Appendix A – Natural Resources Coordination

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National Marine Fisheries Service Coordination

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DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND
1333 ISAAC HULL AVENUE SE STOP 5013
WASHINGTON NAVY YARD DC 20376-5013

IN REPLY REFER TO
5090
SER 405/660
December 5, 2013

Mr. John Bullard
Regional Administrator
NOAA Fisheries Service
Northeast Region
55 Great Republic Drive
Gloucester, MA 01930

Dear Mr. Bullard:

Subj: SPECIES LIST FOR WALLOPS FLIGHT FACILITY BIOLOGICAL ASSESSMENT FOR TESTING HYPERVELOCITY PROJECTILES AND AN ELECTROMAGNETIC RAILGUN

The United States Navy (Navy), in cooperation with the National Aeronautics and Space Administration (NASA), is preparing an Environmental Assessment/Overseas Environmental Assessment (EA/OEA) for testing of hypervelocity projectiles (HVPs) and an electromagnetic (EM) railgun at Wallops Flight Facility (WFF), Accomack County, Virginia. The proposed action is to install a 5" powder gun and an EM railgun at WFF, test HVPs, integrate HVPs with the EM railgun, and then integrate an HVP/EM railgun weapon system with combat systems equipment currently in use on Navy warships. This requires firing from WFF's Wallops Island at offshore targets in the Virginia Capes Range Complex (see Enclosures 1, 2, and 3).

In accordance with 50 CFR 402.12 (c) and (d), the Navy has prepared a list of federally protected threatened and endangered species that have the potential to be found within the nearshore firing area(see Enclosure 2). The enclosed species list (Enclosure 4) was compiled based on known occurrences of federally-protected threatened and endangered species in the area and NASA's and the Navy's previous consultations with the National Marine Fisheries Service.

The proposed action would include onshore, nearshore, and offshore components. Offshore components are covered in ongoing consultations for the *Atlantic Fleet Training and Testing Final Environmental Impact Statement/Overseas Environmental Impact Statement* (Appendix C). Therefore, this coordination concerns elements of the proposed action that may affect species found nearshore, within 3 nautical miles of Wallops Island. The 3-nautical mile limit coincides with the shoreward boundary of the

SUBJ: AUTHORIZATION TO USE MILITARY EXEMPTION FOR THE FTS ILLUMINATOR LASER, ALSO KNOWN AS THE FINE TRACK SENSOR ILLUMINATORS

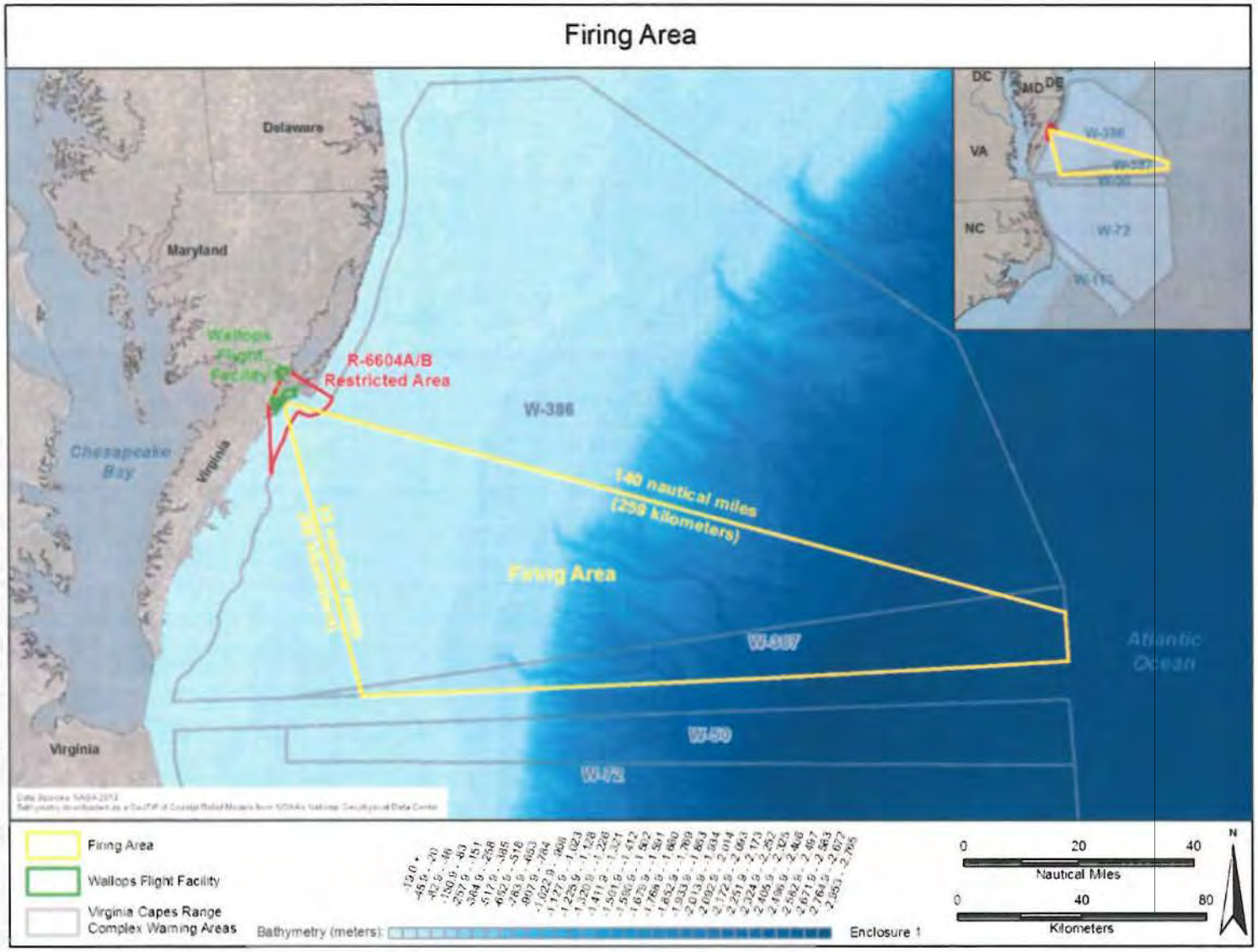
Virginia Capes Range Complex depicted on Enclosure 2. The Navy is also coordinating with the U.S. Fish and Wildlife Service (USFWS) Virginia Field Office concerning elements of the proposed action that may affect onshore species under their jurisdiction, including nesting sea turtles.

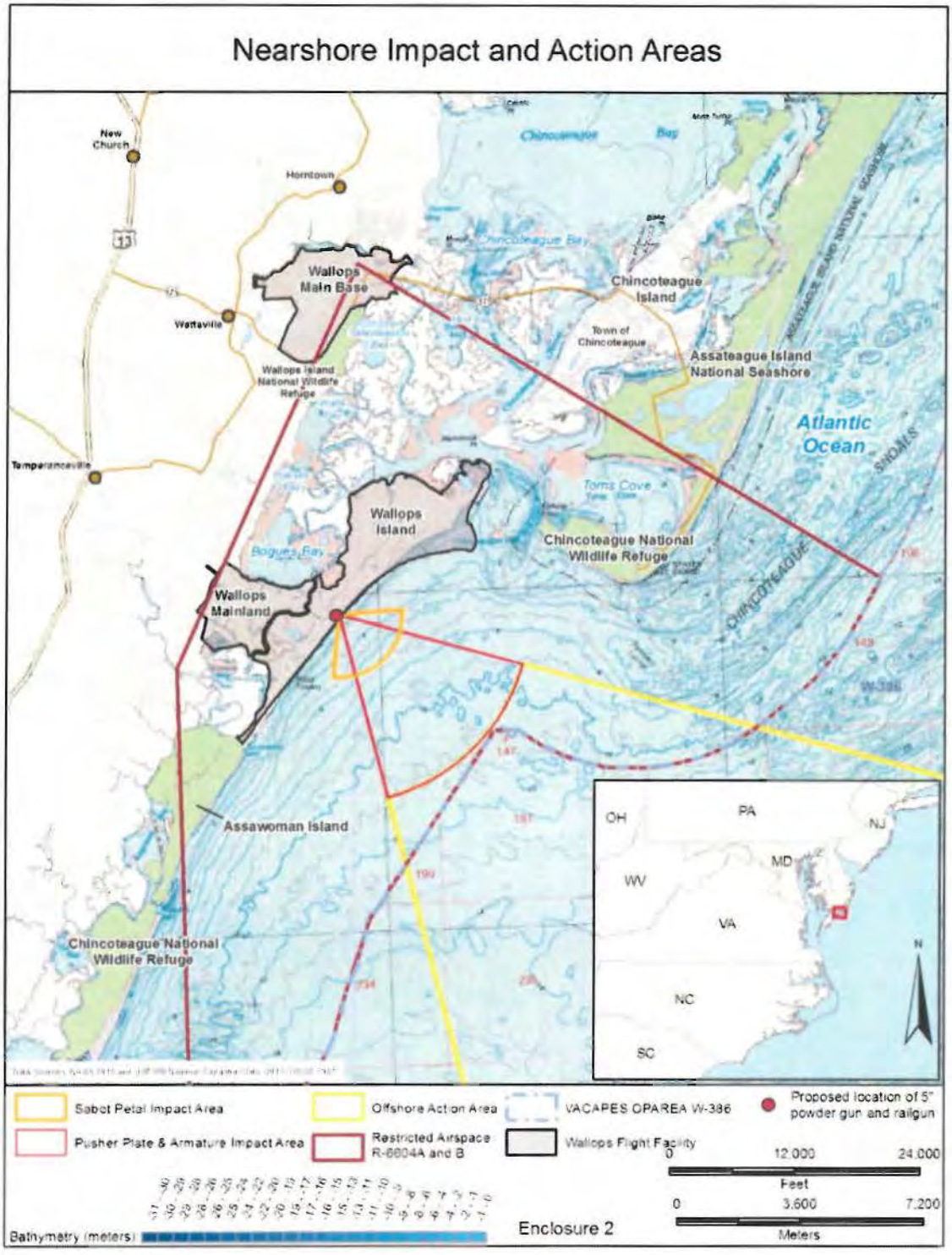
We are requesting written or verbal comment on Enclosure 4 within 30 days of your receipt of this letter. If we have not received a response within that time, we will assume that you concur with the list we have provided and will proceed accordingly.

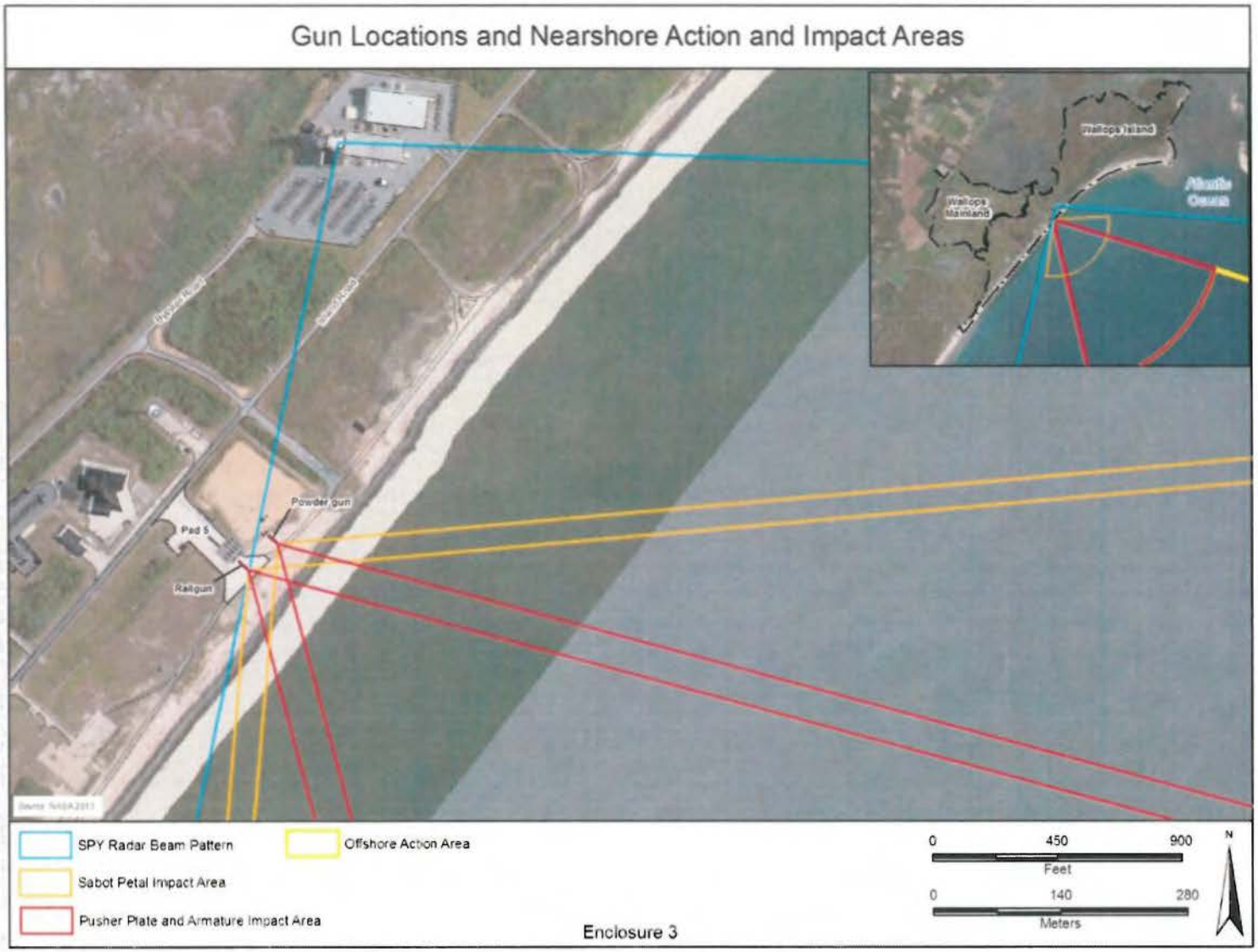
We appreciate your consideration of our request. Our point of contact for this matter is Ms. Nora Gluch who can be reached at 202-781-5274 or Nora.Gluch@navy.mil .

Sincerely,

M. ZIV
Captain, U.S. Navy
Program Manager PMS 405
Directed Energy & Electric Weapon Systems


Firing Area
Delaware
Maryland
Virginia
Chesapeake Bay
Wallops Flight Facility
R-6604A/B Restricted Area
W-386
140 nautical miles (259 kilometers)
Firing Area
W-49W
W-49
W-72
Atlantic Ocean
DC
MD
DE
VA
NC
W-72
Firing Area
Wallops Flight Facility
Virginia Capes Range Complex Warning Areas
Bathymetry (meters):
Enclosure 1
0 20 40
Nautical Miles
0 40 80
Kilometers
N


Nearshore Impact and Action Areas
New Church
Horntown
Wattsville
Temperanceville
Wallops Main Base
Wallops Island National Wildlife Refuge
Chincoteague Island
Town of Chincoteague
Assateague Island National Seashore
Atlantic Ocean
Wallops Island
Chincoteague National Wildlife Refuge
Wallops Mainland
Assawoman Island
Chincoteague National Wildlife Refuge
OH
PA
NJ
MD
WV
VA
NC
SC
N
Sabot Petal Impact Area
Pusher Plate & Armature Impact Area
Offshore Action Area
Restricted Airspace R-6604A and B
VACAPES OPAREA W-386
Wallops Flight Facility
Proposed location of 5" powder gun and railgun
0
12,000
24,000
Feet
0
3,600
7,200
Meters
Bathymetry (meters)
Enclosure 2


Gun Locations and Nearshore Action and Impact Areas
Wallops Island
Wallops Mainland
Atlantic Ocean
Powder gun
Pad 5
Railgun
SPY Radar Beam Pattern
Offshore Action Area
Sabot Petal Impact Area
Pusher Plate and Armature Impact Area
0
450
900
Feet
0
140
280
Meters
N
Enclosure 3

Enclosure 4: ESA-listed Species Potentially Found in the Wallops Island Project Area

Common Name	Scientific Name	Federal Status	Likelihood of Occurrence
FISH			
*Atlantic Sturgeon	*Acipenser o. oxyrinchus*	Endangered	Known to occur
SEA TURTLES			
*Loggerhead Sea Turtle	*Caretta caretta*	Threatened	Known to occur
Leatherback Sea Turtle	*Dermochelys coriacea*	Endangered	Possible
Kemp's Ridley Sea Turtle	*Lepidochelys kempi*	Endangered	Possible
Atlantic Green Sea Turtle	*Chelonia mydas*	Threatened	Possible
MAMMALS			
*Humpback Whale	*Megaptera novaeangliae*	Endangered	Known to occur
*Fin Whale	*Balaenoptera physalus*	Endangered	Known to occur
North Atlantic Right Whale	*Eubalaena glacialis*	Endangered	Possible

Notes:
*Species has been directly observed at WFF or offshore of Accomack County.
1. The hawksbill sea turtle (*Eretmochelys imbricate*) is a circumtropical species typically occurring between 30°S latitude and 30°N latitude in the Atlantic. They have been sighted as far north as Massachusetts, but have never been directly observed by WFF personnel and are extremely unlikely to occur in the proposed action area.

-----Original Message-----
From: Daniel Marrone - NOAA Federal [mailto:daniel.marrone@noaa.gov]
Sent: Tuesday, January 07, 2014 1:50 PM
To: Gluch, Nora CIV NAVSEA 04, 04RE
Subject: Species List for Wallops Flight Facility BA

Hi Nora,
This is in response to your letter dated December 5, 2013, regarding comments on the species list provided for the EA on testing HVPs and EM railgun at Wallops Flight Facility. We suggest including all five distinct population segments of Atlantic sturgeon on the list (Enclosure 4) that you provided of species potentially found in the Wallops Island Project Area. We concur that the species of sea turtles and whales you have on the list will be present in the action area.

Five distinct population segments (DPSs) of Atlantic sturgeon (Acipenser oxyrinchus oxyrinchus) may be present in the action area. Atlantic sturgeon originating from the New York Bight, Chesapeake Bay, South Atlantic and Carolina DPSs are listed as endangered, while the Gulf of Maine DPS are listed as threatened (77 FR 5880; 77 FR 5914; February 6, 2012). The marine range of all five DPSs extends along the Atlantic coast from Canada to Cape Canaveral, Florida.

As listed species are likely to be present in the vicinity of the proposed project, a consultation, pursuant to Section 7 of the Endangered Species Act (ESA) of 1973, may be necessary. As project plans develop, we recommend you consider the effects of the project on sea turtles, whales, and sturgeon.

The Navy will be responsible for determining whether the proposed action is likely to affect listed species. When project plans are complete, the Navy should submit their determination of effects, along with justification for the determination, and a request for concurrence to the attention of the Section 7 Coordinator, NMFS, Northeast Regional Office, Protected Resources Division (PRD), 55 Great Republic Drive, Gloucester, MA 01930. After reviewing this information, NMFS would then be able to conduct a consultation under section 7 of the ESA.

Please let me know if you have any questions.

Thanks,

Dan

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930-2276

AUG 13 2014

Captain Michael Ziv
Program Manager PMS 405
Directed Energy & Electric Weapon
Department of the Navy
Naval Sea Systems Command
1333 Isaac Hull Avenue SE Stop 5013
Washington Navy Yard, DC 20376

Re: Section 7 consultation for testing hypervelocity projectiles and an electromagnetic railgun at Wallops Flight Facility

Dear Captain Ziv,

We have completed our consultation under section 7 of the Endangered Species Act (ESA) in response to your letter received on June 17, 2014. We concur with your determination that the proposed project is not likely to adversely affect any species listed by us as threatened or endangered under the ESA of 1973, as amended. Our supporting analysis is provided below.

Proposed Project
You are proposing to install a 5"powder gun and an electromagnetic (EM) railgun to test hypervelocity projectiles (HVPs) at Wallops Flight Facility (WFF), Accomack County, Virginia. Two guns will be installed on WFF's Wallops Island and will fire at targets installed in the Virginia Capes Range Complex in the Atlantic Ocean (Figure 1). The project will go on for five years.

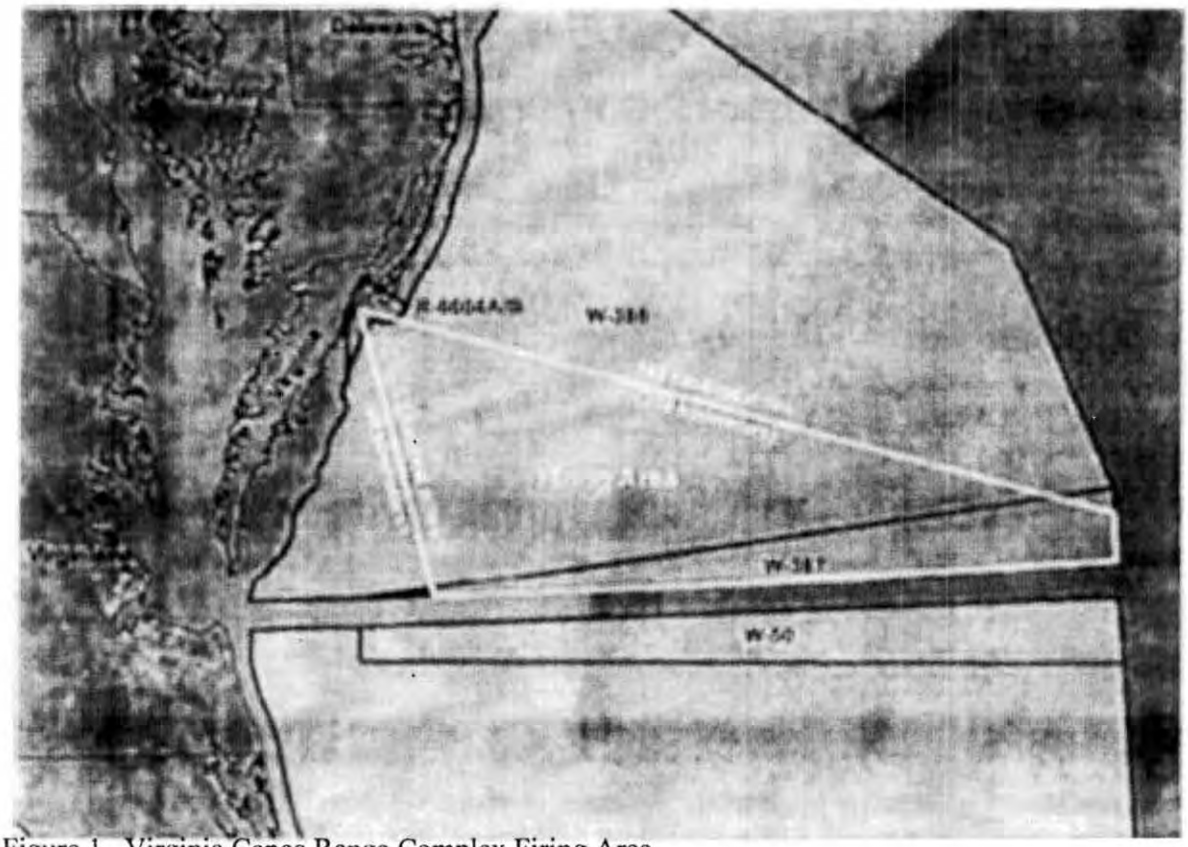

Figure 1. Virginia Capes Range Complex Firing Area

One of the guns that will be installed is a MK 45 Mod 4 Proof of Concept 5" powder gun. This gun will fire projectiles at speeds up to 2,908 miles per hour and ranges to approximately 35 nautical miles. Projectiles are anticipated to be guided and include telemetry. An EM railgun will also be installed and will fire HVPs at speeds up to 4,474 miles per hour and ranges to 100 nautical miles.

