment for the Military Service based teams to be able to fight. Virginia is perfectly positioned to host both the environment continually and surge for large scale exercises such as Cyber Guard and Cyber Flag. Currently the Joint I/O Range is based in Suffolk and is hosting the Cyber Guard exercises in June 2015. Suffolk has thousands of square feet of SCIF place, ample supply of lodging, and easy access from multiple airports. Virginia is the ideal location to host the PTE as it is far enough from DC for participants to focus on the exercise but not too far for Senior Officials from USCYBERCOM and the Pentagon to participate. *(RDTE – Cyber)*



VIRGINIA MODELING, ANALYSIS, AND SIMULATION CENTER, SUFFOLK

6. Develop partnerships with industry and academia to strengthen and expand the Navy's current cyber portfolio with an academic/joint/inter-agency Center of Excellence.

DOD continues to fail to embrace the domain in a more joint way with cyber as a truly cross-service issue. This may present an opportunity well suited for Old Dominion University or Virginia Tech. Fully embrace the Navy's renewed emphasis on cyber operations. Separately, determine precisely how Navy commands in Virginia already align their cyber activities under the Navy's new, single Navy CYBERSAFE authority. Navy Information Dominance Forces at Suffolk is growing and there is fertile ground to leverage in Northern Virginia and Charlottesville with inter-agency and university partners. *(RDTE – Cyber)*

7. Increase Commonwealth involvement in autonomous system development.

The development of semi and fully autonomous systems will dramatically change the military and civilian sectors. This area of research is rapidly emerging and innovation in hardware, software, and system integration is critical. Sensors, command and control, data analytics, and manufacturing are all areas ripe with opportunity. The density of academic, joint interagency, intergovernmental, and multinational organizations already involved with autonomous systems research in the Hampton Roads and Northern Virginia areas is a strength that must be leveraged. The newly formed Mid-Atlantic Aviation Partnership (MAAP) led by Virginia Tech was awarded one of six FAA UAS Test Sites. The MAAP is tasked with helping the FAA integrate unmanned systems into the national air space. This is one of many opportunities where Virginia can take the lead in the development of autonomous systems. *(RDTE – Autonomous Systems)*

8. Support expanding the Aviation Applied Technology Directorate's (AATD) mission at Fort Eustis and increase support for joint research with the NASA Langley Research Center and the DOE Jefferson Lab. Advanced rotorcraft research and development is currently being conducted in the Commonwealth, but the efforts are not coordinated and compete with research in other states. The Army's AATD, NASA Langley Research Center and Jefferson Lab are all engaged in research that can be leveraged to achieve the White House and DOD S&T goals for the development of advance rotorcraft technologies. *(RDTE - Autonomous Systems)*

9. Compete for a National Network for Manufacturing Innovation (NNMI) Institute. The NNMI is designed to tackle barriers to rapid and efficient development and commercialization of new advanced product and manufacturing-process innovations. The individual Institutes are intended to help companies collaborate and access the capabilities of research universities and other science and technology organizations to support scaling up manufacturing and assembly processes. The next funding opportunity is for a Flexible Hybrid Electronics Institute that will partner with the Department of Defense. The proposals are due May 29, 2015. Virginia can take advantage of numerous existing assets like the Virginia Modeling, Analysis and Simulation Center to develop a proposal for this funding opportunity or for manufacturing the next generation of Modeling, Simulation and Visualization technology. *(RDTE - Modeling, Analysis and Simulation)*



JEFFERSON LAB

10. Develop a proposal to leverage the capabilities at the Virginia Modeling, Analysis and Simulation Center (VMASC) to help DOD improve war gaming and virtual and constructive training. ACC and TRADOC recently held conferences and symposiums in Hampton Roads to discuss Live, Virtual and Constructive capabilities. As the military services look for ways to improve war gaming, live, virtual and constructive training and optimize scarce readiness dollars, the DOD can leverage the VMASC, a university-wide multi-disciplinary research center that emphasizes modeling, simulation, and visualization research, development and education. *(RDTE - Modeling, Analysis and Simulation)*