The types of projectiles that will be tested include:

- Inert, which will contain no explosives and will be used to test guidance and control.
- Kinetic energy dispensing variant, which will be used against air targets. This variant will contain 0.2 pound (0.1 kilogram) of explosives to burst the casing of the projectile and dispense tungsten pellets.
- High-explosive variant, which will contain 2 pounds (0.9 kilogram) of explosives. High explosive projectiles will be used against water surface targets and are intended to burst and fragment just prior to striking the target. Underwater explosions are not planned or expected.

Magnetic fields created by high electrical currents accelerate a sliding metal conductor, or armature, between two rails to launch the projectiles out of the gun. Armatures weigh approximately 5.5 to 6.6 pounds and are made of aluminum. They come off the projectile after

firing, hitting the water a minimum of 600 feet to a maximum of 3 nautical miles from the gun in the direction of fire.

Each projectile has four aluminum (likely to transition to a lighter carbon-composite material in the future) sabots that surround the projectile and hold it in place while it is in the gun. Each sabot petal is 22 inches by 3.5 inches and weighs approximately 3.5 pounds. When a projectile is fired, the sabots come off and hit the water from a minimum of 600 feet to a maximum of 1 nautical mile from the gun in the direction of the target. The titanium pusher plate holds pressure in to propel the projectile out of the gun, detaching and hitting the water from a minimum of 600 feet to a maximum of 3 nautical miles from the gun in the direction of the target. The pusher plate is a disc, 5 inches x 1.5 inches in size and weighs 2.2 pounds.

Table 1 shows the proposed average annual number of projectiles to be used over the five program years. Tests will take place over one or two day periods, with firings averaging five projectiles per test day. The Navy will fire the 5" powder gun or the EM railgun during approximately 20 days annually in the first and second years, approximately 30 days annually in the third and fourth years, and approximately 50 days annually in the fifth year.

Projectile Types	Year 1	Year 2	Year 3	Year 4	Year 5
Inert	100	100	100	100	200
Kinetic Energy	0	0	40	40	40
High Explosive	0	0	10	10	10
Total Number	100	100	150	150	250

Table 1. Average annual number of projectiles to be used

Description of the Action Area

The proposed project is located in the Atlantic Ocean off of the coast of Virginia (Figure 1.). The action area is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR§402.02). For this project, the action area includes the project footprint where the guns will be firing and the area of the Atlantic Ocean where projectiles will enter the water. This area is expected to encompass all effects of the proposed action.

NMFS listed species in Action Area

Marine Mammals

Several listed species of whales occur seasonally in the waters off of Virginia. Federally endangered North Atlantic right whales (*Eubalaena glacialis*) are found off the coast of Virginia from September 1 – March 31. Federally endangered humpback whales (*Megaptera novaeangliae*) are found off the coast of Virginia from February – April and from September – November. Fin (*Balaenoptera physalus*) and Sei whales (*Balaenoptera borealis*) are also seasonally present in waters off of Virginia.

Sea Turtles
Four species of ESA-listed threatened or endangered sea turtles under the jurisdiction of NMFS may be found seasonally in the coastal waters of Virginia: the threatened Northwest Atlantic distinct population segment (DPS) of loggerhead (*Caretta caretta*), and the endangered Kemp's ridley (*Lepidochelys kempi*), green (*Chelonia mydas*) and leatherback (*Dermochelys coriacea*) sea turtles. Sea turtles are expected to be in Virginia waters during warmer months. This typically equates to April through November.

Atlantic sturgeon
Atlantic sturgeon originating from the New York Bight, Chesapeake Bay, South Atlantic and Carolina DPSs are listed as endangered, while those from the Gulf of Maine DPS are listed as threatened. The marine range of all five DPSs extends along the Atlantic coast from Canada to Cape Canaveral, Florida.

Atlantic sturgeon spawn in their natal river, with spawning migrations generally occurring during February-March in southern systems, April-May in Mid-Atlantic systems, and May-July in Canadian systems (Murawski and Pacheco 1977; Smith, 1985; Bain 1997; Smith and Clugston 1997; Caron *et al.* 2002). Young remain in the river/estuary until approximately age 2 and at lengths of 30-36 inches before emigrating to open ocean as subadults (Holland and Yelverton 1973; Dovel and Berggren 1983; Dadswell 2006; ASSRT 2007). After emigration from the natal river/estuary, subadults and adult Atlantic sturgeon travel within the marine environment, typically in waters between 16 to 164 feet in depth, using coastal bays, sounds, and ocean waters (Vladykov and Greeley 1963; Murawski and Pacheco 1977; Dovel and Berggren 1983; Smith 1985; Collins and Smith 1997; Welsh *et al.* 2002; Savoy and Pacileo 2003; Stein *et al.* 2004; Laney *et al.* 2007; Dunton *et al.* 2010; Erickson *et al.* 2011).

The distribution of Atlantic sturgeon, from any DPS, is strongly associated with prey availability. As a result, Atlantic sturgeon may occur where suitable forage (e.g., benthic invertebrates such as mollusks and crustaceans) and appropriate habitat conditions (e.g., areas of submerged aquatic vegetation (SAV)) are present. Based on the best available information, sub adult and adult Atlantic sturgeon originating from any of five DPSs could occur in waters off the coast of Virginia. Juveniles and early life stages of Atlantic sturgeon are not able to withstand the salinity of marine and coastal waters and would not be present in action area. Based on the best available information, Atlantic sturgeon originating from any of the five DPSs may occur in the action area.

Effects of the Action
Direct effects from the proposed action to ESA-listed species could occur if expended munitions parts (armatures, pusher plates, and sabots) strike an ESA-listed species when they fall into the ocean.

The potential for sea turtles and whales to be struck by military expended materials was evaluated using statistical probability modeling to estimate the likelihood. Specific details of the modeling approach including model selection and calculation methods can be found in Appendix G (Statistical Probability Model for Estimating Direct Strike Impact and Number of Potential

Exposures) of the AFTT FEIS/OEIS (Navy 2013), which describes the methodology used in the AFTT analysis for impacts from strikes to ESA-listed species in the offshore area. Input values include munitions data (frequency, footprint, and type), size of the training and testing area, species density data, and size of the animal (area of potential impact). The same methods were used for the nearshore strike analysis for this consultation.

The analysis of the potential for a sea turtle/marine mammal strike is influenced by the following assumptions:

- The model is two-dimensional and assumes that all sea turtles and marine mammals would be at or near the surface 100 percent of the time, when in fact, sea turtles and marine mammals spend most of their time submerged (Renaud and Carpenter 1994; Sasso and Witzell 2006; Costa and Block 2009).
- The model assumes the animal is stationary and does not account for any movement of the sea turtle/marine mammal or any potential avoidance.

Sea Turtles

There is a remote possibility that an individual turtle at or near the surface may be struck directly. Expended munitions may strike the water surface with sufficient force to cause injury or mortality. To estimate the potential to strike a sea turtle, the highest probability of a strike was calculated by: (1) totaling the impact area of sabots, pusher plates, and armatures during the fifth year of the program (when HVP firing would be at the highest level), in the respective sabot petal or pusher plate and armature impact areas, and (2) using the sea turtle species with the highest average seasonal density. These highest estimates would then provide a point of comparison for all other sea turtle species. The sea turtle species with the highest average seasonal density is the loggerhead, with an estimated average seasonal density of about 0.18 animals per square nautical mile in the fall, when its density is the highest (Navy 2012). The model results indicate a 0.0070 percent probability of sabots striking a single loggerhead sea turtle and even lower probabilities of pusher plates or armatures striking a loggerhead. Based on this information, it is extremely unlikely that expended munitions will directly strike any species of sea turtle. Therefore, the effects of the proposed action on sea turtles are discountable.

Marine Mammals

There is a remote possibility that an individual marine mammal at or near the surface may be struck directly. Expended munitions may strike the water surface with sufficient force to cause injury or mortality. To estimate the potential to strike a marine mammal, the highest probability of a strike was calculated by totaling the impact area of sabots, pusher plates, and armatures during the fifth year of the program (when HVP firing would be at the highest level), in the respective sabot petal or pusher plate and armature impact area, and using the marine mammal species with the highest average seasonal density. These highest estimates would then provide a point of comparison for all other marine mammal species. The marine mammal species with the highest average seasonal density is the harbor porpoise, with an estimated average seasonal density of about 1.32 animals per square nautical mile in the winter, when it occurs in the nearshore area off Virginia (Navy 2012). The model results indicate a 0.0075 percent probability of sabots striking a single harbor porpoise and even lower probabilities of pusher plates or armatures striking a harbor porpoise. Based on this information, it is extremely unlikely that

expended munitions will directly strike any species of marine mammals. Therefore, the effects of the proposed action on ESA-listed marine mammals are discountable.

Atlantic Sturgeon

There is a remote possibility that an individual sturgeon at or near the surface may be struck directly. Expended munitions may strike the water surface with sufficient force to cause injury or mortality. However, as mentioned above, Atlantic sturgeon are typically found in waters between 16 to 164 feet in depth. The velocity of these materials would rapidly decrease upon contact with the water and as they travel through the water column. Consequently, most fish in the water column would have ample time to detect and avoid expended materials that fall through the water column. Given the limited number of Atlantic sturgeon found directly at the surface where military expended material strikes could occur, the rare chance that a fish might be directly struck at the surface by military expended materials, the ability of most fish to detect and avoid an object falling through the water below the surface, and the low probability of strike based on the impact footprint area, it is extremely unlikely that expended material will directly strike an Atlantic sturgeon. Therefore, the effects of the proposed action on Atlantic sturgeon are discountable.

Behavioral Changes

Military expended materials that hit the water could result in a short-term and local displacement of ESA-listed species in the water column. In response to expended material, ESA-listed species may avoid the area surrounding the expended material. Given the small size of the area where the materials will hit the water and the large size of the action area, temporary avoidance of the area would involve small changes in the movement of individual animals but any changes in movement will not be detectable or measureable. These small behavioral changes are only expected to result in an immeasurable increase of energy expenditure and not cause a detectable disruption to normal behaviors such as foraging, migrating or resting. Based on this information, effects of expended materials hitting the water on whales, sea turtles, and Atlantic sturgeon will be extremely unlikely to produce any detectable changes in behavior of these species and thus all effects will be insignificant and discountable.

Conclusions

Based on the analysis that all effects to our listed species will be insignificant or discountable, NMFS is able to concur with the determination that the proposed action is not likely to adversely affect any listed species under NMFS jurisdiction. Therefore, no further consultation pursuant to section 7 of the ESA is required. Reinitiation of consultation is required and shall be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the consultation; (b) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the consultation; or (c) If a new species is listed or critical habitat designated that may be affected by the identified action. No take is anticipated or exempted. If there is any incidental take of a listed species, reinitiation would be required. Should you have any questions about this

correspondence please contact Daniel Marrone at (978) 282-8465 or by e-mail (Daniel.Marrone@noaa.gov).

Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires all Federal agencies to consult with the National Marine Fisheries Service on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH).

The EFH consultation process includes the preparation of a complete and appropriate EFH assessment to provide the necessary information on which NOAA Fisheries Service then consults. Our EFH regulation at 50 CFR 600.905 mandates the preparation of EFH assessments and generally outlines each agency's obligations in this consultation procedure. In accordance with the EFH Final Rule published in the Federal Register on January 17, 2002, federal agencies may incorporate an EFH assessment into documents prepared for another purpose provided the EFH assessment is clearly identified as a separate and distinct section of the document. The EFH assessment must include four major elements: 1) a description of the proposed actions; 2) an analysis of the effects of the actions on EFH, managed species and their prey species; 3) the federal agency's views regarding the effects of the action on EFH, and; 4) a discussion of proposed mitigation, if applicable. Other information that should be included in the EFH assessment, if appropriate, includes: 1) the results of on-site inspections to evaluate the habitat and site-specific effects; 2) the views of recognized experts on the habitat or species that may be affected; 3) a review of pertinent literature and related information; and 4) an analysis of alternatives to the action that could avoid or minimize the adverse effects on EFH. Additional information on EFH consultation process and the development of EFH assessments can be found at NOAA's Greater Atlantic Region HCD
website: http://www.greateratlantic.fisheries.noaa.gov/habitat/

Please contact Mr. David O'Brien, NOAA's Habitat Conservation Division, Virginia Field Office by phone at 804-684-7828 or email: David.L.O'Brien@noaa.gov with any questions regarding the EFH consultation process.

Sincerely,

for David Bernhart
John K. Bullard
Regional Administrator

Ec: Marrone, NMFS/PRD
O'Brien, NMFS/HCD
Wray, Navy

File Code: Navy Wallops Flight Facility
PCTS: NER-2014-11324

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U.S. Fish and Wildlife Service Coordination

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From:	Frankenthaler, Vic
To:	Mike Drummond
Cc:	Hartzell, Jeanne CIV NSWCDD, CX8; William E. Goss (william.goss@navy.mil); Woods, Carolyn J CIV NAVFAC Washington; Nora Gluch; Gagelin, Matthew CIV NAVSEA, SEA 00L; Bundick, Joshua A. (WFF-2500); shari.a.silbert@nasa.gov; Willson, Lane; Douglas, Penny; Chernoff, Helen
Subject:	Online Project Review Request, Consultation Tracking Number 05E2VA00-2014-SLI-0461
Date:	Friday, January 17, 2014 7:44:10 PM
Attachments:	Official_Species_List_VA_ESFO.pdf Bald eagle nests_Step 6a.pdf Species Conclusion Table_ Testing Hypervelocity Projectiles and EM Railgun.doc EA-OEA Summary_18 Dec 2013.pdf Figure_1_Location_of_Wallops_Flight_Facility.pdf Figure_7_Alternative_Sites.pdf

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Mr. Drummond:

The Navy has reviewed the referenced project using the Virginia Field Office's online project review process and has followed all guidance and instructions in completing the review. The Navy completed its review on January 17, 2014. AECOM, on behalf of the Navy, is submitting the project review package in accordance with the instructions for further review.

The Navy's proposed action is to install a 5" powder gun and an electromagnetic (EM) railgun; test hypervelocity projectiles (HVPs); integrate HVPs with the EM railgun; and integrate the HVP/EM railgun weapon system with combat systems equipment currently in use on US Navy warships. The proposed site for the guns is the Naval Sea System's Surface Combat Systems Center, which is located on the National Aeronautical and Space Administration's Wallops Flight Facility on Wallops Island, Virginia. The guns would fire into the Virginia Capes Range Complex in the Atlantic Ocean.

Additional details concerning the proposed action are provided in the attached environmental assessment/overseas environmental assessment summary. The location of the proposed action is identified on the attached Figures 1 and 7.

We are submitting the attached project review package for Endangered Species Act Section 7 and Eagle Act coordination for the proposed action. The attached project review package provides the information about the species, critical habitat, and bald eagles considered in the Navy's review. The species conclusions table included in the package identifies the status of the Navy's analyses for the resources that may be affected by the proposed action.

The following are attached:

- Official species list
- Bald eagle nest map
- Species conclusion table
- EA-OEA summary
- Figure 1, Location of Wallops Flight Facility
- Figure 7, Wallops Island alternative sites

Thank you.

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Please note my address has changed. Please update your address books accordingly.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
VIRGINIA ECOLOGICAL SERVICES FIELD OFFICE
6669 SHORT LANE
GLOUCESTER, VA 23061
PHONE: (804)693-6694 FAX: (804)693-9032
URL: www.fws.gov/northeast/virginiafield/

Consultation Tracking Number: 05E2VA00-2014-SLI-0461 December 04, 2013
Project Name: Testing Hypervelocity Projectiles and EM Railgun

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project.

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having

similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Testing Hypervelocity Projectiles and EM Railgun

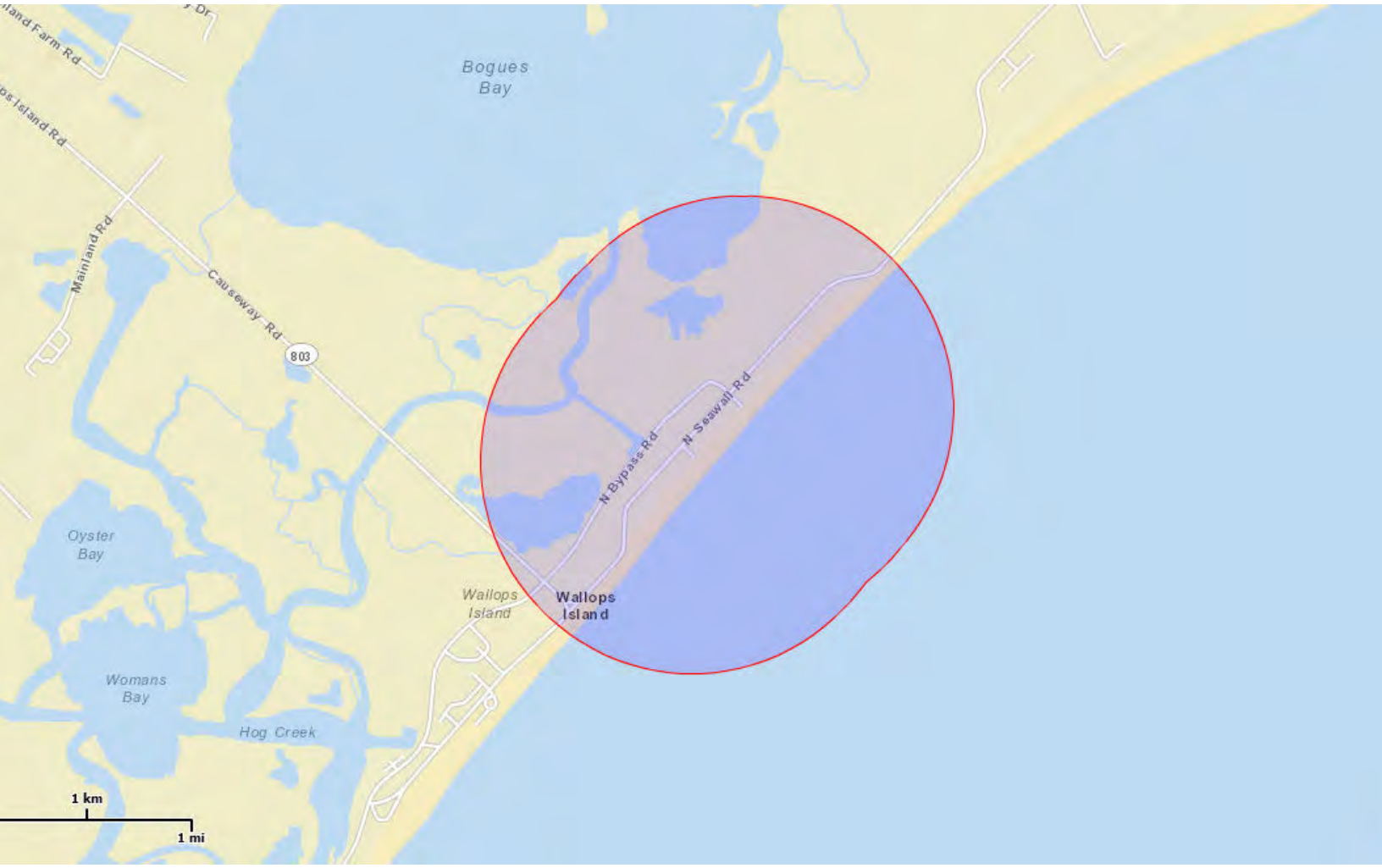
Official Species List

Provided by:

VIRGINIA ECOLOGICAL SERVICES FIELD OFFICE
6669 SHORT LANE
GLOUCESTER, VA 23061
(804) 693-6694
http://www.fws.gov/northeast/virginiafield/

Consultation Tracking Number: 05E2VA00-2014-SLI-0461
Project Type: Military Operations / Maneuvers
Project Description: The Navy proposes to install a 5 powder gun and an electromagnetic (EM) railgun; test hypervelocity projectiles (HVPs); integrate HVPs with the EM railgun; and integrate the HVP/EM railgun weapon system with combat systems. The guns would be installed at the Wallops Flight Facility and would fire into the Virginia Capes Range Complex in the Atlantic Ocean. The firing tempo would range from 100 projectiles in 2015 to 250 in 2019, averaging 5 projectiles per test day.

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-75.4695782 37.8397621, -75.4704755 37.8397616, -75.4713709 37.8398077, -75.4722607 37.8399001, -75.4731409 37.8400385, -75.4740078 37.8402222, -75.4748577 37.8404505, -75.475687 37.8407224, -75.4764921 37.8410367, -75.4772695 37.8413921, -75.478016 37.841787, -75.4787283 37.8422198, -75.4797968 37.8429911, -75.4807538 37.8438227, -75.4813006 37.8443869, -75.4817997 37.8449783, -75.482249 37.8455943, -75.4826465 37.8462323, -75.4829906 37.8468896, -75.4832797 37.8475633, -75.4835127 37.8482505, -75.4836884 37.8489484, -75.4838062 37.8496538, -75.4838656 37.8503639, -75.4838663 37.8510755, -75.4838083 37.8517856, -75.4836919 37.8524913, -75.4835175 37.8531893, -75.4832858 37.8538768, -75.482998 37.8545509, -

75.4826552 37.8552085, -75.4822588 37.855847, -75.4818106 37.8564636, -75.4807667 37.8576205, -75.4799156 37.8583701, -75.4789625 37.8590901, -75.4784466 37.8596239, -75.4778553 37.8601593, -75.476111 37.8615181, -75.4754366 37.8619877, -75.4747248 37.8624213, -75.4739788 37.862817, -75.4732018 37.8631732, -75.472397 37.8634884, -75.4715679 37.8637612, -75.4707181 37.8639903, -75.4698512 37.864175, -75.468971 37.8643142, -75.4680811 37.8644075, -75.4671854 37.8644545, -75.4662878 37.8644549, -75.4653921 37.8644088, -75.464502 37.8643163, -75.4636216 37.8641779, -75.4627544 37.8639941, -75.4619042 37.8637657, -75.4610748 37.8634937, -75.4602695 37.8631793, -75.4594919 37.8628238, -75.4587453 37.8624288, -75.4580329 37.8619959, -75.4569718 37.8612302, -75.4560149 37.8603985, -75.4554681 37.8598341, -75.4549691 37.8592426, -75.4545199 37.8586265, -75.4541226 37.8579884, -75.4537787 37.857331, -75.4534898 37.8566573, -75.4532572 37.85597, -75.4530817 37.8552721, -75.4529641 37.8545666, -75.452905 37.8538565, -75.4529046 37.8531449, -75.4529629 37.8524348, -75.4530797 37.8517292, -75.4532543 37.8510312, -75.4534862 37.8503437, -75.4537743 37.8496698, -75.4541174 37.8490122, -75.4545139 37.8483738, -75.4549623 37.8477573, -75.4554605 37.8471654, -75.4560065 37.8466007, -75.4569935 37.8456834, -75.457657 37.8451565, -75.4586079 37.8444988, -75.4590555 37.8440357, -75.4596468 37.8435004, -75.4606549 37.842698, -75.4613293 37.8422285, -75.4620409 37.841795, -75.4627867 37.8413993, -75.4635636 37.8410432, -75.4643682 37.840728, -75.465197 37.8404553, -75.4660466 37.8402262, -75.4669132 37.8400416, -75.4677932 37.8399024, -75.4686828 37.839809, -75.4695782 37.8397621)))

Project Counties: Accomack, VA

Endangered Species Act Species List

There are a total of 9 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed on the **Has Critical Habitat** lines may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Green sea turtle *(Chelonia mydas)*

Population: except where endangered

Listing Status: Threatened

Has Critical Habitat: Final designated

Hawksbill sea turtle *(Eretmochelys imbricata)*

Population: Entire

Listing Status: Endangered

Has Critical Habitat: Final designated

Kemp's Ridley sea turtle *(Lepidochelys kempii)*

Population: Entire

Listing Status: Endangered

Leatherback sea turtle *(Dermochelys coriacea)*

Population: Entire

Listing Status: Endangered

Has Critical Habitat: Final designated

Loggerhead sea turtle *(Caretta caretta)*

Population: Northwest Atlantic DPS

Listing Status: Threatened

Piping Plover *(Charadrius melodus)*

Population: except Great Lakes watershed

Listing Status: Threatened
Has Critical Habitat: Final designated

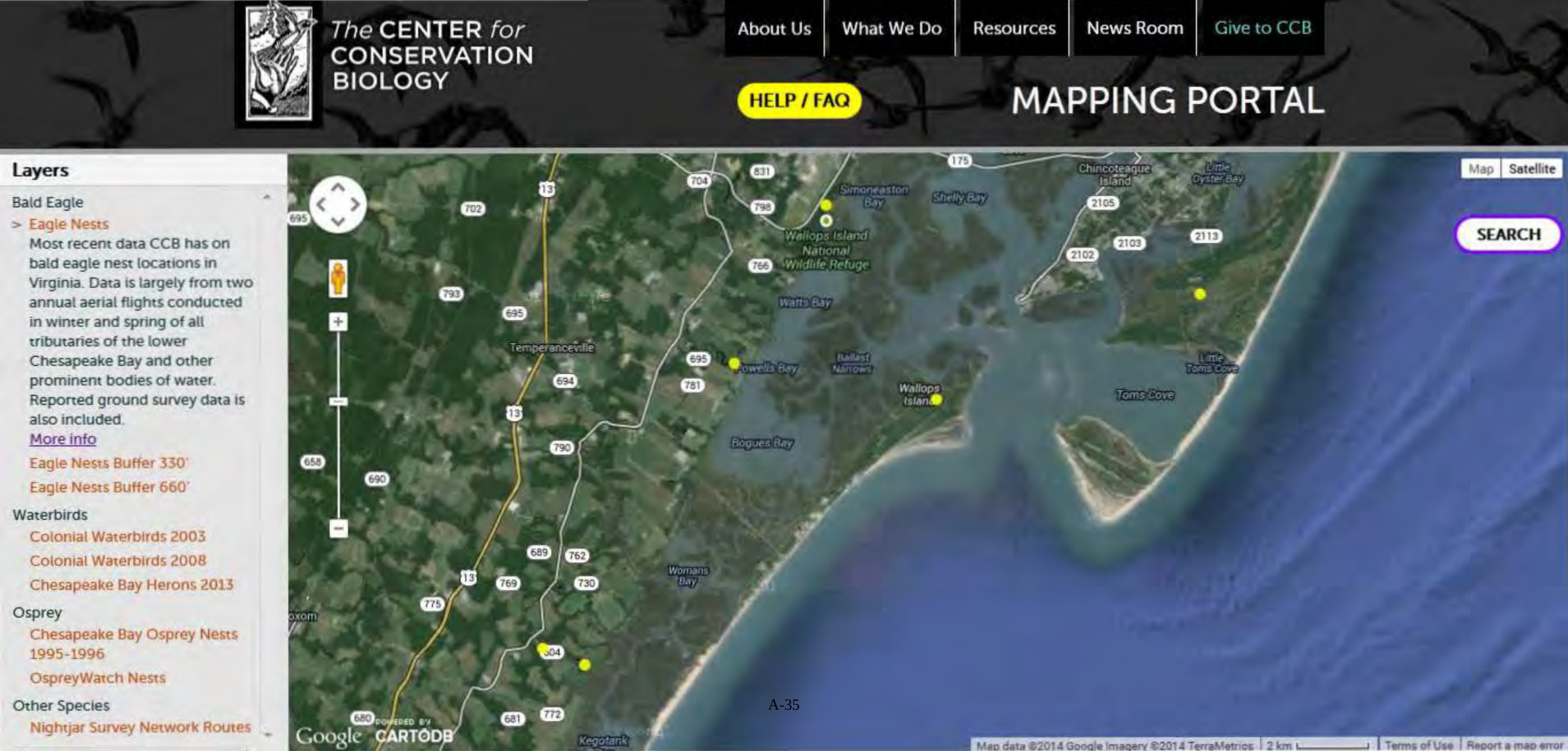
Red Knot *(Calidris canutus rufa)*
Listing Status: Proposed Threatened

Roseate tern *(Sterna dougallii dougallii)*
Population: northeast U.S. nesting pop.
Listing Status: Endangered

Seabeach amaranth *(Amaranthus pumilus)*
Listing Status: Threatened

Critical habitats that lie within your project area

There are no critical habitats within your project area.


The CENTER for CONSERVATION BIOLOGY
About Us
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MAPPING PORTAL
Layers
Bald Eagle
> Eagle Nests
Most recent data CCB has on bald eagle nest locations in Virginia. Data is largely from two annual aerial flights conducted in winter and spring of all tributaries of the lower Chesapeake Bay and other prominent bodies of water. Reported ground survey data is also included.
More info
Eagle Nests Buffer 330'
Eagle Nests Buffer 660'
Waterbirds
Colonial Waterbirds 2003
Colonial Waterbirds 2008
Chesapeake Bay Herons 2013
Osprey
Chesapeake Bay Osprey Nests 1995-1996
OspreyWatch Nests
Other Species
Nightjar Survey Network Routes
Map
Satellite
SEARCH
Temperanceville
Watts Bay
Wallops Island National Wildlife Refuge
Simoneaston Bay
Shelly Bay
Chincoteague Island
Little Oyster Bay
Ballast Narrows
Little Toms Cove
Toms Cove
Wallops Island
Bogues Bay
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Species Conclusions Table

Project Name: Testing Hypervelocity Projectiles and EM Railgun

Date: 17 January 2014

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Seabeach amaranth *(Amaranthus pumilus)*	Suitable habitat present, species not present	Analysis pending	Seabeach amaranth occupies a narrow beach zone that lies at elevations from 0.7 to 5 feet above mean high tide. Seaward, the plant grows only above the high tide line, as it is intolerant of even occasional flooding during the growing season. Landward, seabeach amaranth does not occur more than approximately 3 feet above the beach elevation on the foredune. The plant occurs behind the foredune, but only in overwash areas. Seabeach amaranth has never been documented on Wallops Island, but has been found on nearby Assateague Island. Although this species is not found on Wallops Island, suitable habitat is present. Wallops Flight Facility (WFF) currently performs annual surveys for this plant species. There were no documented occurrences of seabeach amaranth at WFF as of 2013[1,2,3,4]. WFF would continue to adhere to its Protected Species Monitoring Plan[5]. Seabeach amaranth monitoring includes plant searches and, if plants were found, protection and surveys. Any occurrences would be detailed in annual monitoring reports.

[1] National Aeronautics and Space Administration, Goddard Space Flight Center, Wallops Flight Facility (NASA). (2010). *Wallops Island protected species monitoring report, December 2010*. Wallops Island, Virginia: NASA.

[2] NASA. (2011). *Wallops Island protected species monitoring report, December 2011*. Wallops Island, Virginia: NASA.

[3] NASA. (2012). *2012 Wallops Island protected species monitoring report, Fall 2012*. Wallops Island, Virginia: NASA.

[4] NASA. (2013). *2013 Wallops Island protected species monitoring report*. Wallops Island, Virginia: NASA.

[5] NASA. (2013). *Wallops Island protected species monitoring plan*. Prepared by URS, Inc. Wallops Island, Virginia: NASA.

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Loggerhead sea turtle *(Caretta caretta)*	Species present	Analysis pending	The major loggerhead nesting concentrations in the United States occur from North Carolina to southwest Florida; however, loggerheads have been known to range northward to Virginia[6]. In 2010, four loggerhead turtle nests and two false crawls were observed on Wallops Island between 15 June and 28 July[7]. In 2011 there were no loggerhead nests on Wallops Island[8]. In 2012, two loggerhead nests and two false crawls were observed between 25 June and 12 July[9]. In 2013, two loggerheads nested on Wallops Island[10]. WFF would continue to adhere to its Protected Species Monitoring Plan[11]. Sea turtle monitoring includes crawl track observations, nest searches, and nest protection inclusive of hatchlings. Occurrences are detailed in annual monitoring reports.
Kemp's ridley sea turtle *(Lepidochelys kempii)*	Suitable habitat present, species not present Species never observed at	Analysis pending	Primary nesting beaches are located in the western Gulf of Mexico[12], although occasional nests have been documented in North Carolina, South Carolina, and the Gulf and Atlantic Coasts of Florida[13]. In 2012, a Kemp's ridley nest was discovered in

[6] National Marine Fisheries Service and U.S. Fish and Wildlife Service (NMFS and USFWS). (2008). *Recovery plan for the Northwest Atlantic population of the loggerhead sea turtle (*Caretta caretta*)*, Second revision. Silver Spring, Maryland: NMFS.

[7] NASA. (2010). *Wallops Island protected species monitoring report, December 2010*. Wallops Island, Virginia: NASA.

[8] NASA. (2011). *Wallops Island protected species monitoring report, December 2011*. Wallops Island, Virginia: NASA.

[9] NASA. (2012). *2012 Wallops Island protected species monitoring report, Fall 2012*. Wallops Island, Virginia: NASA.

[10] NASA. (2013). *2013 Wallops Island protected species monitoring report*. Wallops Island, Virginia: NASA.

[11] NASA. (2013). *Wallops Island protected species monitoring plan*. Prepared by URS, Inc. Wallops Island, Virginia: NASA.

[12] National Marine Fisheries Service, U.S. Fish and Wildlife Service, and Secretary of Environment and Natural Resources, Mexico (NMFS, USFWS, and SEMARNAT). (2010). *Bi-National recovery plan for the Kemp's ridley sea turtle (*Lepidochelys kempii*), Second revision*. National Marine Fisheries Service. Silver Spring, Maryland.

[13] NOAA Fisheries Service (NFS). (2013). Kemp's ridley turtle (*Lepidochelys kempii*). Last updated March 4, 2013 http://www.nmfs.noaa.gov/pr/species/turtles/kempsridley.htm. Accessed 2013, December 10.

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
	WFF Recorded occurrences in Virginia are very rare		Virginia for the first time at Naval Air Station Oceana, Dam Neck Annex in Virginia Beach[14,15]. Kemp's ridley sea turtles have never been observed at WFF[16,17]; however, they may occur offshore in relatively shallow waters (less than 160 feet) where habitat exists for prey species[18]. WFF would continue to adhere to its Protected Species Monitoring Plan[19]. Kemp's ridley turtles are not specifically mentioned in the monitoring plan due to the low probability of nesting, but sea turtle monitoring would also apply to any occurrences of this species.
Green sea turtle *(Chelonia mydas)*	Suitable habitat present, species not present Species never observed at WFF	Analysis pending	Green turtles mainly nest from North Carolina south, with most of the primary nesting beaches occurring in a six-county area in east central and southeastern Florida[20]. The only documented case of a green sea turtle laying a nest in Virginia occurred in 2005 on the southern part of Virginia Beach[21].

[14] Hutchins, Sarah. (2012). Biologists race to Dam Neck to shield rare turtle nest. PilotOnline.com, June 22, 2012 http://hamptonroads.com/2012/06/biologists-race-dam-neck-shield-rare-turtle-nest. Accessed 2014, January 8.

[15] USFWS Northeast Ecological Services. (2012). Sea turtle nests meet Virginia's state record. July 20, 2012 http://ne-ecological-services.blogspot.com/2012/07/sea-turtle-nests-meet-virginias-state.html. Accessed 2014, January 7.

[16] NASA. (2008). Pre-Final integrated natural resources management plan, Goddard Space Flight Center, Wallops Flight Facility. Wallops Island, Virginia: NASA.

[17] NASA. (2013). *Preliminary draft NASA WFF site-wide programmatic environmental impact statement*. Prepared by Cardno TEC, Inc. Wallops Island, Virginia: NASA.

[18] NFS. (2013). Kemp's ridley turtle (*Lepidochelys kempii*). Last updated March 4, 2013 http://www.nmfs.noaa.gov/pr/species/turtles/kempsridley.htm. Accessed 2013, December 10.

[19] NASA. (2013). *Wallops Island protected species monitoring plan*. Prepared by URS, Inc. Wallops Island, Virginia: NASA.

[20] NMFS and USFWS. (1991). *Recovery plan for the U.S. population of the Atlantic green turtle (*Chelonia mydas*)*. USFWS, Southeast Region, Atlanta, Georgia and NMFS, Washington, D.C.

[21] Marine Turtle Newsletter. (2006). *Marine turtle newsletter* (111):24, News and legal briefs. January 2006. Retrieved from http://www.seaturtle.org/mtn/PDF/MTN111.pdf as accessed 2014, January 8.

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
	Recorded occurrences in Virginia are very rare		Atlantic Green sea turtles have been observed in waters off WFF[22]. WFF would continue to adhere to its Protected Species Monitoring Plan[23]. Sea turtle monitoring includes crawl track observations, nest searches, and nest protection inclusive of hatchlings. Occurrences are detailed in annual monitoring reports.
Leatherback sea turtle *(Dermochelys coriacea)*	No records of species occurrence on WFF	Analysis not required	Leatherback nesting in the western North Atlantic is restricted to coarse-grained beaches in subtropical and tropical latitudes[24]. Along the Atlantic coast of the United States, leatherback turtles nest on beaches from southern Florida to Georgia, with occasional records from the Carolinas[25]. Leatherback nesting activity has not been reported in Virginia, although one leatherback emergence was documented in 1996 on the Assateague Island National Seashore in Maryland[26]. A potential egg chamber, but no eggs, was found. Leatherbacks have never been sighted on WFF, but are known to occur in the waters offshore of Accomack County[27,28].

[22] NASA. (2008). Pre-Final integrated natural resources management plan, Goddard Space Flight Center, Wallops Flight Facility. Wallops Island, Virginia: NASA.

[23] NASA. (2013). *Wallops Island protected species monitoring plan*. Prepared by URS, Inc. Wallops Island, Virginia: NASA.

[24] NMFS and USFWS. (1991). Recovery plan for leatherback turtles (Dermochelys coriacea) in the U.S. Caribbean, Atlantic, and Gulf of Mexico. Washington, D.C.: NMFS.

[25] U.S. Department of the Navy, Commander, U.S. Atlantic Fleet (Navy). (2003). Marine resource assessment for the Cherry Point and southern Virginia Capes (VACAPES) inshore and estuarine areas. Prepared by Geo-Marine, Inc. Norfolk, Virginia: U.S. Department of the Navy.

[26] Rabon, D.R., Jr., S.A. Johnson, R. Boettcher, M. Dodd, M. Lyons, S. Murphy, S. Ramsey, S. Roff, and K. Stewart. (2003). Confirmed leatherback turtle (*Dermochelys coriacea*) nests from North Carolina, with a summary of leatherback nesting activities north of Florida, *Marine turtle newsletter* (101):4-8, July 2003. Retrieved from http://www.seaturtle.org/mtn/PDF/MTN101.pdf as accessed 2014, January 8.

[27] NASA. (2008). Pre-Final integrated natural resources management plan, Goddard Space Flight Center, Wallops Flight Facility. Wallops Island, Virginia: NASA.

[28] NASA. (2013). *Preliminary draft NASA WFF site-wide programmatic environmental impact statement*. Prepared by Cardno TEC, Inc. Wallops Island, Virginia: National Aeronautics and Space Administration.

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
			WFF would continue to adhere to its Protected Species Monitoring Plan[29]. Sea turtle monitoring includes crawl track observations, nest searches, and nest protection inclusive of hatchlings. Occurrences are detailed in annual monitoring reports.
Hawksbill sea turtle *(Eretmochelys imbricata)*	No records of species occurrence on WFF	Analysis not required	The hawksbill sea turtle (*Eretmochelys imbricate*) is a circumtropical species typically occurring between 30°S latitude and 30°N latitude[30]. Since 1979, only two hawksbill sea turtles have been documented in Virginia waters[31]. There have been no verified observations of hawksbill sea turtles and hawksbills are extremely unlikely to occur in the action area[32]. WFF would continue to adhere to its Protected Species Monitoring Plan[33]. Hawksbill turtles are not specifically mentioned in the monitoring plan due to the low probability of occurrence, but sea turtle monitoring would also apply to any occurrences of this species.
Piping plover *(Charadrius melodus)*	Species present	Analysis pending	Piping plover habitat generally consists of ocean beaches, and sand or algal flats in protected bays. Nests can be found above the high tide line on coastal beaches, sandflats at the end of spits and barrier islands, gently sloping

[29] NASA. (2013). *Wallops Island protected species monitoring plan*. Prepared by URS, Inc. Wallops Island, Virginia: NASA.

[30] NFS. (2014). Hawksbill Turtle (*Eretmochelys imbricata*). Last updated November 22, 2013. Retrieved from http://www.nmfs.noaa.gov/pr/species/turtles/hawksbill.htm as accessed 2014, January 8.

[31] Mansfield, K.L. (2006). Sources of mortality, movements and behavior of sea turtles in Virginia (Doctoral dissertation). The College of William and Mary, Williamsburg, Virginia. Retrieved from http://www.seaturtle.org/cgi-bin/pdf/index2.pl?d=MansfieldKL_2006_PhD as accessed on 2014, January 8.

[32] NMFS. (2007). Biological opinion for Wallops Island shoreline restoration and infrastructure protection program. 2007, September 25.

[33] NASA. (2013). *Wallops Island protected species monitoring plan*. Prepared by URS, Inc. Wallops Island, Virginia: NASA.

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
			foredunes, blowout areas behind dunes, and over-wash areas between dunes. Nest site substrates may include a range of materials from fine grained sands up to shells and cobbles. Nests are typically found in areas with little or no vegetation; however, occasionally nests have been found under beach grass and other vegetation[34]. In Virginia piping plovers nest in areas with wider beaches, greater access to mudflat habitats, lower relative amount of vegetation on the beach margin, and fewer stable dunes[35]. The piping plover is a common transient and summer resident of the upper Virginia barrier islands and is known to inhabit the coastal habitats of the nearby Chincoteague National Wildlife Refuge. Piping plovers are known to use the sandy beaches and tidal flats along the coast of Wallops Island. In 2008, two pairs of piping plovers began nesting attempts at the north end of Wallops Island but no eggs were laid[36]. In 2009, three pairs nested successfully on the northern beaches. In 2010, there were three nesting attempts, including one that successfully produced four chicks[37]. In 2011, there were three documented piping plover nesting attempts on Wallops Island: two nests on the north end and one on the south end[38]. Of the 12

[34] NASA. (2013). *Wallops Island protected species monitoring plan*. Prepared by URS, Inc. Wallops Island, Virginia: NASA.