11. Investigate opportunity to conduct logistics optimization RDTE at Fort Lee and Fort Belvoir. Fort Belvoir is home to the Defense Logistics Agency and Fort Lee is the Army Sustainment Center of Excellence, a focused training base for military supply, subsistence, maintenance, munitions, transportation and more. In addition to the Combined Arms Support Command, Fort Lee hosts the Army Logistics University, the U.S. Army Ordnance School, the U.S. Army Quartermaster School and the U.S. Army Transportation School. Emerging technologies will enable increased efficiency and reduced demand through lower fuel consumption, decreased waste generation, efficient storage, power and energy generation, and timely and agile logistics and precision resupply. Production at the point of need such as water generation on demand, 3D printing, and additive manufacturing reduces the logistical footprint, shortens mean time to repair, increases operational availability, and reduces the need for intermediate staging bases. *(RDTE - Training)*

12. Implement Military Infrastructure Bonding Authority.

The DOD military construction budget has been cut by 50% over the past few years as the Department completed implementation of the 2005 BRAC round. Spending on infrastructure is a low priority with the DOD struggling under severe budget cuts and sequestration. Older structures at many of Virginia’s military bases are badly in need of refurbishment and efficiency upgrades. The Commonwealth is proud to host more than two dozen major military installations, all with their own unique missions. These installations account for a total economic impact of over \$60 billion and account for hundreds of thousands of jobs. With future defense spending cuts and the threat of an additional base closure round in the near future, in 2015 Virginia enacted legislation authorizing the use of state bonds to support capital investments to improve military installations. In addition to helping enhance and attract future military missions, capital investment in and around the state’s military installations can act as a catalyst for economic development in the local communities. Projects would be carefully selected to enhance the military value of each installation as defined by Base Realignment and Closure Commission (BRAC) criteria while at the same time also benefiting either or all of state government, the private sector and academia in alignment with the Commonwealth’s goals of growth and opportunity. *(Investment)*

13. Fully utilize the suite of authorities enabling increased use of shared services.

The state should conduct a targeted review, on a Commonwealth-wide basis, of the top unfunded military

construction requirements for potential public-private partnerships, utilizing both the new Section 331 authority (enhanced intergovernmental support agreements) and other authorities, including Enhanced Use Lease (EUL). EULs have the potential to generate millions of dollars from third-party developers - dollars that can be used to revitalize facilities and infrastructure on our military bases. The objective is to entice compatible industries

(those that can support existing or future missions at the base) to locate on the base. Virtually every Virginia installation has property available for EULs. *(Investment)*



GOVERNOR McAULIFFE AT MCB QUANTICO



F-35 JOINT STRIKE FIGHTER

14. Support expanding the Rivanna Station Integrated Intelligence Campus.

Rivanna has enjoyed tremendous growth since 2001 and there are opportunities to acquire more land and move the JAG school from the University of Virginia campus to the installation. This could be a win-win for both the University and the DOD. Future DOD, Army and Intelligence Community (IC) big data initiatives combined with Rivanna’s unmatched infrastructure make Rivanna a logical choice for investment. *(Investment)*

15. Continue efforts to bring the F-35 Joint

Strike Fighter to Virginia. Engage the Military Airspace and Range owners directly to determine what they need for the region to be a joint “Full Spectrum” training environment for 5th generation fighter aircraft. Virginia can then invest in facilities to attract the home basing of 5th generation fighter aircraft at NAS Oceana and Langley AFB. Top priorities should include the revival of the Navy’s effort to construct an Outlying Landing Field and construction of a joint EW and Full Spectrum Operations Range. *(Investment)*

16. Promote Langley AFB as a home base for additional aircraft. With the Air Force’s proposals to reduce the fighter force (example: A-10s) to meet Budget Control Act objectives, there is a high probability that at least one combat air force base will close or consolidated in the near future. The Commonwealth should develop a plan to relocate those combat aircraft to the underutilized flight line facilities at the crown jewel of Air Combat Command, Langley Air Force Base. *(Maximizing Military Value)*