[35] Wilson, M. D., B. D. Watts, and J. E. LecLerc. (2007). Assessing habitat stability for disturbance-prone species by evaluating landscape dynamics along the Virginia barrier islands. Center for Conservation Biology Technical Report Series,CCBTR-07-06. Williamsburg, Virginia: College of William and Mary. 47pp.

[36] NASA. (2009). *Final biological assessment for proposed and ongoing orbital launch operations at Wallops Flight Facility*. Prepared by URS and EG&G. Wallops Island, Virginia: NASA.

[37] NASA. (2010). *Wallops Island Protected Species Monitoring Report, December 2010*.

[38] NASA. (2011). *Wallops Island Protected Species Monitoring Report, December 2011*.

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
			eggs laid, 11 hatched and three chicks fledged. There were six piping plover nests on Wallops Island in 2012[39]. Fourteen eggs hatched and three chicks successfully fledged from the 20 eggs laid. In 2013 there were four piping plover nests on Wallops Island with 10 eggs hatched and eight chicks fledged[40]. Currently, piping plover nesting areas are located at the southern and northern ends of Wallops Island, with the closest recorded nest approximately 5,760 feet from the Elevated Road site alternative, 6,050 feet from the Pad 5 site alternative, and 7,040 feet from the Pad 4 site alternative. In the future, the newly reestablished beach along the old seawall area could be used as nesting habitat by piping plovers, although plovers generally prefer habitats more similar to the ends of Wallops Island with access to ocean beaches and protected bays. WFF would continue to adhere to its Protected Species Monitoring Plan[41]. Piping plover monitoring includes pre-nesting surveys, nest searches, erecting predator-proof nest enclosures, brood monitoring, and removing predators. Occurrences are detailed in annual monitoring reports.
Red knot *(Calidris canutus rufa)*	Species present	Analysis pending	Red knots do not breed in the vicinity of Accomack County, although they have been appearing regularly during spring migration on Wallops Island beaches, with the highest numbers seen during the second half of May[42,43,44]. WFF Environmental Office personnel routinely monitor for red knots. On May 8, 2009,

[39] NASA. (2012). *2012 Wallops Island Protected Species Monitoring Report, Fall 2012*.

[40] NASA. (2013). *2013 Wallops Island protected species monitoring report*. Wallops Island, Virginia: NASA.

[41] NASA. (2013). *Wallops Island protected species monitoring plan*. Prepared by URS, Inc. Wallops Island, Virginia: NASA.

[42] NASA. (2010). *Wallops Island Protected Species Monitoring Report, December 2010*.

[43] NASA. (2011). *Wallops Island Protected Species Monitoring Report, December 2011*.

[44] NASA. (2012). *2012 Wallops Island Protected Species Monitoring Report, Fall 2012*.

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
			there was a flock of approximately 1,300 individuals seen on north Wallops Island and again in late May 2009, flocks of approximately 20 to 200 red knots were observed[45]. Survey data for 2010 indicate that approximately 900 birds were observed on the northern end of Wallops Island in May[46]. Survey data for 2011 indicate that red knots began arriving on May 6 (three birds sighted) and the last bird seen was on July 19, with almost 1,200 birds counted during that period[47]. In 2012, approximately 2,600 red knots were counted, with the first bird observed May 1 and the last observed June 1[48]. In 2013, about 2,400 red knots were counted on the recreational beach and the north curve of Wallops Island[49]. The first bird was observed May 7 and the last was observed May 31. WFF would continue to adhere to its Protected Species Monitoring Plan[50]. Red knot monitoring includes recording date, time, observer name, place of encounter, flock size, and number of banded birds. Occurrences are detailed in annual monitoring reports.

[45] NASA. (2009). *Final biological assessment for proposed and ongoing orbital launch operations at Wallops Flight Facility*. Prepared by URS and EG&G. Wallops Island, Virginia: NASA.

[46] NASA. (2010). *Wallops Island Protected Species Monitoring Report, December 2010*.

[47] NASA. (2011). *Wallops Island Protected Species Monitoring Report, December 2011*.

[48] NASA. (2012). *2012 Wallops Island Protected Species Monitoring Report, Fall 2012*.

[49] NASA. (2013). *2013 Wallops Island protected species monitoring report*. Wallops Island, Virginia: NASA.

[50] NASA. (2013). *Wallops Island protected species monitoring plan*. Prepared by URS, Inc. Wallops Island, Virginia: NASA.

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Roseate tern *(Sterna dougallii dougallii)*	Suitable habitat present, species not present	Analysis pending	The roseate tern is primarily found on the northeastern coast of North America from Canada to Florida[51], but is a rare migrant along the U.S. coast south of New Jersey[52]. In Accomack County, roseate terns are a rare transient and summer visitor near the coast[53]. Historically, roseate terns nested irregularly on Virginia's Eastern Shore, but no definite record of breeding or nesting has been recorded since 1927. WFF would continue to adhere to its Protected Species Monitoring Plan[54]. Roseate terns are not specifically mentioned in the monitoring plan due to the low probability of occurrence. However, were a roseate tern observed during piping plover and red knot monitoring, the date, time, observer name, and place of encounter would be recorded and reported in the annual monitoring report.
Critical habitat	No critical habitat present	No effect	Based on use of the Virginia Field Office Critical Habitat Map Tool, the action area does not intersect critical habitat.
Bald eagle	Unlikely to disturb nesting bald eagles	No Eagle Act permit required	Based on use of The Center for Conservation Biology Virginia Bald Eagle Nest Locator, the action area is not within 5,280 feet of a bald eagle nest.
Bald eagle	Does not intersect with an eagle concentration area	No Eagle Act permit required	Based on use of the Virginia Field Office Bald Eagle Map Tool, no designated Bald Eagle Concentration Areas are within the vicinity of the action area.

[51] USFWS. (2011). Roseate tern: North American subspecies, *Sterna dougallii dougallii*. Retrieved from http://www.fws.gov/northeast/pdf/Roseatetern0511.pdf as accessed on 2013, July.

[52] Nisbet, I.C.T. (1984). Migration and winter quarters of North American roseate terns as shown by banding recoveries, Journal of field ornithology 55(1):1-17, Winter 1984. Retrieved from https://sora.unm.edu/sites/default/files/journals/jfo/v055n01/p0001-p0017.pdf as accessed 2013, December 6.

[53] Virginia Department of Game and Inland Fisheries. (2013). Virginia Fish and Wildlife Information Service. Retrieved from http://vafwis.org/fwis/ as accessed on 2013, December 9.

[54] NASA. (2013). *Wallops Island protected species monitoring plan*. Prepared by URS, Inc. Wallops Island, Virginia: NASA.

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Environmental Assessment/ Overseas Environmental Assessment for Testing of Hypervelocity Projectiles and an Electromagnetic Railgun

Wallops Flight Facility Wallops Island, Virginia

Background

The Navy's Office of Naval Research (ONR) is carrying out the second phase of a multi-year Railgun Innovative Naval Prototype program to develop and mature the science and technologies supporting future naval electromagnetic (EM) railgun weapon systems. The EM railgun is a revolutionary long-range naval gun that is expected to fire precision-guided hypervelocity projectiles (HVPs) to ranges greater than 100 nautical miles – farther and faster than any preceding gun. Rather than using gunpowder and rocket motors for propulsion, the railgun uses electrical power to propel projectiles. Among the technical challenges is to design, develop, fabricate, test, and demonstrate guided hypervelocity projectiles (HVPs) compatible with both standard large naval guns and future EM railgun systems. Railgun science and technology have advanced sufficiently so that the Naval Sea System's (NAVSEA's) Engineering Directorate Directed Energy and Electric Weapon Systems Program Office proposes to move beyond the laboratory to conduct systems-level demonstrations by firing from a land range into a sea range.

Proposed Action

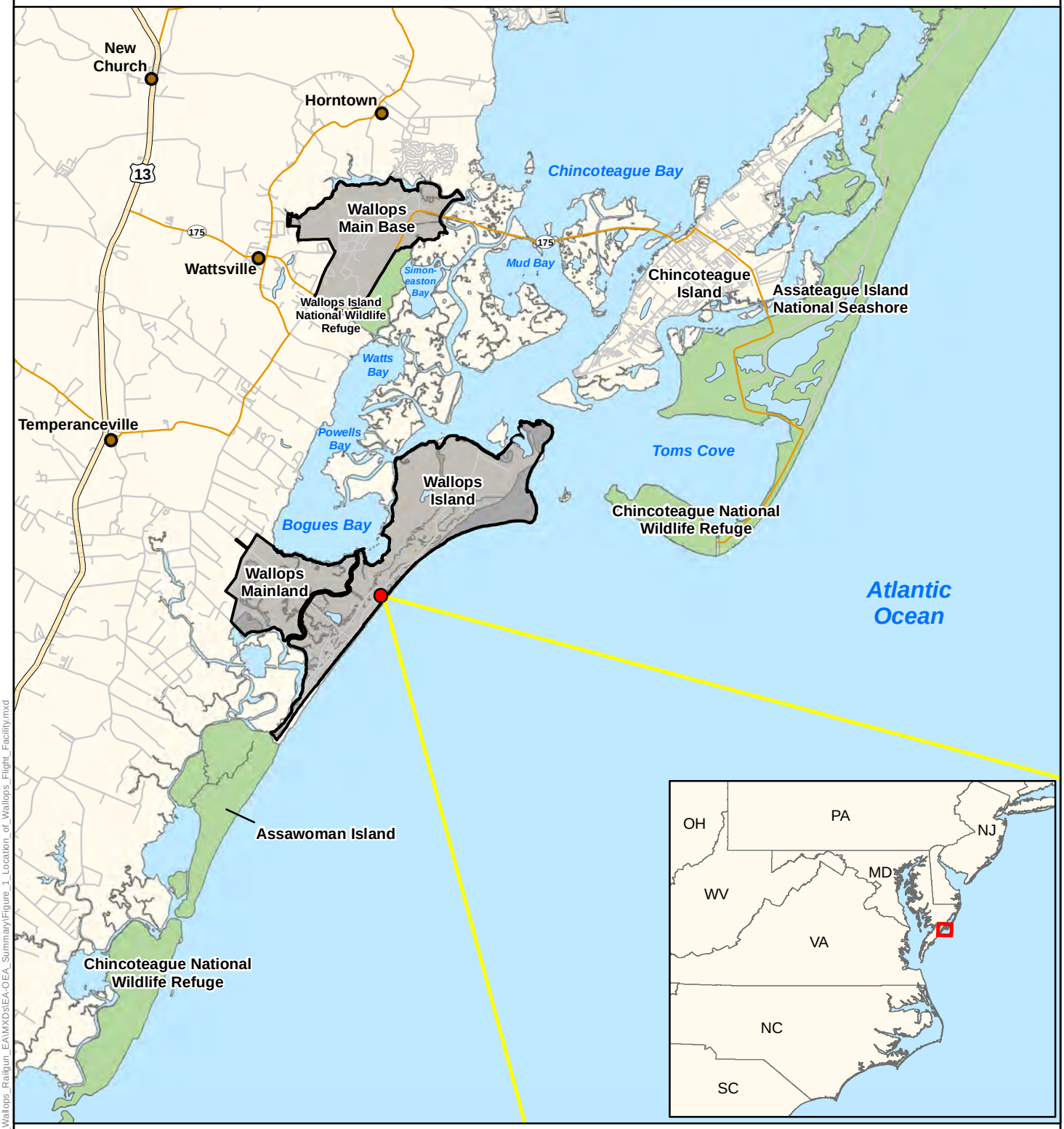
The Proposed Action is to: install a 5" powder gun and an EM railgun; test hypervelocity projectiles; integrate HVPs with the EM railgun; and integrate the HVP/EM railgun weapon system with combat systems equipment currently in use on US Navy warships. The proposed site for the guns is the NAVSEA Surface Combat Systems Center (SCSC), which is located on the National Aeronautical and Space Administration's (NASA's) Wallops Flight Facility (WFF) on Wallops Island, Virginia (Figure 1). The guns would fire into the Virginia Capes Range Complex in the Atlantic Ocean, which is used by the Navy for training and testing activities (Figure 2).

Guns

Two large Navy guns would be installed on WFF's Wallops Island:

- A MK 45 Mod 4 Proof of Concept 5" powder gun would be installed to test HVPs. Supporting facilities, including personnel command shelters and radar facility would also be installed. Projectiles would be fired at speeds up to 2,908 miles per hour (4,680 kilometers per hour) or 0.8 miles per second (1.3 kilometers per second) and ranges of approximately 35 nautical miles. Projectiles are anticipated to be guided and include telemetry. Typical gun range instrumentation is expected to be used.

Location of Wallops Flight Facility



Source: NASA 2013

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Figure 1

Virginia Capes Range Complex

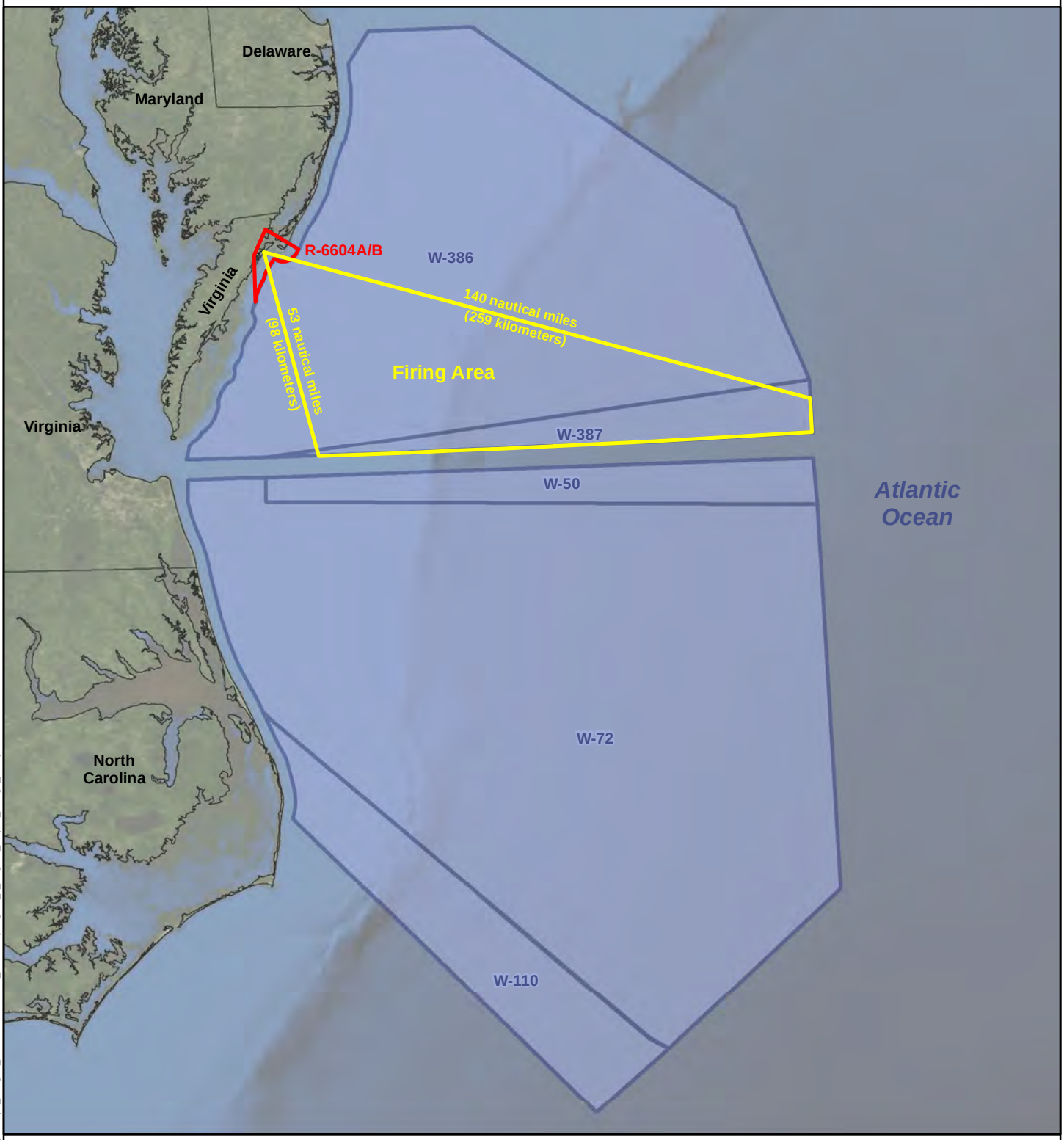

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Figure 2

- An EM railgun that is currently under development would be installed near the powder gun along with a pulsed power system. It would be used to fire HVPs for various system-level demonstrations at speeds up to 4,474 miles per hour (7,200 kilometers per hour) or 1.2 miles per second (2.0 kilometers per second) and ranges to 100 nautical miles.

Projectiles

Three types of projectiles would be tested:

- Inert, which would contain no explosives and would be used to test guidance and control.

- High-energy variant, which would contain ≤2 pounds (≤0.9 kilogram) of explosives. High energy projectiles would be used against water surface targets and are intended to burst and fragment just prior to striking the target. Underwater explosions are not planned and would only occur in abnormal or test failure conditions.

- Kinetic energy dispensing variant, which would be used against air targets. This variant would contain ≤0.2 pound (≤0.1 kilogram) of explosives to burst the casing of the projectile and dispense tungsten pellets.

Table 1 shows the proposed average annual number of projectiles to be used over the next five fiscal years. Projectiles would be fired on approximately 20 days in 2015 and 50 days in 2019. A typical day of testing would be about 8 hours long but could be shorter or longer. Testing typically would take place in daylight hours but firing may occasionally take place at night based on mission requirements and WFF's testing schedule for other programs.

Table 1 Average Annual Number of Projectiles by Fiscal Year

Projectile Types	2015	2016	2017	2018	2019
Inert	100	100	100	100	200
Kinetic Energy	0	4	40	40	40
High Energy	0	0	10	10	10
Total Number	100	104	150	150	250

Figure 3 is a diagram of an inert HVP to be used in the 5" gun. The dark gray shape is the projectile itself, which has two fixed fins and two maneuverable fins to direct its flight; the lighter gray shapes are four aluminum sabots that surround the projectile and hold it in place while it is in the gun. When the projectile is fired, the sabots fall off generally within 1 nautical mile from the gun in the direction of the target. Figure 4 shows the sabot petals flying away during launch and one sabot petal separated from the projectile. The two-piece titanium pusher plate holds pressure in to propel the projectile out of the gun and then falls off within 3 nautical miles of the gun in the direction of fire. The pusher plate is a disc, 5 inches x 1.5 inches in size and weighs 2.2 pounds (1 kilogram).

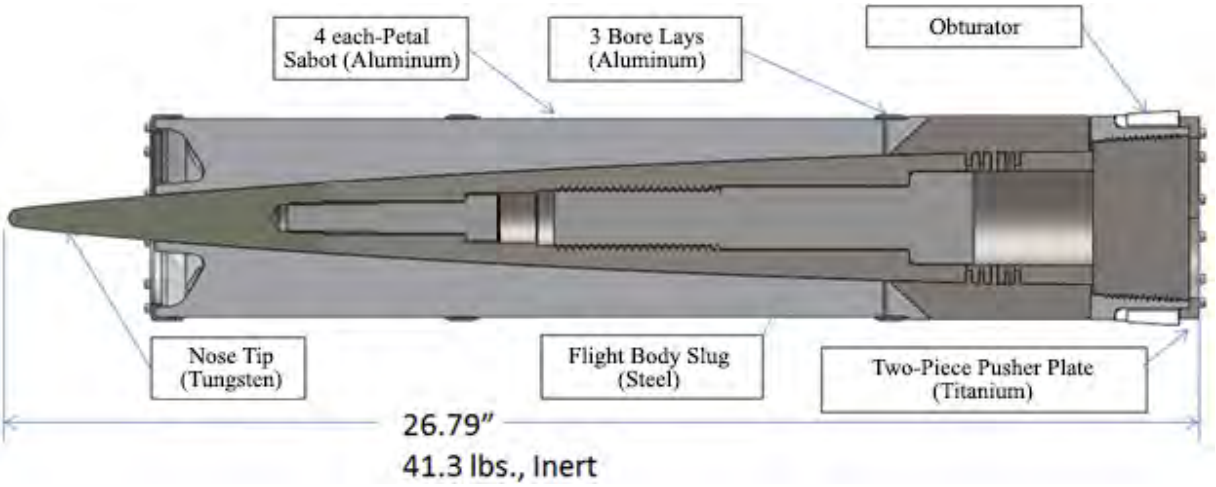


Figure 3: Inert 5" gun HVP. The dark gray projectile, which has fins, is surrounded by aluminum sabots that hold it in place in the gun. The pusher plate traps pressure during the launch.

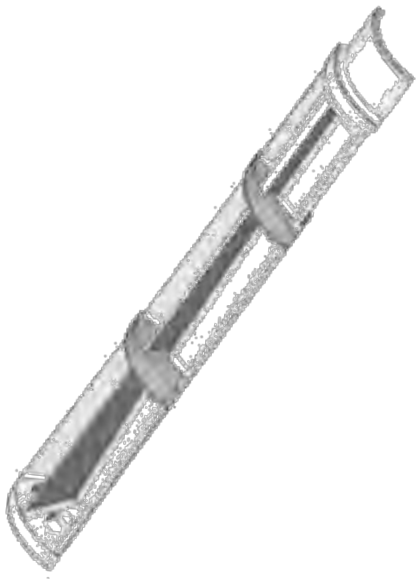


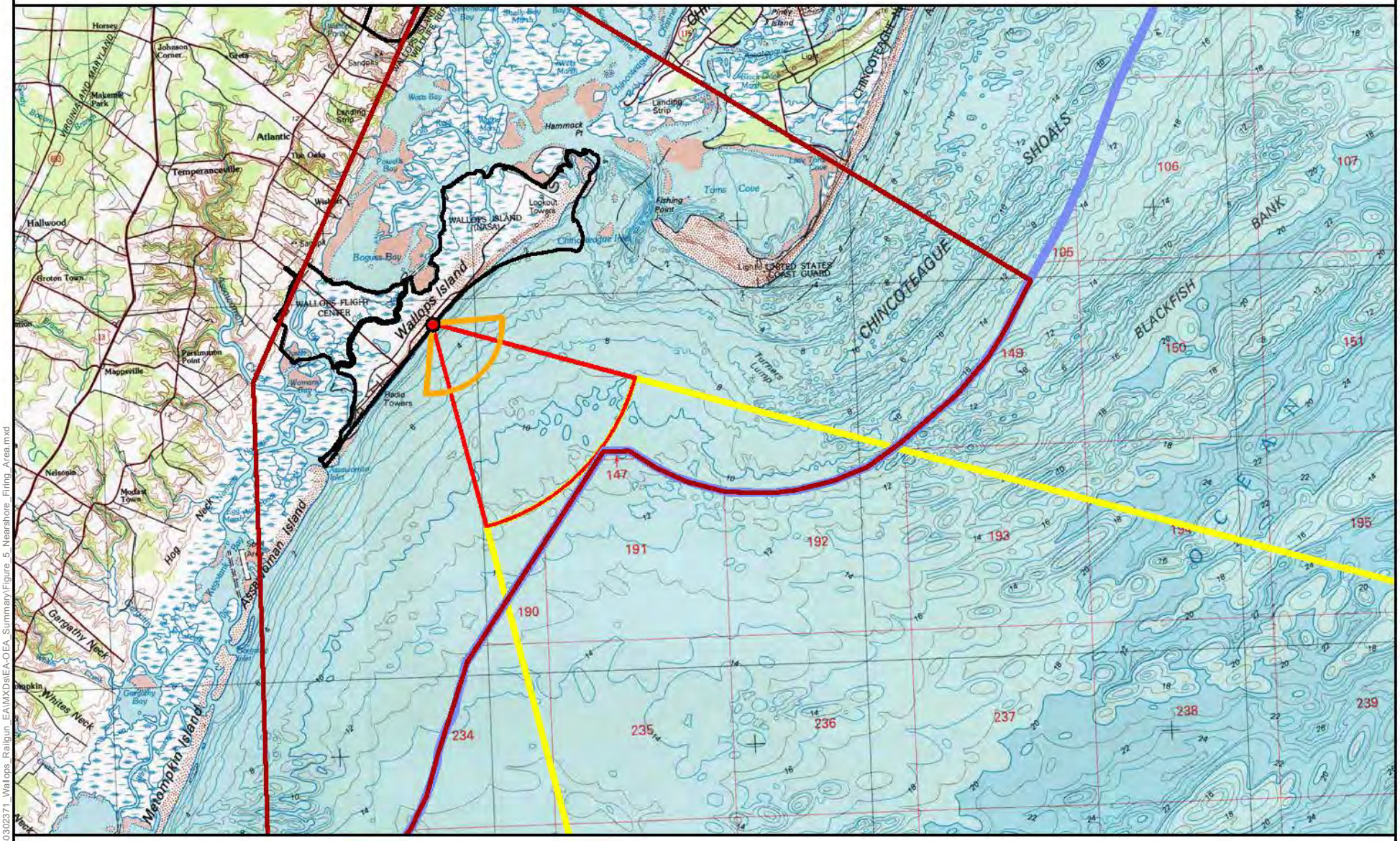
Figure 4: Sabot petals flying off the projectile after the projectile is launched in a laboratory.

Each sabot petal is 22 inches by 3.5 inches (56 centimeters by 9 centimeters) and weighs approximately 3.5 pounds (1.6 kilograms). While currently made entirely of aluminum, in the future the sabot would likely transition to a lighter carbon-composite material.

The projectiles that would be used in the railgun are similar to the 5" projectile pictured in Figure 3. However, because railgun projectiles are launched using electrical energy, they have an armature that propels the projectile down the rail while conducting the electrical pulse to propel the projectile out of the gun. Armatures weigh approximately 5.5 to 6.6 pounds (2.5 to 3.0 kilograms) and are made of aluminum. They snap off the projectile after firing, falling within 3 nautical miles of the gun in the direction of fire.

Figure 5 illustrates the proposed nearshore (within 3 nautical miles of the shoreline) firing area. Projectiles would be fired on bearings within this area, and sabot petals, pusher plates, and

Nearshore Firing Area



Note: Bathymetric contour in meters – datum is mean low water.
Source: Chincoteague, Virginia – Maryland 30 x 60 Minute Series (Topographic – Bathymetric) U.S. Geological Survey/National Ocean Survey, 1981.

Figure 5

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armatures would fall into the areas indicated on the map. The wing-like shape of the sabot petals can cause them to drift in the air outside the firing area before settling into the water, as indicated on the figure.

Alternative Sites on Wallops Island

The Navy has identified three site alternatives on WFF's Wallops Island using two criteria:

1. Site that is available for long-term use.

2. Close enough to the Navy's AEGIS SPY-1 radar facility on Wallops Island to allow immediate acquisition (tracking) of the projectile.

Figure 6 is an aerial view of the three alternative sites and the AEGIS SPY-1 radar facility. Figure 7 shows the AEGIS SPY-1 radiofrequency pattern in relation to the three alternative sites at WFF – Pad 4, Pad 5, and the Elevated Road. Pad 5 is the Preferred Alternative.

Figure 6: Proposed alternative sites for the 5" powder gun and railgun and supporting facilities at Pad 4, Pad 5, and the Elevated Road on WFF's Wallops Island. A beach replenishment project has added 110 feet of beach in front of the seawall shown in this photo.

Wallops Island Alternative Sites

AEGIS SPY-1 Radar Beam
Pad 5 Alternative
Pad 4 Alternative
Elevated Road Alternative

0 450 900
Feet

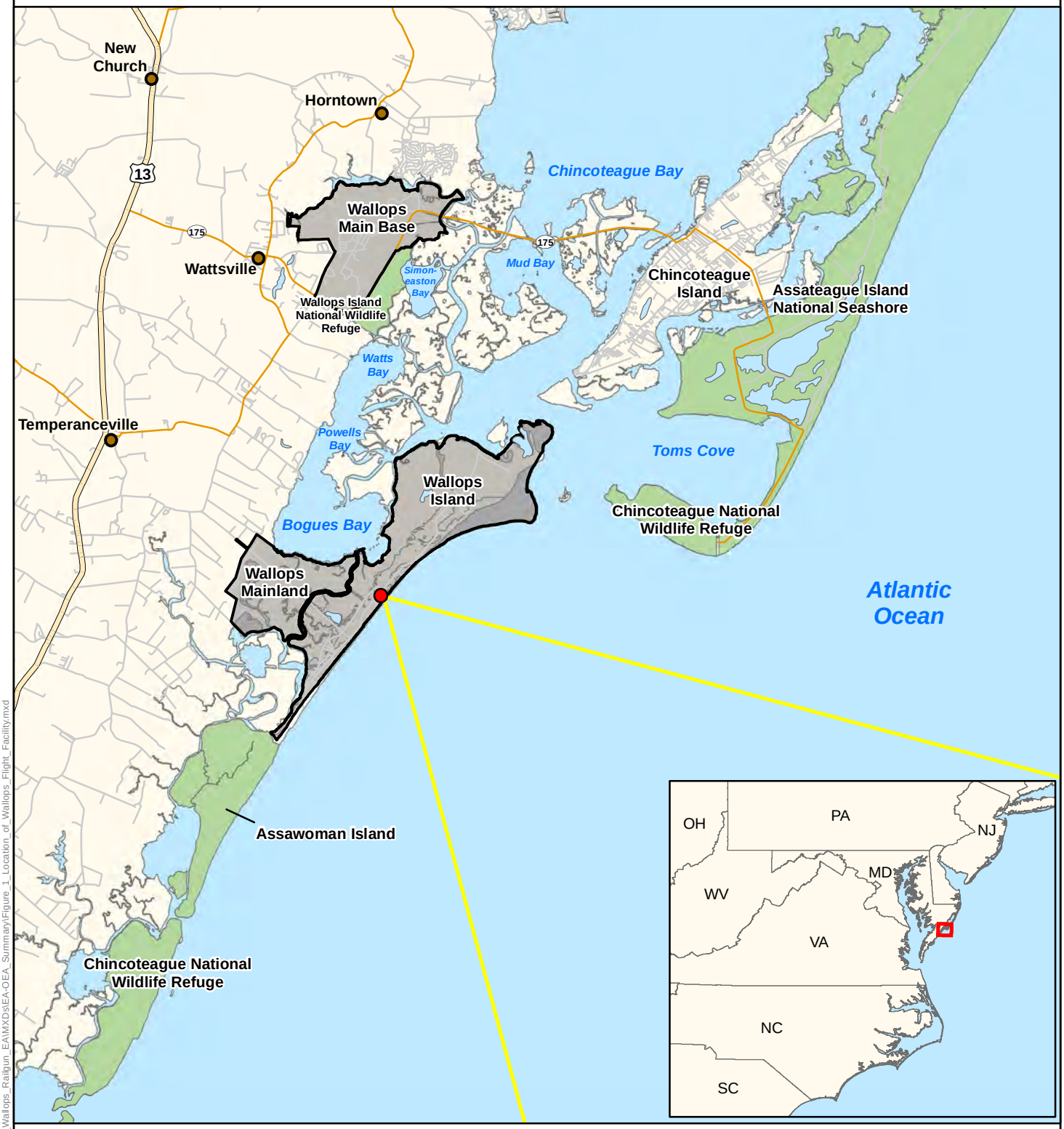
0 140 280
Meters

N

Figure 7

Path: L:_Common\GIS_Data\60302371_Wallops_Railgun_EA\MXDs\EA-OEA_Summary\Figure_6_Alternative_Sites.mxd

Location of Wallops Flight Facility



Source: NASA 2013

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Figure 1

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Wallops Island Alternative Sites

AEGIS SPY-1 Radar Beam
Pad 5 Alternative
Pad 4 Alternative
Elevated Road Alternative

0 450 900
Feet

0 140 280
Meters

N

Figure 7

Path: L:_Common\GIS_Data\60302371_Wallops_Railgun_EA\MXDs\EA-OEA_Summary\Figure_6_Alternative_Sites.mxd

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Brown, Bethany D CIV NSWCDD, 1023

Subject: FW: Online Project Review Request, Consultation Tracking Number 05E2VA00-2014-SLI-0461

Attachments: 19 August email from Mike Drummond.docx

-----Original Message-----
From: Mike Drummond [mailto:mike_drummond@fws.gov]
Sent: Tuesday, August 19, 2014 11:04 AM
To: Hartzell, Jeanne CIV NSWCDD, CX8
Subject: RE: Online Project Review Request, Consultation Tracking Number 05E2VA00-2014-SLI-0461

Jeanne,
Have been reviewing the BA and have some questions and comments:

(1) The table shows 100 shots in Year 1, how many are from the railgun and how many will be from the powder gun (this would be good to know for each year)?
(2) Will a single round be fired on a day, or will there be multiple rounds fired on a day? It would be good to know the minimum to maximum number of rounds fired a day, at what rate, and which gun? (This goes to determining possible impacts to sensitive species.)
(3) Can operation be limited to those periods when plovers and red knots are not on site (nesting of plovers is well outside the zone used for fireworks, so our primary concern is the fall migration period for plovers which is July 10th to end of September, and all of May for red knots)?
(4) We will need a map showing the area that if nesting occurs within (for both sea turtles and plovers), gun operations will be shut down. I assume this is 500ft each direction from guns? Why is this zone not larger?
(5) This zone will need to be well delineated on the ground so there is no confusion over when nesting will trigger the shutdown of gun operations.
(6) You will need to include Kemps and green sea turtles as possible nesters, and use loggerheads as surrogate species for management and consultation purposes. There is a slim chance they could nest (just had our second Kemps in Virginia this year) so we need to include these in the determinations (just make it clear there is a very low chance they could nest, but they would be covered by management practices and mitigation measures in place for loggerheads.

I am trying to keep this an informal process, the majority is in great shape and will allow us to keep this as informal. Mike

Mike Drummond
Endangered Species Biologist
U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, VA 23061
(804) 824 - 2408

Responses to 19 August email from:

Mike Drummond
Endangered Species Biologist
U.S. Fish and Wildlife Service
Virginia Field Office

Regarding:
U.S. Fish and Wildlife Service Biological Assessment
U.S. Navy Testing of Hypervelocity Projectiles and an Electromagnetic Railgun
National Aeronautics and Space Administration's Wallops Flight Facility
Wallops Island, Virginia
May 2014

(1) The table shows 100 shots in Year 1, how many are from the railgun and how many will be from the powder gun (this would be good to know for each year)?

Response: We predict that approximately 60% of any given year's shots will be from a railgun and 40% will be from a powder gun. The hypervelocity projectile is designed to be common between the two systems so there could be some interchange. Also, as described in the Environmental Assessment, there may only be one system (powder gun or railgun), so all of the shots would come from that system (see page 2-1 of the EA).

(2) Will a single round be fired on a day, or will there be multiple rounds fired on a day? It would be good to know the minimum to maximum number of rounds fired a day, at what rate, and which gun? (This goes to determining possible impacts to sensitive species.)

Response: We expect from 1-10 rounds to be fired in a day, depending on test objectives and the ability to get range clearance. Only one system (powder gun or railgun) will be operated at a time.

(3) Can operation be limited to those periods when plovers and red knots are not on site (nesting of plovers is well outside the zone used for fireworks, so our primary concern is the fall migration period for plovers which is July 10th to end of September, and all of May for red knots)?

Response: We expect that the operational tempo will be reduced during these migratory periods because increased boating activities during the summer months will limit usage of the range. However, restricting all activities for almost four months of the year would adversely affect our mission.

(4) We will need a map showing the area that if nesting occurs within (for both sea turtles and plovers), gun operations will be shut down. I assume this is 500ft each direction from guns? Why is this zone not larger?

Response: (As was discussed during our 27 August telephone conversation, a map is no longer required, and this question/concern pertains to the plovers and not sea turtles.) You are correct that the 500 foot distance is on either side of the guns, so the total monitoring band along the

beach will be 1,000 feet. The band size is based on input from a NASA protected species monitor, who stated that he could monitor about 300 meters (or 1,000 feet) of beach from a single vantage point.

(5) This zone will need to be well delineated on the ground so there is no confusion over when nesting will trigger the shutdown of gun operations.

Response: We concur. We intend to measure out the monitoring band and mark it clearly. Marking could include spray-painting seawall boulders or using brightly colored stakes placed on the beach berm so that both our protected species monitor and others are clear on the boundaries. Markers placed on the dune/rock revetment area would provide a more permanent benchmark than beach markers that could be washed away in the surf. From the dune/rock revetment markers, the line could be squared up and marked down to the water just prior to operations for visibility as needed.

(6) You will need to include Kemps and green sea turtles as possible nesters, and use loggerheads as surrogate species for management and consultation purposes. There is a slim chance they could nest (just had our second Kemps in Virginia this year) so we need to include these in the determinations (just make it clear there is a very low chance they could nest, but they would be covered by management practices and mitigation measures in place for loggerheads.

Response: Although Kemp's ridley and green sea turtles have never been recorded nesting in the area, recent recordings may indicate a slight shift northward in nesting, creating the possibility of future nesting in the study area. Sea turtle monitoring will continue at Wallops Flight Facility in accordance with the Species Monitoring Plan; this monitoring includes all species of sea turtles. We concur that any mitigation measures developed for loggerheads would apply to any species of nesting sea turtle.

Brown, Bethany D CIV NSWCDD, 1023

Subject: FW: U.S. Navy Testing of Hypervelocity Projectiles and an Electromagnetic Railgun, NASA - Wallops Flight Facility, 2014-SLI-0461

-----Original Message-----
From: Mike Drummond [mailto:mike_drummond@fws.gov]
Sent: Thursday, September 11, 2014 12:59 PM
To: Hartzell, Jeanne CIV NSWCDD, 1023
Cc: troy_andersen@fws.gov; Cindy Schulz; Joel Mitchell
Subject: U.S. Navy Testing of Hypervelocity Projectiles and an Electromagnetic Railgun, NASA - Wallops Flight Facility, 2014-SLI-0461

We have reviewed the project package received on January 17, 2014 for the referenced project and the Biological Assessment (BA) dated May 2014. The following comments are provided under provisions of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended, and Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250) as amended.

We concur with the determinations provided in table ES-1 of the BA, provided that the project is constructed and operated as outlined in the BA. Should construction/operational plans change or if additional information on the distribution of listed species or critical habitat becomes available, this determination may be reconsidered. If you have any questions, please contact me at (804) 824-2408, or via email at mike_drummond@fws.gov.

Mike Drummond
Endangered Species Biologist
U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, VA 23061
(804) 824 - 2408

Appendix B – Federal Coastal Consistency Determination

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Navy Federal Coastal Consistency Determination
Submitted to the
Virginia Department of Environmental Quality

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DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND
1333 ISAAC HULL AVENUE SE STOP 5013
WASHINGTON NAVY YARD, DC 20376-5013

IN REPLY REFER TO
5090
Ser 405/672
28 Feb 2014

MEMORANDUM

From: Program Manager, Naval Sea Systems Command (SEA 05T)
TO: Office of Environmental Impact Review, Virginia Department of Environmental Quality, 629 East Main Street, Sixth Floor, Richmond, Virginia 23219 (Attn: Ms. Ellie Irons)

Subj: COASTAL ZONE MANAGEMENT ACT (CZMA) SECTION 307(C)(1) AND15 CFR PART 930, SUBPART C

1. The enclosed document provides a Consistency Determination prepared pursuant to the Coastal Zone Management Act (CZMA) section 307(c)(1) and 15 CFR Part 930, subpart C concerning a proposed action to install at National Aeronautics and Space Administration's (NASA) Wallops Flight Facility (WFF) a Navy 5" powder gun and an electromagnetic (EM) railgun; test hypervelocity projectiles (HVPs); integrate HVPs with the EM railgun; and integrate the HVP/EM railgun weapon system with combat systems equipment currently in use on United States Navy warships. The proposed action would require firing from WFF's Wallops Island at offshore targets in the Virginia Capes Range Complex. The information in this Consistency Determination, which was prepared in cooperation with NASA, is provided pursuant to 15 CFR §930.39. Additionally, the information contained in this Consistency Determination reflects information in the soon-to-be released Environmental Assessment/Overseas Environmental Assessment covering the proposed action.

2, The Navy has determined that the above described activity affects the land or water uses or natural resources of Virginia as described in the enclosed document. In cooperation with NASA, the Navy finds that the above described activity is consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Zone Management Program.

3. Pursuant to 15 CFR Section 930.41, the Virginia Coastal Zone Management Program has 60 days from the receipt of this letter in which to concur with or object to this Consistency Determination, or to request an extension under 15 CFR section 930.41(b). Virginia's concurrence will be

Subj: COASTAL ZONE MANAGEMENT ACT (CZMA) SECTION 307(C)(1) AND15 CFR PART 930, SUBPART C

presumed if its response is not received by the Navy on the 60th day from receipt of this determination. The State's response should be sent to:

Naval Surface Warfare Center Dahlgren
Attn: Jeanne L. Hartzell, Ph.D.
Environmental Program Manager
17483 Dahlgren Road, Suite 104
Bldg 189, Rm 114
Dahlgren, Virginia 22448-5119

Office: 540-653-0933
Fax: 540-653-7965
email: jeanne.hartzell1@navy.mil.

MICHAEL ZIV
CAPT USN

FEDERAL CONSISTENCY DETERMINATION
TESTING HYPERVELOCITY PROJECTILES AND AN ELECTROMAGNETIC RAILGUN AT NATIONAL AERONAUTICS AND SPACE ADMINISTRATION WALLOPS FLIGHT FACILITY WALLOPS ISLAND, VIRGINIA

Pursuant to Section 307 of the Coastal Zone Management Act of 1972, as amended, and 15 C.F.R. Subpart C, a Federal Consistency Determination has been prepared for the U.S. Navy's (Navy's) Proposed Action to install a 5" powder gun and an electromagnetic (EM) railgun, test hypervelocity projectiles (HVPs), integrate HVPs with the EM railgun, and integrate the HVP/EM railgun weapon system with combat systems equipment currently in use on U.S. Navy warships. The Proposed Action would take place on the National Aeronautics and Space Administration's (NASA's) Wallops Flight Facility (WFF), in Accomack County, Virginia. The Navy is required to determine the consistency of the Proposed Action and potential effects on Virginia's coastal resources or coastal uses with the Virginia Coastal Zone Management Program (VCP).

This consistency determination represents an analysis of the Proposed Action in light of established VCP Enforceable Policies and Programs. Submission of this consistency determination reflects the commitment of the Navy to comply to the maximum extent practicable with those Enforceable Policies and Programs. The Proposed Action would be operated and implemented in a manner consistent with the VCP. The Navy has determined that the Proposed Action's effects would have less than significant effects on land and water uses and natural resources of the Commonwealth of Virginia's coastal zone and is consistent to the maximum extent practicable with the enforceable policies of the VCP.

1. PROPOSED ACTION

The Proposed Action is to: install a Navy 5" powder gun and an EM railgun; test HVPs; integrate HVPs with the EM railgun; and integrate the HVP/EM railgun weapon system with combat systems equipment currently in use on United States Navy warships. The proposed site for the guns is co-located with the NAVSEA Surface Combat Systems Center (SCSC) on the National Aeronautical and Space Administration's (NASA's) Wallops Flight Facility (WFF) on Wallops Island, Virginia (Figure 1). The guns would fire projectiles at targets from 5 nautical miles to 100 nautical miles into the Virginia Capes Range Complex in the Atlantic Ocean, which is used by the Navy for training and testing activities (Figure 2). The two Navy guns to be installed on WFF's Wallops Island are:

- An MK 45 Mod 4 Proof of Concept 5" powder gun. Supporting facilities, including personnel command shelters and radar facilities would also be installed. HVP projectiles would be fired from the powder gun at speeds up to 2,908 miles per hour or 0.8 miles per second and at ranges of approximately 5 to 35 nautical miles. Projectiles are anticipated to be guided and include telemetry. Typical gun range instrumentation is expected to be used.