17. Support expanding Joint Service and Special Operations Command training opportunities for Fort AP Hill. We recommend that the Commonwealth work in the short term with Fort AP Hill on two initiatives. 1) a regional campaign to educate military training leaders for each Service and special operations forces on the unique and recently expanded training capabilities available at Fort AP Hill; and 2) a review of the JLUS with Fort AP Hill leadership to determine opportunities for the Commonwealth to contribute resources to address land or noise concerns raised in the report. In addition, the Commonwealth should request from local Special Operations commanders a list of specific capabilities that would satisfy training requirements for forces currently being met by geographically separated sites. *(Maximizing Military Value)*

18. Facilitate additional mission growth at Fort Belvoir. Fort Belvoir can continue to grow as long as its transportation infrastructure and fiber optics can support more administrative and headquarters centered missions. DOD will again scrutinize leased space in the National Capital Region during the next BRAC round. Andrews AFB, Fort Meade and JB Anacostia may

be considered to gain personnel from lease space but these locations are essentially at full capacity. The State should consider investment in a Metro or a VRE spur to Fort Belvoir to encourage future growth there. *(Maximizing Military Value)*

19. Support establishing Underwater, Surface and Airborne Unmanned and Autonomous

Testing Range at the Third Port and Felker Field at Fort Eustis. The Army’s Training and Doctrine Command (TRADOC) at Fort Eustis is the leader of concept development in robotics and autonomous vehicle research with support from the Research, Development & Engineering Command (RDECOM) at Aberdeen Proving Grounds. Third Port is a deep-water port that provides a safe harbor for the Army’s watercraft fleet of 62 vessels and serves as a deployment platform for Army units. In addition, it is a joint service training facility for watercraft operators and cargo handlers. With the rising importance of Army watercraft research and operations, the Third Port at Fort Eustis is a tremendous asset for the Army. It already hosts training by US Special Operation

Command, US Coast Guard and has been the site of technology demonstrations for the Navy’s Autonomous Ship program. Unlike naval forces that are designed, manned, equipped, and trained to conduct operations at sea, Army watercraft are designed, manned, equipped, and trained as part of the land force. Army watercraft will provide future Army forces with the ability to move beyond the two-dimensional air-land mindset to one that is based on true cross-domain operations. The Aviation Applied Technology Directorate is a tenant activity located at Felker Field on Fort Eustis. The main thrust of this Directorate is to demonstrate the application of effective, affordable



94TH FIGHTER SQUADRON F-22AZ APPROACHING LANGLEY FIELD



FORT A.P. HILL

technology for current and future Army Aviation systems; and to transition critical technologies that enhance and sustain Army Aviation as the premiere land force aviation component in the world. The Army can leverage these assets for RDTE of unmanned and autonomous land, water and aircraft technologies. NASA Langley Research Center, located a few miles southeast is a leader in unmanned and autonomous systems research. *(Maximizing Military Value)*

20. **Support development of additional overhaul and repair opportunities for submarines.** Working with Navy shipyard and Newport News Shipbuilding leadership, the Commonwealth should immediately pursue additional effort to support vocational training (i.e. welders, electricians and ship fitters) to support current and projected increased workload for ship construction and repairs. The Norfolk Naval Shipyard recently announced as a top priority an effort to hire 1,500 civilian workers across more than 20 trades by September 2015. Partnering efforts with the Tidewater Community College should be expanded in first half of 2015 as finding skilled trades workers may end up being a debilitating challenge with so many ship-repair facilities in the port of Hampton Roads. The Commonwealth should also work with Newport News Shipbuilding to determine what can be done to bring overhaul work of attack submarines to the State. *(Investment)*



USS NIMITZ IN DRYDOCK AT NORFOLK NAVAL SHIPYARD



WELDER AT NORFOLK NAVAL SHIPYARD

Way Ahead

Another round of BRAC, or BRAC like activity, will likely be authorized within the next few years; the Commonwealth must be ready when it finally comes. Our report incorporates and builds upon the recommendations from the 2013 base-line study of several military installations. In the confidential portion of the report, we detail the approach, methodology and findings of the SWOT analysis. We provide a range of recommendations, the majority of which are achievable within a seven year time horizon, and conclude that Virginia's military missions and installations are well-positioned for growth.



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