Figure 1

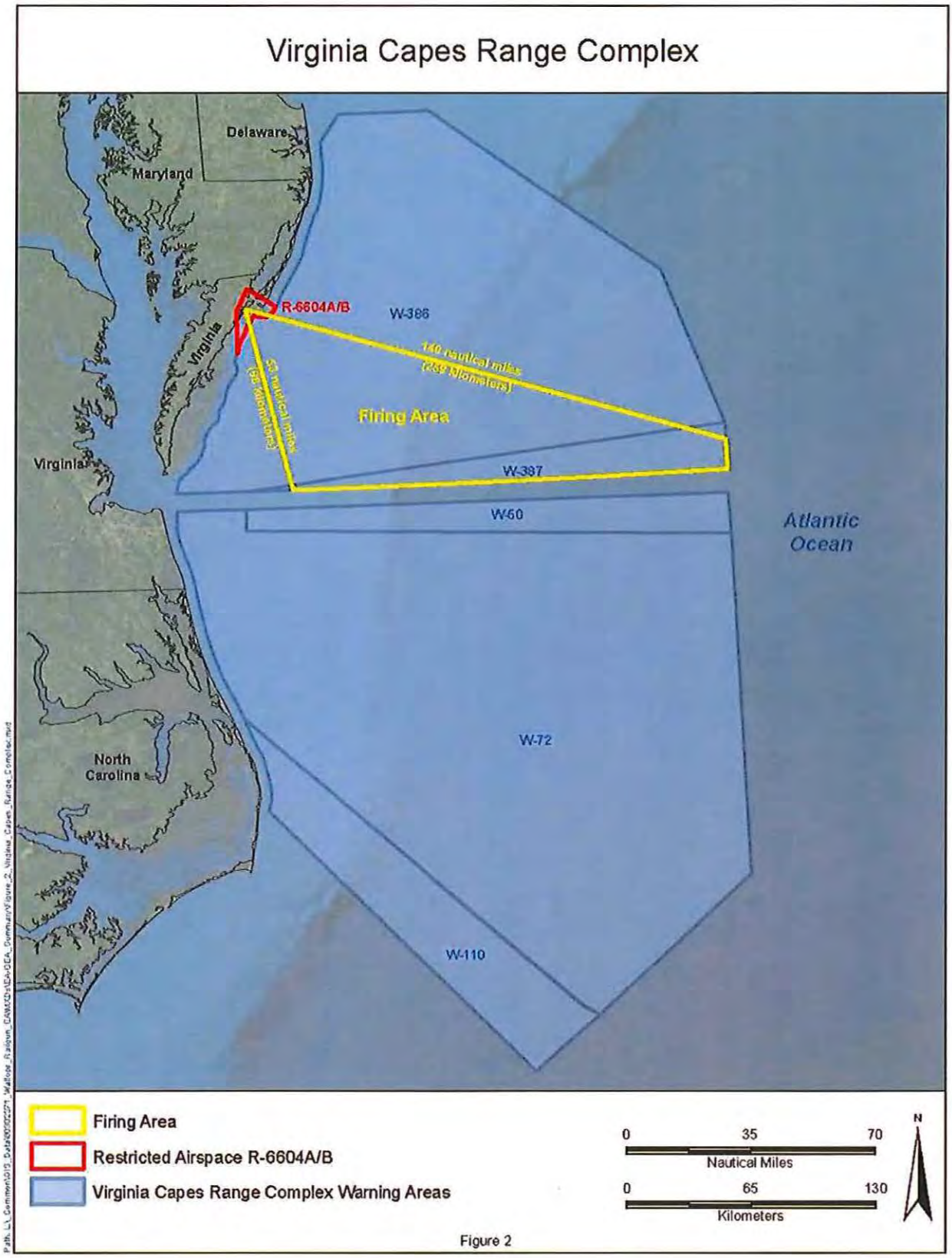

Figure 2

- An EM railgun that is currently under development. It would be installed near the powder gun, along with a pulsed power system used to fire the gun. HVPs would be fired from the EM railgun for various system-level demonstrations at speeds up to 4,474 miles per hour or 1.2 miles per second and at ranges from 5 to 100 nautical miles. Typical gun range instrumentation is expected to be used.

Three types of projectiles would be tested:

- Inert variant, which would contain no explosives and would be used to test guidance and control.
- High-explosive variant, which would contain ≤2 pounds of explosives and would be used against water surface targets. They are intended to burst and fragment just prior to striking the target. Underwater explosions are not planned and would only occur in abnormal or test failure conditions.
- Kinetic energy dispensing variant, which would contain ≤0.2 pound of explosives and would be used against air targets. This variant would burst the casing of the projectile and dispense tungsten pellets at incoming air targets.

Table 1 shows the proposed average annual number of projectiles to be used over the five fiscal years covered by the Proposed Action. Projectiles would be fired on approximately 20 days in 2015 and 2016, 30 days in 2017 and 2018, and 50 days in 2019. A typical day of testing would be about 8 hours long but could be shorter or longer. Testing typically would take place in daylight hours but firing may occasionally take place at night based on mission requirements and WFF's testing schedule for other programs.

Table 1 Average Annual Number of Projectiles by Fiscal Year

Projectile Types	2015	2016	2017	2018	2019
Inert	100	100	100	100	200
Kinetic Energy	0	4	40	40	40
High Explosive	0	0	10	10	10
Total Number	100	104	150	150	250

Figure 3 is a diagram of an inert HVP to be used in the 5" gun. The dark gray shape is the projectile itself, which has two fixed fins and two maneuverable fins to direct its flight; the lighter gray shapes are four aluminum sabots that surround the projectile and hold it in place while it is in the gun. When the projectile is fired, the sabots fall off generally within 1 nautical mile from the gun in the direction of the target. Each sabot petal is 22 inches by 3.5 inches and weighs approximately 3.5 pounds. While currently made entirely of aluminum, in the future the sabot would likely transition to a lighter carbon-composite material. Like the aluminum, the carbon-composite sabot petals would sink. Figure 4 shows the sabot petals flying away during launch, with one sabot petal separated from the projectile. The titanium pusher plate holds pressure to propel the projectile out of the gun and then falls off a minimum of 600 feet and a

maximum distance of 3 nautical miles from the gun in the direction of fire. The pusher plate is a disc, 5 inches x 1.5 inches in size and weighs 2.2 pounds.

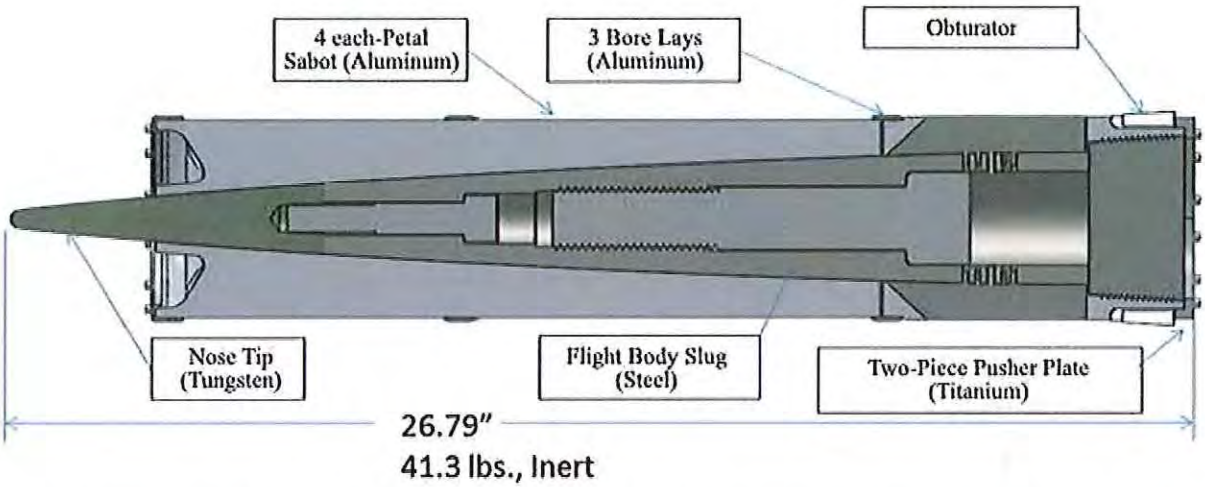

Figure 3: Inert 5" gun HVP. The dark gray projectile, which has fins, is surrounded by aluminum sabots that hold it in place in the gun. The pusher plate traps pressure during the launch.

Figure 4: Above, sabot petals flying off the projectile after the projectile is launched in a laboratory. To the right is a single sabot petal.

The projectiles used in the railgun are similar to the 5" projectile pictured in Figure 3. However, because railgun projectiles are launched using electrical energy, they have an armature that conducts the electrical pulse to propel the projectile down the rail and out of the gun. Armatures, weighing approximately 5.5 to 6.6 pounds and made of aluminum, come off the projectile after firing, falling a minimum of 600 feet to a maximum of 3 nautical miles from the gun in the direction of fire.

Figure 5 illustrates the proposed nearshore firing area, which is within 3 nautical miles of the shoreline. Projectiles would be fired on bearings within this area, and sabot petals, pusher plates, and armatures would fall into the areas indicated on the map. The wing-like shape of the sabot petals can cause them to drift in the air outside the firing area before settling into the water, as indicated on the figure.

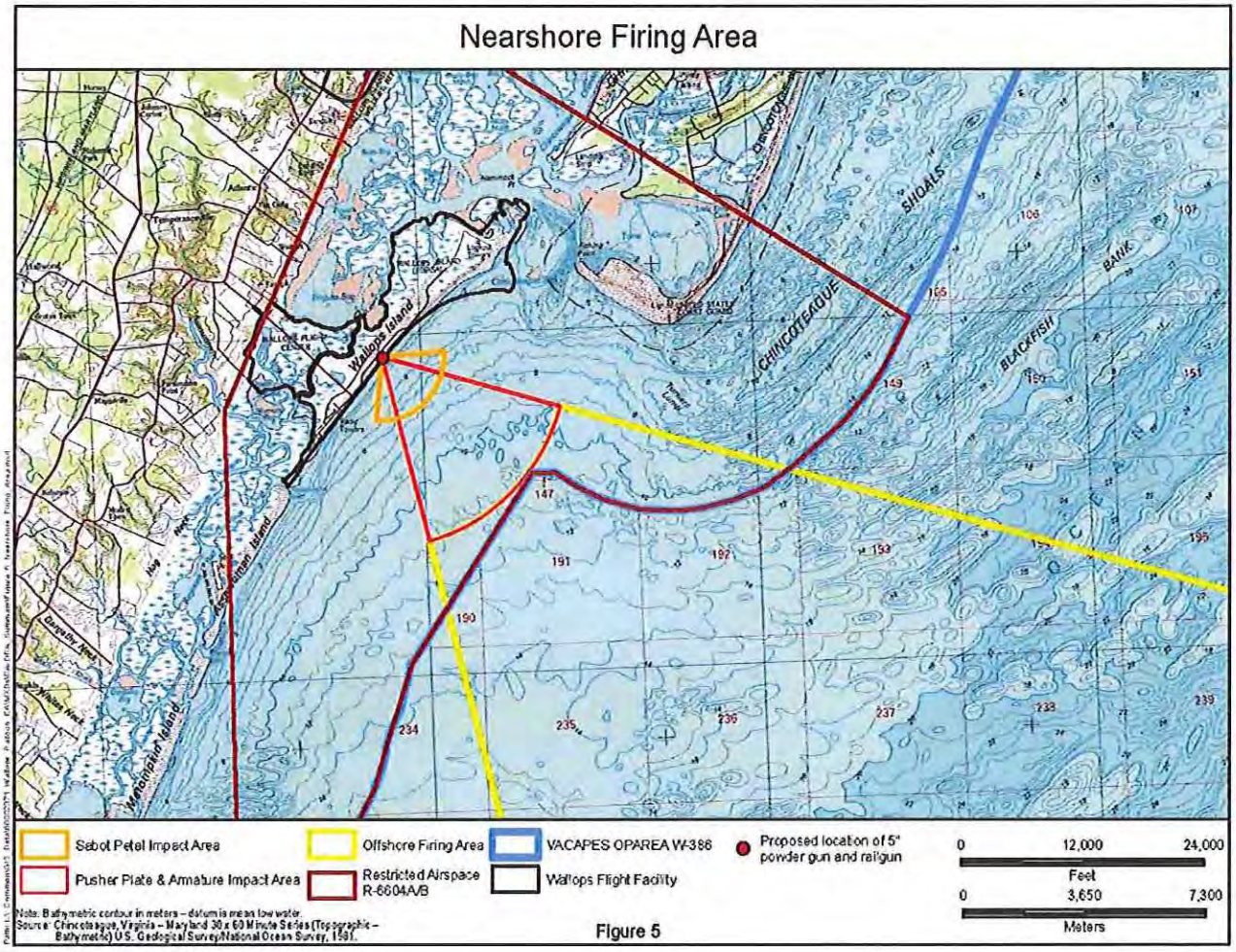

Figure 5

Alternative Sites on Wallops Island

The Navy has identified three site alternatives on WFF's Wallops Island near the Navy's AEGIS SPY-1 radar facility on Wallops Island. Sites near the AEGIS SPY-1 radar are required to allow immediate acquisition (tracking) of the projectile, which is necessary to accomplish HVP testing goals. Figure 6 is an aerial view of the three alternative sites and the AEGIS SPY-1 radar facility. Figure 7 shows the AEGIS SPY-1 radiofrequency pattern used for tracking projectiles in relation to the three alternative sites at WFF – Pad 4, Pad 5, and the Elevated Road. Pad 5 is the Preferred Alternative.

Figure 6: Proposed alternative sites for the 5" powder gun and railgun and supporting facilities at Pad 4, Pad 5, and the Elevated Road on WFF's Wallops Island. Beach replenishment projects have added approximately 110 feet of beach in front of the seawall shown in this photo. Sand was also placed on the rock seawall, transforming it into a seawall/dune.

Figure 7

2. ENFORCEABLE POLICIES

The Commonwealth of Virginia has developed and implemented the federally-approved VCP encompassing nine enforceable policies for the coastal area pertaining to:

- Fisheries management
- Subaqueous lands management
- Wetlands management
- Dunes management
- Non-point source pollution control
- Point source pollution control
- Shoreline sanitation
- Air pollution control
- Coastal lands management

A summary analysis of how the Proposed Action would affect each of the enforceable policies is presented below. This analysis is based on the more detailed analyses contained in the environmental assessment/overseas environmental assessment, which is expected to be issued for public review in April 2014.

The Navy is evaluating the impacts of the Proposed Action on threatened and endangered species in two biological assessments that will be submitted to the U.S. Fish and Wildlife Service (for species occurring on Wallops Island) and the National Marine Fisheries Service (for species occurring within three miles of Wallops Island in the Atlantic Ocean). The Navy also is preparing a Section 106 form to be submitted to the Virginia Department of Historic Resources evaluating impacts of the Proposed Action on two historic sites on Wallops Island.

Fisheries Management

The program stresses the conservation and enhancement of finfish and shellfish resources and the promotion of commercial and recreational fisheries to maximize food production and recreational opportunities. This program is administered by the Marine Resources Commission (MRC) (Virginia Code §28.2-200 through §28.2-713) and *the Department of Game and Inland Fisheries (DGIF) (Virginia Code §29.1-100 through §29.1-570).*

The State Tributyltin (TBT) Regulatory Program has been added to the Fisheries Management program. The General Assembly amended the Virginia Pesticide Use and Application Act as it related to the possession, sale, or use of marine antifoulant paints containing TBT. The use of TBT in boat paint constitutes a serious threat to important marine animal species. The TBT program monitors boating activities and boat painting activities to ensure compliance with TBT regulations promulgated pursuant to the amendment. The MRC, DGIF, and Virginia Department of Agriculture and Consumer Services share enforcement responsibilities (Virginia Code §3.2-3904 and §3.2-3935 to §3.2-3937).

Consistent to the Maximum Extent Practicable? Yes.

Analysis – There is a small possibility that fish might be struck by falling debris (military expended materials, including sabot petals, armatures, and pusher plates that separate from the projectiles after they're fired), but there would be no impacts on populations or species.

Falling military expended materials hitting the water have an extremely low probability of striking an individual fish or causing a short-term and local displacement of fish in the water column. The impact of military expended material strikes would be inconsequential due to: (1) the limited number of fish found directly at the surface where military expended material strikes could occur, (2) the rare chance that a fish might be directly struck at the surface by military expended materials, (3) the ability of most fish to detect and avoid an object falling through the water below the surface, and (4) the low probability of strike based on impact footprint area. The potential impacts of military expended material materials would be short-term (seconds), localized disturbances of the water surface and are not expected to yield any behavioral changes or lasting effects on fish.

The WFF Range Safety Officer would develop a flight safety plan for each HVP test. The plans would establish a hazard area and, as needed, a caution area for each projectile. Each hazard area would encompass a corridor or a cone extending from the gun along the firing azimuth and a buffer of specified radius around the target area. The target areas vary between 5 to 100 nautical miles from Wallops Island (Figure 2). If established for a projectile, the caution area would extend from the gun along the firing azimuth to a distance beyond the hazard area. During a test,

no vessels would be allowed within the hazard area and only a specified number of vessels would be allowed in the caution area. Depending on the configurations of the hazard area and caution area specified in the operative flight safety plan, vessel movement through Chincoteague Inlet may be temporarily stopped or restricted.

To support HVP testing, WFF typically would restrict vessel movements near Wallops Island for 30 to 60 minutes per projectile firing. Based on a median value of 45 minutes per firing, vessel movements near Wallops Island would be restricted approximately 80 hours annually in the first and second years, approximately 110 hours annually in the third and fourth years, and approximately 190 hours annually from the fifth year on. WFF may allow passage through the hazard area during gaps between firings, providing the gaps are of sufficient duration to allow safe transit across the area.

Several factors would contribute to minimizing the effects of these vessel restrictions on commercial and recreational fishing. First, NASA works with the public and adjusts the azimuth of the firing to avoid major boating corridors and fishing areas. Second, information on the time and duration of each test would be made available in advance through flyers and notices to mariners over maritime frequency radio and on the WFF website. Boaters and fishermen in the area are familiar with WFF's range restrictions and are aware that they might need to shift the timing and location of their activities. Finally, gun firing would be intermittent and would include long periods during which vessels may be allowed to pass under controlled conditions, through the hazard area, consistent with the Navy's and NASA's policy to make all reasonable efforts to minimize public inconvenience.

Neither the projectiles that would be fired nor the vessels used to patrol the edges of the hazard area during testing are painted with TBT.

Subaqueous Lands Management

The management program for subaqueous lands establishes conditions for granting or denying permits to use state-owned bottomlands based on considerations of potential effects on marine and fisheries resources, wetlands, adjacent or nearby properties, anticipated public and private benefits, and water quality standards established by the DEQ Water Division. The program is administered by the MRC (Virginia Code §28.2-1200 through §28.2-1213).

Consistent to the Maximum Extent Practicable? Yes.

Analysis – Based on discussions with VMRC, the Proposed Action would not require a permit from VMRC to use state-owned, subaqueous bottomlands because no filling would take place.

Military expended materials – aluminum sabots and armatures and titanium pusher plates (and eventually carbon-fiber sabots) – would fall from projectiles into the water up to three nautical miles from the guns and land on the bottom. The direction of fire would move within an arc so that expended materiel would be broadly scattered and would not pile up.

Wetlands Management

The purpose of the wetlands management program is to preserve tidal wetlands, prevent their despoliation, and accommodate economic development in a manner consistent with wetlands preservation.

(i) The tidal wetlands program is administered by the MRC (Virginia Code §28.2-1301 through

§28.2-1320).

(ii) The Virginia Water Protection Permit program administered by the DEQ includes protection of wetlands --both tidal and non-tidal. This program is authorized by Virginia Code §62.1-44.15.20 and §62.1-44.15-21 and the Water Quality Certification requirements of §401 of the Clean Water Act of 1972.

Consistent to the Maximum Extent Practicable? Yes.

Analysis – No tidal or non-tidal wetlands are located within the footprints of the alternative sites for the Proposed Action. The sites were selected to avoid impacts to wetlands.

Dunes Management

Dune protection is carried out pursuant to the Coastal Primary Sand Dune Protection Act and is intended to prevent destruction or alteration of primary dunes. This program is administered by the Marine Resources Commission (Virginia Code §28.2-1400 through §28.2-1420).

Consistent to the Maximum Extent Practicable? Yes.

Analysis – No alteration of or construction on a coastal primary sand dune would take place under the Proposed Action. The alternative sites have been developed and used for Navy and NASA activities for many years.

A rock seawall partially covered with sand functions as the primary dune along this part of Wallops Island; it separates the proposed testing area from the beach (see Figures 6 and 7). The seawall and beach were restored in recent years under NASA's ongoing Shoreline Restoration and Infrastructure Protection Program.

No debris from testing would fall on land; this conclusion is based on recent railgun program measurements of the minimum and maximum distances HVP sabots and pusher plates landed when fired from a 5"/62 powder gun.

Non-point Source Pollution Control

*Virginia's Erosion and Sediment Control Law requires soil-disturbing projects to be designed to reduce soil erosion and to decrease inputs of chemical nutrients and sediments to the Chesapeake Bay, its tributaries, and other rivers and waters of the Commonwealth. This program is administered by DEQ (Virginia Code §*62.1-44.15:51 et seq.*).*

Consistent to the Maximum Extent Practicable? Yes.

Analysis – To the maximum extent feasible, the two guns and supporting facilities (10x30-foot command shelter; two 8x20-foot equipment storage shelters; radar instrumental power van; mobile Weibel radar; and a pulsed-power system to power the railgun) would be erected on existing concrete pavement (old rocket launch pads or a road). Facilities not on existing pavement would be placed on gravel. Pilings would be installed to elevate the railgun, the pulsed-power system, and the command and storage structures above the 100-year flood level. The amount of new impervious surface that would result from construction of the Preferred Alternative on the 2.0-acre Pad 5 site would be approximately 3,400 square feet (0.078 acre). Use of the 1.8-acre Pad 4 Alternative site would result in about 1,180 square feet (0.028 acres) of new impervious surface. Use of the 1.8-acre Elevated Road Alternative would result in about 7,633 square feet (0.17 acres) of new impervious surface.

Because construction activities would disturb more than 10,000 square feet of land, the

construction contractor would prepare and implement an erosion and sediment control plan in accordance with the Virginia Erosion and Sediment Control Law and regulations.

When the design is finalized, it is likely than more than one acre of land would be disturbed for the construction of the proposed facility. If this is the case, the construction contractor would be required to obtain a General Permit for Discharges of Stormwater from Construction Activities in accordance with 9 VAC 25-880 and prepare a stormwater pollution prevention plan. Best management practices would be followed during the construction of the powder gun and EM railgun support facilities to minimize soil erosion and control non-point source pollution.

Point Source Pollution Control

The point source program is administered by the State Water Control Board pursuant to Virginia Code §62.1-44.15. Point source pollution control is accomplished through the implementation of the National Pollutant Discharge Elimination System (NPDES) permit program established pursuant to §402 of the federal Clean Water Act and administered in Virginia as the VPDES permit program. The Water Quality Certification requirements of §401 of the Clean Water Act of 1972 is administered under the Virginia Water Protection Permit program.

Consistent to the Maximum Extent Practicable? Yes.

Analysis – No new point source would be required for this project. In accordance with the NPDES and the VPDES permit program, NASA maintains a WFF-wide stormwater pollution prevention plan to ensure that its operations have minimal impact on stormwater quality.

Shoreline Sanitation

The purpose of this program is to regulate the installation of septic tanks, set standards concerning soil types suitable for septic tanks, and specify minimum distances that tanks must be placed away from streams, rivers, and other waters of the Commonwealth. This program is administered by the Department of Health (Virginia Code §32.1-164 through §32.1-165).

Consistent to the Maximum Extent Practicable? Yes.

Analysis – This enforceable policy not apply to this project because no septic tanks would be installed.

Air Pollution Control

The program implements the federal Clean Air Act to provide a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards. This program is administered by the State Air Pollution Control Board (Virginia Code §10.1-1300 through 10.1-1320).

Consistent to the Maximum Extent Practicable? Yes.

Analysis – The region of influence for the Proposed Action is the Northeastern Virginia Intrastate air quality control region (defined in 40 C.F.R. §81.144), which includes areas designated as in attainment/unclassifiable for all criteria pollutants.

The emissions generated from construction activities, including emissions from construction equipment and from fugitive dust, would not be significant. A soil and erosion control plan in accordance with the Virginia Soil and Erosion Control regulations (9 Virginia Code 25-840) would be developed during project planning and carried out during construction to minimize fugitive dust.

The testing of the 5"/62 powder gun would use small quantities of propellant – an MK99 formulation – to fire projectiles. The primary constituent is cyclotrimethylenetrinitramine, also known as RDX. The propellant would be almost completely expended – more than 99.99 percent – during firing and would not add measurably to current emissions. Air emissions from a 10-shot test of the powder gun using MK99 propellant are summarized in the table below. Most emissions would be compounds, such as CO, nitrogen, and water, that are naturally found in air.

The EM railgun does not require the use of a propellant. Firing of railgun projectiles generates small quantities of aluminum oxide (Al_2O_3) in the immediate vicinity of firing caused by the abrasion of aluminum components. The quantity and form of aluminum oxide that would be emitted is not considered toxic and would not require any additional safety measures.

These emissions would not violate federal Clean Air Act or Virginia air quality standards. No permits would be required.

Table 1: MK99 Emissions from Powder Gun Shots

Compound	Mole/Kilogram	Kilogram/Shot	Pound/Shot
Carbon monoxide (CO)	17.0	15.14	33.38
Nitrogen (N_2)	10.9	9.69	21.37
Water (H_2O)	7.1	4.07	8.97
Carbon dioxide (CO_2)	1.57	2.19	4.83
H_2 (Hydrogen)	9.23	0.59	1.30
Hydrogen cyanide (HCN)	0.039	0.03	0.07
Nitric oxide (NO)	0.0028	0.003	0.006
Methane (CH_4)	0.0042	0.002	0.005
Cyanide (CN)	0.000052	0.00004	0.00009
Nitrogen dioxide (NO_2)	0.00000017	<0.000001	<0.000001

Coastal Lands Management

Coastal Lands Management is a state-local cooperative program administered by DEQ's Water Division and 84 localities in Tidewater, Virginia established pursuant to the Chesapeake Bay Preservation Act (Virginia Code §§ 62.1-44.15:67 through 62.1-44.15:79) and Chesapeake Bay Preservation Area Designation and Management Regulations (Virginia Administrative Code 9 VAC 25-830-10 et seq.).

Consistent to the Maximum Extent Practicable? Yes.

Analysis – The Proposed Action would not include land development activities that would affect the Chesapeake Bay or its tributaries. Although Accomack County has adopted the Chesapeake Bay Preservation Act restrictions for its seaside riparian areas, NASA's Wallops Island is specifically excluded from this overlay area.

3. SUMMARY OF FINDINGS

The Navy has determined that the Proposed Action, which would be implemented in accordance with associated mitigation measures, would be consistent to the maximum extent practicable

with the federally-approved enforceable policies of the VCP, pursuant to the Coastal Zone Management Act of 1972, as amended, and in accordance with 15 C.F.R. Part 930, Subpart C.

Virginia Department of Environmental Quality's Federal Coastal Consistency Determination Response

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COMMONWEALTH of VIRGINIA

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April 16, 2014

Ms. Jeanne L. Hartzell
Environmental Program Manager
Naval Surface Warfare Center Dahlgren
17483 Dahlgren Road, Suite 104
Bldg 189, Rm 114
Dahlgren, VA 22448-5119

RE: Federal Consistency Determination: Testing Hypervelocity Projectiles and Electromagnetic Railgun at NASA Wallops Flight Facility located in Accomack County (DEQ 14-038F)

Dear Ms. Hartzell:

The Commonwealth of Virginia has completed its review of the federal consistency determination (FCD) for the above-referenced project. The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of FCDs and responding on behalf of the Commonwealth. This letter is in response to the FCD dated February 28, 2014, (received March 13, 2014). The following agencies participated in this review:

Department of Environmental Quality
Department of Game and Inland Fisheries
Department of Conservation and Recreation
Department of Health
Department of Historic Resources
Marine Resources Commission

The Virginia Institute of Marine Science, Accomack-Northampton Planning District Commission and Accomack County also were invited to comment on the project.

PROJECT DESCRIPTION

The U.S. Department of the Navy (Navy) submitted a FCD for the installation and operation of a powder gun and electromagnetic railgun at the National Aeronautics and Space Administration (NASA) Wallops Flight Facility on Wallops Island in Accomack County. The Navy proposes to test hypervelocity projectiles (HVP), and integrate HVPs with the railgun and the railgun weapons system with combat systems equipment. The proposed action would require firing projectiles at targets from 5 to 100 nautical miles at offshore targets in the Virginia Capes Range Complex. The proposed site for the guns is the existing Surface Combat Systems Center on Wallops Island. The proposed project would require constructing a command shelter (10 by 30 feet in size), two storage shelters, and other equipment on existing concrete pavement. If facilities are not placed on existing concrete, they will be placed on gravel. Pilings would be installed to elevate the railgun, the pulsed-power system, and command and storage structures above the 100-year floodplain. The FCD states that the project is consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Zone Management Program (VCP).

FEDERAL CONSISTENCY UNDER THE COASTAL ZONE MANAGEMENT ACT

This FCD is submitted pursuant to the federal consistency regulation 15 Code of Federal Regulations Part 930 Subpart C Section 930.31. Pursuant to the Coastal Zone Management Act of 1972, as amended, federal activities located inside or outside of Virginia's designated coastal management area that can have reasonably foreseeable effects on coastal resources or coastal uses must, to the maximum extent practicable, be implemented in a manner consistent with the VCP. The VCP consists of a network of programs administered by several agencies. In order to be consistent with the VCP, the project activities must be consistent with the enforceable policies of the VCP and all the applicable permits and approvals listed under the enforceable policies of the VCP must be obtained prior to commencing the project. DEQ coordinates the review of FCDs with agencies administering the enforceable and advisory policies of the VCP.

PUBLIC PARTICIPATION

In accordance with 15 CFR §930.2, a public notice of this proposed action was published on the DEQ website from March 31, 2014 to April 8, 2014. No public comments were received in response to the notice.

FEDERAL CONSISTENCY CONCURRENCE

The FCD states that the project is consistent with the enforceable policies of the VCP. The reviewing agencies that are responsible for the administration of the enforceable

policies generally agree with the FCD. Based on the review of the FCD and the comments submitted by agencies administering the enforceable policies of the VCP, DEQ concurs that the proposed project is consistent with the VCP provided all applicable permits and approvals are obtained as described below. However, other state approvals which may apply to this project are not included in this FCD. Therefore, the responsible agent must also ensure that this project is constructed and operated in accordance with all applicable federal, state and local laws and regulations. The analysis which follows responds to the discussion of the enforceable policies of the VCP that apply to this project.

ANALYSIS OF ENFORCEABLE POLICIES

1. Fisheries Management. The FCD (page 9) states that there is a small possibility that fish may be struck by falling debris but there would be no impact on populations or species.

1(a) Agency Jurisdiction.

1(a)(i) Virginia Marine Resources Commission and Department of Game and Inland Fisheries. The fisheries management enforceable policy is administered by the Marine Resources Commission (VMRC) (§28.2-200 to §28.2-713) and the Department of Game and Inland Fisheries (DGIF) (§29.1-100 to §29.1-570).

1(a)(ii) Department of Health. The Virginia Department of Health's (VDH) Division of Shellfish Sanitation (DSS) is responsible for protecting the health of the consumers of molluscan shellfish and crustacea by ensuring that shellfish growing waters are properly classified for harvesting, and that molluscan shellfish and crustacea processing facilities meet sanitation standards. The mission of this Division is to minimize the risk of disease from molluscan shellfish and crustacea products at the wholesale level by classifying shellfish waters for safe commercial and recreational harvest; by implementing a statewide regulatory inspection program for commercial processors and shippers; and by providing technical guidance and assistance to the shellfish and crustacea industries regarding technical and public health issues.

1(b) Agency Comments. DGIF did not respond to DEQ's request for comment. VMRC and VDH did not indicate that fisheries would be affected.

2. Subaqueous Lands. The FCD (page 10) states that expended materials would fall from the projectiles into the water up to 3 nautical miles from the guns and land on the ocean bottom. The material would be broadly scattered.

2(a) Agency Jurisdiction. In accordance with the Coastal Zone Management Act of 1972 (§1456(c)) and federal consistency regulations (15 CFR, Part 930, Subpart D, §930.30 *et seq.*), the applicant's actions must be consistent with the enforceable policies of the VCP, including the subaqueous lands management enforceable policy. The Virginia Marine Resources Commission (VMRC), pursuant to Section 28.2-1200 *et seq.* of the Code of Virginia, has jurisdiction over any encroachments in, on, or over any state-owned rivers, streams, or creeks in the Commonwealth.

The VMRC serves as the clearinghouse for the Joint Permit Application (JPA) used by the:

- Corps for issuing permits pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act;
- DEQ for issuance of a VWPP;
- VMRC for encroachments on or over state-owned subaqueous beds as well as tidal wetlands; and
- local wetlands board for impacts to wetlands.

The VMRC distributes the completed JPA to the appropriate agencies. Each agency conducts its review and respond.

2(b) Agency Finding. VMRC states that the proposal would not require a permit from VMRC.

2(c) Agency Comments. VMRC states that there may be gill nets in the area during certain times of the year and there may be possible navigational issues leading into Chincoteague Inlet.

2(d) Agency Recommendation. Notify the U.S. Coast Guard when activities may affect marine navigation.

3. Air Pollution Control. The FCD (page 12) indicates that air emissions from construction would not be significant.

3(a) Agency Jurisdiction. The DEQ Air Division, on behalf of the Air Pollution Control Board, is responsible for developing regulations that implement Virginia's Air Pollution Control Law. DEQ is charged with carrying out mandates of the state law and related regulations as well as Virginia's federal obligations under the Clean Air Act as amended in 1990. The objective is to protect and enhance public health and quality of life through control and mitigation of air pollution. The division ensures the safety and quality of air in Virginia by monitoring and analyzing air quality data, regulating sources of air pollution, and working with local, state and federal agencies to plan and implement

strategies to protect Virginia's air quality. The appropriate regional office is directly responsible for the issue of necessary permits to construct and operate all stationary sources in the region as well as to monitor emissions from these sources for compliance. As a part of this mandate, the environmental documents of new projects to be undertaken in the state are also reviewed. In the case of certain projects, additional evaluation and demonstration must be made under the general conformity provisions of state and federal law.

3(b) Ozone Attainment Area. According to the DEQ Air Division, the project site is located in an ozone attainment area.

3(c) Requirements.

3(c)(i) Fugitive Dust. During land-disturbing activities, fugitive dust must be kept to a minimum by using control methods outlined in 9VAC5-50-60 *et seq.* of the Regulations for the Control and Abatement of Air Pollution. These precautions include, but are not limited to, the following:

- Use, where possible, of water or suitable chemicals for dust control during the proposed demolition and construction operations and from material stockpiles;
- Installation and use of hoods, fans and fabric filters to enclose and vent the handling of dusty materials;
- Covering of open equipment for conveying materials; and
- Prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion.

3(c)(ii) Open Burning. If project activities include the burning of vegetative debris or use of special incineration devices in the disposal of land clearing debris during construction, this activity must meet the requirements under 9VAC5-130 *et seq.* of the regulations for open burning, and it may require a permit. The regulations provide for, but do not require, the local adoption of a model ordinance concerning open burning. Contact officials with Accomack County to determine what local requirements, if any, exist.

3(d) Conclusion. Provided the project complies with applicable requirements, it would be consistent with the air pollution control enforceable policy of the VCP.

4. Coastal Lands Management. The FCD (page 13) states that Wallops Island is excluded from Accomack County's Chesapeake Bay Preservation Area.

4(a) Agency Jurisdiction. Effective July 1, 2013, the DEQ Water Division (WD) Office of Stormwater Management (OSM) administers the coastal lands management

enforceable policy of the VCP, which is governed by the Chesapeake Bay Preservation Act and Chesapeake Bay Preservation Area Designation and Management Regulations (Regulations).

4(b) Agency Findings. The DEQ Water Division OSM states that the Wallops Island facility is located along the Atlantic Ocean shoreline. Accomack County has extended the Chesapeake Bay Preservation Areas (CBPAs) to include the Atlantic Ocean watershed. However, the county did not designate CBPAs for federally-owned lands. As the project is located outside of the local CBPA designation and outside of the Chesapeake Bay watershed, there are no requirements for compliance with the Chesapeake Bay Preservation Act for this project.

5. Non-point Source Pollution Control. The FCD (page 12) states that it is likely that more than 1 acre of land will be disturbed.

5(a) Agency Jurisdiction. Effective July 1, 2013, the DEQ Water Division OSM administers the non-point source pollution control enforceable policy, which is governed by the Virginia Erosion and Sediment Control Law and Regulations (VESCL&R) and the Virginia Stormwater Management Law and Regulations (VSWML&R).

5(b) Erosion and Sediment Control and Stormwater Management Project-Specific Plans. According to the DEQ Water Division, the Navy and its authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with VESCL&R and VSWML&R, including coverage under the general permit for stormwater discharge from construction activities, and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act-Section 313, federal consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbing activities that result in the total land disturbance of equal to or greater than 10,000 square feet would be regulated by VESCL&R.

Accordingly, the Navy must prepare and implement an ESC plan to ensure compliance with state law and regulations. The ESC plan is submitted to the DEQ regional office that serves the area where the project is located for review for compliance. The Navy is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy (Reference: VESCL 62.1-44.15 *et seq.*).

5(c) General Permit for Stormwater Discharges from Construction Activities (VAR10). DEQ is responsible for the issuance, denial, revocation, termination and enforcement of the Virginia Stormwater Management Program (VSMP) General Permit

for Stormwater Discharges from Construction Activities related to municipal separate storm sewer systems (MS4s) and construction activities for the control of stormwater discharges from MS4s and land disturbing activities under the Virginia Stormwater Management Program.

The operator or owner of construction activities involving land-disturbing activities equal to or greater than 1 acre is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project specific stormwater pollution prevention plan (SWPPP). The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit and the SWPPP must address water quality and quantity in accordance with the Virginia Stormwater Management Program (VSMP) Permit Regulations. General information and forms are available at *www.deq.virginia.gov/Programs/Water/Stormwater Management/VSMPPermits.aspx.*

5(d) Agency Finding. Wallops Flight Facility is regulated under a VPDES individual permit that includes SWPPP implementation, so any storm water associated with this activity would be addressed in the SWPPP.

5(e) Conclusion. For consistency with the nonpoint source pollution control enforceable policy of the VCP, the project must be consistent with the erosion and sediment control and the stormwater management laws and regulations.

ADDITIONAL ENVIRONMENTAL CONSIDERATIONS

In addition to the enforceable policies of the VCP, comments also were provided with respect to applicable requirements and recommendations of the following programs:

1. Solid and Hazardous Waste Management.

1(a) Agency Jurisdiction. Solid and hazardous wastes in Virginia are regulated by DEQ, the Virginia Waste Management Board and the U.S. Environmental Protection Agency. They administer programs created by the federal Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response Compensation and Liability Act (CERCLA), commonly called Superfund, and the Virginia Waste Management Act. DEQ administers regulations established by the Virginia Waste Management Board and reviews permit applications for completeness and conformance with facility standards and financial assurance requirements. All Virginia localities are required, under the Solid Waste Management Planning Regulations, to identify the strategies they will follow on the management of their solid wastes to include items such as facility siting, long-term (20-year) use and alternative programs such as materials recycling and composting.

1(b) Database Search. The DEQ Division of Land Protection and Revitalization (DLPR) (formerly the Waste Division) conducted a review of a Geographic Information System database and determined that there were waste sites located within the same zip code of the project site:

RCRA/Hazardous Waste Sites

- ID# VAR000508770 – Assateague Island National Seashore Toms Cove, Chincoteague Road, Wallops Island, VA 23337. Contact: Richard Barrett at 410-641-1443.
- ID# VAR000518811 – BAYSYS Techonologies LLC, Fulton Street, Wallops Island, VA 23337. Contact: Dominick Scott at 757-787-7668, extension 2017.
- ID# VAD980555387 – Chesapeake & Potomac Telephone, Wallops Island, Wallops Station, VA 23337. Contact: Bartley Terry at 202-392-8284.
- ID# VAQR000007211 – Cropper USAR Ctr, Kearsarg Circle, Wallops Island, VA 23337. Contact: John Pontier at 301-677-7593.
- ID# VAR000518845 – Mid-Atlantic Regional Spaceport, 34200 Fulton Street, Wallops Island, VA 23337. Contact: Richard D. Baldwin at 757-824-2335.
- ID# VA7800020888 – NASA GSFC Wallops Flight Facility, Fulton Street, Wallops Island, VA 23337. Contact: Joel T. Mitchell at 757-824-1127.
- ID# VA8800010763 – NASA GSFC Wallops Flight Facility, Fulton Street, Main Base, Wallops Island, VA 23337. Contact Joel T. Mitchell at 757-824-1127.
- ID# VAR000518829 – Navy-Surface Combat Systems Center Buildings R-2, R-30, R-20, 30 Battlegroup Way, Wallops Island, VA 23337. Contact: Marilyn C. Ailes at757-824-2082.
- ID# VAR000518837 – Navy-Surface Combat Systems Center Buildings V-10/20/21, V-3, V-24, Artist, Seaside Road, Wallops Island, VA 23337. Contact: Marilyn C. Ailes at757-824-2082.
- ID# VAR000518803 – NOAA, Wallops Command and Data Acquisition Station, 35663 Chincoteague Road, Wallops Island, VA 23337. Contact: Stephen R. Howard at 757-824-7311.
- ID# VAR000509240 – Wallops FUDS Program, NASA Wallops Flight Facility, Wallops Island, VA 23337. Contact: George H. Mears at 757-201-7181.

CERLCLA Sites

- ID #VAN000306904 – Chincoteague Naval Auxiliary Air Station, Wallops Island, Accomack County. Status: Not NPL.
- ID #VA8800010763 – NASA Wallops Island, Accomack County. Status: Not NPL.

- ID #VAN000306905 – Naval Aviation Ordnance Test Station, Wallops Island, Accomack County. Status: Not NPL.

Formerly Used Defense Site (FUDS)

- Wallops Island – ID#CO3VA0301. Federal ID# VA9799F1697.

Petroleum Releases

- A number of petroleum release events were identified at the Wallops Island site but proximity to the project site was not determined.

1(c) Petroleum Storage Tanks. DEQ TRO states that there has been one reported release at or adjacent to the proposed project. This is a closed case at Building V10, PC#1995-2405.

1(d) Requirements.

- Report evidence of a petroleum release, if discovered during construction of this project, to DEQ TRO as authorized by Virginia Code Section 62.1-44.34.8 through 9 and 9VAC25-580-10 *et seq.*
- Characterize and properly dispose of petroleum-contaminated soils and ground water generated during the construction of this project.
- Report the installation or use of any portable aboveground petroleum storage tank (>660 gallons, 9VAC25-91-10 *et seq.*) *for more than 120 days* to DEQ TRO.
- Any soil/sediment that is suspected of contamination or wastes that are generated during construction-related activities must be tested and disposed of in accordance with applicable federal, state, and local laws and regulations.

1(e) Agency Recommendations.

- DEQ encourages all construction projects and facilities to implement pollution prevention principles, including:
    - the reduction, reuse and recycling of all solid wastes generated; and
    - the minimization and proper handling of generated hazardous wastes.

- Review the DEQ petroleum release database, which is available online at *www.deq.virginia.gov/mapper_ext/default.aspx?service=public/wimby*, to determine if there is the potential for contaminated soils in the project area.

2. Wildlife Resources.

2(a) Agency Jurisdiction. DGIF, as the Commonwealth's wildlife and freshwater fish management agency, exercises enforcement and regulatory jurisdiction over wildlife and freshwater fish, including state- or federally-listed endangered or threatened species, but excluding listed insects (Virginia Code Title 29.1). DGIF is a consulting agency under the U.S. Fish and Wildlife Coordination Act (16 U.S.C. sections 661 *et seq.*) and provides environmental analysis of projects or permit applications coordinated through DEQ and several other state and federal agencies. DGIF determines likely impacts upon fish and wildlife resources and habitat, and recommends appropriate measures to avoid, reduce or compensate for those impacts.

2(b) Agency Findings. According to DGIF's records, federally-listed endangered leatherback sea turtles, federally-listed threatened loggerhead sea turtles and a colonial waterbird colony containing Virginia WAP Tier IV Forster's terns have been documented from the project area. It appears that the proposed project sites have been disturbed and improved. Therefore, DGIF does not anticipate the construction of the facility on Wallops is likely to result in adverse impacts upon these species and resources.

2(c) Agency Recommendation.

DGIF has the following recommendations to protect sea turtles and the colonial waterbird colony:

- Coordinate with the FWS regarding possible impacts upon leatherback sea turtles, loggerhead sea turtles and a colonial waterbird colony.
- Coordinate with the FWS regarding possible impacts facility operation (projectile launching) may have upon migrating birds, nesting birds, nesting sea turtles, and marine mammals known from nearby sites and adjacent waters.
- Avoid and minimize impacts upon such species to the greatest extent possible.

To minimize overall impacts to wildlife and natural resources, DGIF offers the following comments about development activities:

- Avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable.
- Maintain undisturbed naturally vegetated buffers of at least 100 feet in width around all on-site wetlands and on both sides of all perennial and intermittent streams
- Design and replicate stormwater controls to replicate and maintain the hydrographic condition of the site prior to the change in landscape. This should include, but not be limited to, utilizing bioretention areas, and minimizing the use of curb and gutter in favor of grassed swales. Bioretention areas (also called rain

gardens) and grass swales are components of Low Impact Development (LID). They are designed to capture stormwater runoff as close to the source as possible and allow it to slowly infiltrate into the surrounding soil. They benefit natural resources by filtering pollutants and decreasing downstream runoff volumes.

- Adhere to a time-of-year restriction from March 15 through August 15 of any year for all tree removal and ground clearing to protect nesting resident and migratory songbirds.
- Adhere to erosion and sediment controls during ground disturbance.

2(d) Additional Information. DGIF maintains a database (*http://vafwis.org/fwis/)* of wildlife locations, including threatened and endangered species, trout streams and anadromous fish waters.

3. Historic Structures and Architectural Resources.

3(a) Agency Jurisdiction. The Department of Historic Resources (DHR) conducts reviews of projects to determine their effect on historic structures or cultural resources under its jurisdiction. DHR, as the designated Historic Preservation Office for the Commonwealth, ensures that federal actions comply with Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, and its implementing regulation at 36 Code of Federal Regulations Part 800. The NHPA requires federal agencies to consider the effects of federal projects on properties that are listed or eligible for listing on the National Register of Historic Places. Section 106 also applies if there are any federal involvements, such as licenses, permits, approvals or funding. DHR also provides comments to DEQ through the state environmental impact report review process.

3(b) Agency Comments. DHR's records indicate that the Navy has created a draft application in the DHR ePix system for this undertaking but has not yet submitted it for review pursuant to Section 106 of the National Historic Preservation Act, as amended, and its implementing regulation 36 CFR Part 800. Since a draft application has been created, DHR anticipates that the Navy will submit the project for consideration.

3(c) Requirement. Consult directly with DHR, as necessary, pursuant to Section 106 of the National Historic Preservation Act (as amended) and its implementing regulations codified at 36 CFR Part 800 which require federal agencies to consider the effects of their undertakings on historic properties.

4. Natural Heritage Resources.

4(a) Agency Jurisdiction.

4(a)(i) Natural Heritage Resources. The mission of the Department of Conservation and Recreation (DCR) is to conserve Virginia's natural and recreational resources. DCR supports a variety of environmental programs organized within seven divisions including the DNH. DNH's mission is conserving Virginia's biodiversity through inventory, protection, and stewardship. The Virginia Natural Area Preserves Act, 10.1-209 through 217 of the *Code of Virginia*, was passed in 1989 and codified DCR's powers and duties related to statewide biological inventory: maintaining a statewide database for conservation planning and project review, land protection for the conservation of biodiversity, and the protection and ecological management of natural heritage resources (the habitats of rare, threatened and endangered species, significant natural communities, geologic sites, and other natural features).

4(a)(ii) Threatened and Endangered Plant and Insect Species. The Endangered Plant and Insect Species Act of 1979, Chapter 39, §3.1-102- through 1030 of the *Code of Virginia*, as amended, authorizes the Virginia Department of Agriculture and Consumer Services (VDACS) to conserve, protect and manage endangered species of plants and insects. VDACS Virginia Endangered Plant and Insect Species Program personnel cooperates with the FWS, DCR DNH and other agencies and organizations on the recovery, protection or conservation of listed threatened or endangered species and designated plant and insect species that are rare throughout their worldwide ranges. In those instances where recovery plans, developed by FWS, are available, adherence to the order and tasks outlined in the plans should be followed to the extent possible. VDACS has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act. Under a Memorandum of Agreement established between the VDACS and DCR, DCR has the authority to report for VDACS on state-listed plant and insect species.

4(b) Agency Finding. The Biotics Data System documents the presence of natural heritage resources in the project area. However, due to the scope of the activity and the distance to the resources, DCR DNH does not anticipate that this project will adversely impact these natural heritage resources.

4(c) Threatened and Endangered Plant and Insect Species. DCR states that the current activity will not affect any documented state-listed plant and insect species.

4(d) Natural Area Preserves. DCR states that there are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

4(e) Agency Recommendation. Contact DCR DNH to re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

5. Water Supply.

5(a) Agency Jurisdiction. The Virginia Department of Health (VDH) Office of Drinking Water (ODW) reviews projects for the potential to impact public drinking water sources (groundwater wells, springs and surface water intakes). The VDH ODW administers both federal and state laws governing waterworks operation.

5(b) Agency Findings. VDH ODW states there are no apparent impacts from the proposed project. There are no groundwater wells within a 1-mile radius of the project site. No surface water intakes are located within a 5-mile radius of the project site. The project is not within Zone 1 (up to 5 miles into the watershed) or Zone 2 (greater than 5 miles into the watershed) of any public surface water sources.

Contact VDH (Barry E. Matthews at 804-864-7515) for additional information if necessary.

6. Aviation Impacts.

6(a) Agency Jurisdiction. The Virginia Department of Aviation (DOAv) is a state agency that plans for the development of the state aviation system; promotes aviation; grants aircraft and airports licenses; and provides financial and technical assistance to cities, towns, counties and other governmental subdivisions for the planning, development, construction and operation of airports, and other aviation facilities.

6(b) Agency Findings. DOAv states that it has no objection to the proposed project.

6(c) Agency Recommendation. DOAv recommends that the Navy undertake clearing precautions in the hazard area for aircraft.

7. Pollution Prevention. DEQ advocates that principles of pollution prevention be used in all construction projects as well as in facility operations. Effective siting, planning and on-site best management practices will help to ensure that environmental impacts are minimized. However, pollution prevention techniques also include decisions related to construction materials, design and operational procedures that will facilitate the reduction of wastes at the source.

7(a) Agency Recommendations. We have several pollution prevention recommendations that may be helpful during the construction:

- Consider development of an effective Environmental Management System (EMS). An effective EMS will ensure that the proposed facility is committed to minimizing its environmental impacts, setting environmental goals and achieving improvements in its environmental performance. DEQ offers EMS

development assistance and recognizes facilities with effective Environmental Management Systems through its Virginia Environmental Excellence Program.

- Consider environmental attributes when purchasing materials. For example, the extent of recycled material content, toxicity level and amount of packaging should be considered and can be specified in purchasing contracts.
- Consider contractors' commitment to the environment when choosing contractors. Specifications regarding raw materials and construction practices can be included in contract documents and requests for proposals.
- Choose sustainable materials and practices for infrastructure and building construction and design. These could include asphalt and concrete containing recycled materials, and integrated pest management in landscaping, among other things.

The DEQ Office of Pollution Prevention provides information and technical assistance relating to pollution prevention techniques. If interested, please contact DEQ (Sharon Baxter at 804-698-4344).

8. Local and Regional Comments. As customary, DEQ invited Accomack County and the Accomack-Northampton Planning District Commission (PDC) to comment on the project.

8(a) Jurisdiction. In accordance with the Code of Virginia, Section 15.2-4207, planning district commissions encourage and facilitate local government cooperation and state-local cooperation in addressing, on a regional basis, problems of greater than local significance. The cooperation resulting from this is intended to facilitate the recognition and analysis of regional opportunities and take account of regional influences in planning and implementing public policies and services. Planning district commissions promote the orderly and efficient development of the physical, social and economic elements of the districts by planning, and encouraging and assisting localities to plan for the future.

8(b) Local Comments. Accomack County did not respond to DEQ's request for comments.

8(c) Regional Comments. The Accomack-Northampton PDC did not respond to DEQ's request for comments.

REGULATORY AND COORDINATION NEEDS

1. Erosion and Sediment Control Plans and General Permit for Stormwater Discharges from Construction Activities.

1(a) Erosion and Sediment Control. According to the DEQ Water Division, clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbing activities that result in the total land disturbance of equal to or greater 10,000 square feet would be regulated by *VESCL&R*. Accordingly, the Navy must prepare and implement an ESC plan to ensure compliance with state law and regulations. The Navy is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy (Reference: VESCL 62.1-44.15 *et seq.*). Submit the plan and direct questions to DEQ TRO (Noah Hill at 757-518-2024 or *Noah.Hill@deq.virginia.gov*).

1(b) General Permit for Stormwater Discharges from Construction Activities (VAR10). The operator or owner of a construction activity involving land disturbance of equal to or greater than 1 acre is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project specific stormwater pollution prevention plan (SWPPP). The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit and the SWPPP must address water quality and quantity in accordance with the *Virginia Stormwater Management Program (VSMP) Permit Regulations*. General information and registration forms for the General Permit are available at *www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/ConstructionGeneralPermit.aspx*. For additional information, contact the DEQ Water Division (Holly Sepety at *Holly.Sepety@deq.virginia.gov*).

2. Air Quality Regulations. The following regulations may apply during construction:

- fugitive dust and emissions control (9VAC5-50-60 *et seq.*); and
- open burning restrictions (9VAC5-130 *et seq.*).

Contact officials with Accomack County for information on any local requirements pertaining to open burning.

Contact DEQ TRO (Troy Breathwaite at *Troy.Breathwaite@deq.virginia.gov* or 757-518-2006) for additional information on air regulations if necessary.

3. Solid and Hazardous Wastes. All solid waste, hazardous waste and hazardous materials must be managed in accordance with all applicable federal, state and local environmental regulations.

These state laws and regulations may apply:

- Virginia Waste Management Act (*Code of Virginia* Section 10.1-1400 *et seq.*);
- Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC20-60);
- Virginia Solid Waste Management Regulations (VSWMR) (9VAC20-81); and
- Virginia Regulations for the Transportation of Hazardous Materials (9VAC20-110).

These federal laws and regulations may apply:

- Resource Conservation and Recovery Act (RCRA) (42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations); and
- U.S. Department of Transportation Rules for Transportation of Hazardous materials (49 Code of Federal Regulations Part 107).

Contact DEQ TRO (Milt Johnston at *Milt.Johnston@deq.virginia.gov* or 757-518-2151) for additional information on waste management.

3(a) Coordination.

- Report evidence of a new petroleum release, if discovered during construction of this project, to DEQ TRO (Lynne Smith at 757-518-2055 or Gene Siudyla at 757-518-2117).
- Report the installation or use of any portable aboveground petroleum storage tank (>660 gallons, 9VAC25-91-10 *et seq.*) *for more than 120 days* to DEQ TRO (DEQ TRO Petroleum Storage Tank Program, Attention: Tom Madigan, 5636 Southern Blvd., Virginia Beach, Virginia 23462, Phone: 757-518-2115).

4. Natural Heritage Resources.

- Contact the DCR DNH (804-371-2708) to re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

5. Wildlife Resources and Protected Species.

- DGIF's database may be accessed at *http://vafwis.org/fwis/* or by contacting DGIF (Shirl Dressler at 804-367-6913).
- Contact DGIF (Amy Ewing at *Amy.Ewing@dgif.virginia.gov*) for additional information regarding its recommendations as necessary.
- Coordinate with the FWS (Cindy Schulz at *cindy_schulz@fws.gov* or 804-824-2426) regarding possible impacts upon leatherback sea turtles, loggerhead sea turtles and a colonial waterbird colony.

- Coordinate with the FWS regarding possible impacts facility operation (projectile launching) may have upon migrating birds, nesting birds, nesting sea turtles, and marine mammals known from nearby sites and adjacent waters.

6. Historic Resources. Consult directly with DHR (Marc Holma at *Marc.Holma@dhr.virginia.gov*) pursuant to Section 106 of the National Historic Preservation Act (as amended) and its implementing regulations codified at 36 CFR Part 800 which require federal agencies to consider the effects of their undertakings on historic properties.

7. Marine Navigation. Notify the U.S. Coast Guard (703-313-5900) when activities may affect marine navigation.

Thank you for the opportunity to comment on this FCD. The detailed comments of reviewers are attached. If you have questions, please do not hesitate to call me at (804) 698-4325 or Julia Wellman at (804) 698-4326.

Sincerely,

Ellie Irons, Program Manager
Environmental Impact Review

Enclosures

cc: Steven B. Miner, Accomack County
Elaine K.N. Meil, Accomack-Northampton PDC

ec: Amy Ewing, DGIF
Robbie Rhur, DCR
Barry Matthews, VDH
Steve Coe, DEQ DLPR
Kotur Narasimhan, DEQ DAPC
Larry Gavan, DEQ
Daniel Moore, DEQ
Holly Sepety, DEQ
Shantelle Nicholson, DEQ
Cindy Keltner, DEQ NRO
Roger Kirchen, DHR
Marc Holma, DHR
Pam Mason, VIMS

George Badger, MRC

Wellman, Julia (DEQ)

From: Ewing, Amy (DGIF)
Sent: Tuesday, April 15, 2014 11:26 AM
To: Wellman, Julia (DEQ)
Cc: Cason, Gladys (DGIF); nhreview (DCR)
Subject: ESSLog# 34628_14-038F_Navy testing of hyper velocity projectiles

We have reviewed the subject project that proposes to construct and operate a hypervelocity projectile testing facility at NASA's Wallops Island Flight Facility in Accomac County, VA.

According to our records, federal Endangered leatherback sea turtles, federal Threatened loggerhead sea turtles and a colonial waterbird colony containing Virginia WAP Tier IV Forster's terns have been documented from the project area. It appears the possible sites of facility location are already disturbed and improved. Therefore, we do not anticipate the construction of the facility on Wallops is likely to result in adverse impacts upon these species and resources. However, we recommend coordination with the USFWS regarding possible impacts upon these species. Further, we recommend close coordination with the USFWS regarding possible impacts facility operation (projectile launching) may have upon migrating birds, nesting birds, nesting sea turtles, and marine mammals known from nearby sites and adjacent waters. We recommend that impacts upon such species be avoided or minimized to the greatest extent possible.

This project is located within 2 miles of a documented occurrence of a state or federal threatened or endangered plant or insect species and/or other Natural Heritage coordination species. Therefore, we recommend coordination with VDCR-DNH regarding the protection of these resources.

To minimize overall impacts to wildlife and our natural resources, we offer the following comments about development activities: We recommend that the applicant avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable. We recommend maintaining undisturbed naturally vegetated buffers of at least 100 feet in width around all on-site wetlands and on both sides of all perennial and intermittent streams

We recommend that the stormwater controls for this project be designed to replicate and maintain the hydrographic condition of the site prior to the change in landscape. This should include, but not be limited to, utilizing bioretention areas, and minimizing the use of curb and gutter in favor of grassed swales. Bioretention areas (also called rain gardens) and grass swales are components of Low Impact Development (LID). They are designed to capture stormwater runoff as close to the source as possible and allow it to slowly infiltrate into the surrounding soil. They benefit natural resources by filtering pollutants and decreasing downstream runoff volumes.

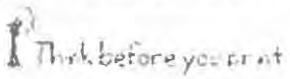
We recommend that all tree removal and ground clearing adhere to a time of year restriction protective of resident and migratory songbird nesting from March 15 through August 15 of any year.

We recommend adherence to erosion and sediment controls during ground disturbance.

We defer FCD to MRC as this site drains to marine waters.

Thanks, Amy

Amy Ewing ☯ Environmental Services Biologist/FWIS Manager ☯ VA Dept. of Game and Inland Fisheries ☯ 4010 West Broad St. Richmond, VA 23230 ☯ 804-367-2211 ☯ www.dgif.virginia.gov



Molly Joseph Ward
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

600 East Main Street, 24th Floor
Richmond, Virginia 23219
(804) 786-6124

MEMORANDUM

DATE: April 7, 2014

TO: Julia Wellman, DEQ

FROM: Roberta Rhur, Environmental Impact Review Coordinator

SUBJECT: DEQ 14-038F, Hypervelocity Projectiles & Electromagnetic Railgun Testing, NASA Wallops

Division of Natural Heritage

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

Biotics documents the presence of natural heritage resources in the project area. However, due to the scope of the activity and the distance to the resources, we do not anticipate that this project will adversely impact these natural heritage resources.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Gladys Cason (804-367-0909 or Gladys.Cason@dgif.virginia.gov). This project is located within 2 miles of documented occurrences of state and federally listed animals. Therefore, DCR recommends coordination with the U.S. Fish and Wildlife Service (USFWS) and Virginia's regulatory authority for the

management and protection of these species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570).

The remaining DCR divisions have no comments regarding the scope of this project. Thank you for the opportunity to comment.

Cc: Amy Ewing, VDGIF
Troy Andersen, USFWS

Wellman, Julia (DEQ)

From: Dufore, Ezekiel (VDH)
Sent: Monday, April 07, 2014 10:21 AM
To: Wellman, Julia (DEQ)
Cc: Soto, Roy (VDH)
Subject: 14-038F | Testing Hypervelocity Projectiles and Electromagnetic Railgun at NASA Wallops Flight Facility

Testing Hypervelocity Projectiles and Electromagnetic Railgun at NASA Wallops Flight Facility
Project #: 14-038F
Location: Accomack

VDH – Office of Drinking Water has reviewed the above project. Below are our comments as they relate to proximity to **public drinking water sources** (groundwater wells, springs and surface water intakes). Potential impacts to public water distribution systems or sanitary sewage collection systems **must be verified by the local utility.**

No public groundwater wells are within a 1 mile radius of the project site.

No public surface water intakes are located within a 5 mile radius of the project site.

The project is not within Zone 1 (up to 5 miles into the watershed) or Zone 2 (greater than 5 miles into the watershed) of any public surface water sources.

There are no apparent impacts to public drinking water sources due to this project.

The provided documentation indicates that the project does not involve the installation of any septic tanks or drain fields. Therefore, the project appears to be consistent with the *Shoreline Sanitation* policy of the *Virginia Coastal Zone Management Program*.

Ezekiel Dufore
Office of Drinking Water
Virginia Department of Health
James Madison Building
109 Governor Street
Richmond, VA 23219
(w) 804-864-7201
ezekiel.dufore@vdh.virginia.gov

VIRGINIA DEPARTMENT OF
ENVIRONMENTAL QUALITY

MEMORANDUM

TO: Julia Wellman, Environmental Program Planner

FROM: Steve Coe, Division of Land Protection & Revitalization Review Coordinator

DATE: April 1, 2014

COPIES: Sanjay Thirunagari, Division of Land Protection & Revitalization Review Manager; file

SUBJECT: Environmental Impact Report; 14-038F DOD Navy Testing Hypervelocity Projectiles and Electromagnetic Railgun at Wallops Island

The Division of Land Protection and Revitalization (DLPR) has completed its review of the Environmental Impact Review Request for the DOD Navy Testing Hypervelocity Projectiles and Electromagnetic Railgun at Wallops Island in Accomack County, Virginia. We have the following comments concerning the waste issues associated with this project.

Neither solid and nor hazardous waste issues were addressed in the report. The report did not include a search of waste-related data bases. The Waste Division staff conducted a cursory review of its data files including a GIS database search, and was able to identify possible waste sites that would impact or be impacted by the proposed project.

Facility waste sites of concern were located within the same zip code of the proposed project under zip code 23337, but proximity to the project site was not determined.

RCRA/Hazardous Waste Facilities – 11 sites were identified in zip code 23337, but proximity to the project site was not determined.

1) ID# VAR000508770 – Assateague Island National Seashore Toms Cove, Chincoteague Road, Wallops Island, VA 23337. Contact: Richard Barrett at 410-641-1443.
2) ID# VAR000518811 – BAYSYS Techonologies LLC, Fulton Street, Wallops Island, VA 23337. Contact: Dominick Scott at 757-787-7668, extension 2017.
3) ID# VAD980555387 – Chesapeake & Potomac Telephone, Wallops Island, Wallops Station, VA 23337. Contact: Bartley Terry at 202-392-8284.
4) ID# VAQR000007211 – Cropper USAR Ctr, Kearsarg Circle, Wallops Island, VA 23337. Contact: John Pontier at 301-677-7593.
5) ID# VAR000518845 – Mid-Atlantic Regional Spaceport, 34200 Fulton Street, Wallops Island, VA 23337. Contact: Richard D. Baldwin at 757-824-2335.
6) ID# VA7800020888 – NASA GSFC Wallops Flight Facility, Fulton Street, Wallops Island, VA 23337. Contact: Joel T. Mitchell at 757-824-1127.

7) ID# VA8800010763 – NASA GSFC Wallops Flight Facility, Fulton Street, Main Base, Wallops Island, VA 23337. Contact Joel T. Mitchell at 757-824-1127.
8) ID# VAR000518829 – Navy-Surface Combat Systems Center Buildings R-2, R-30, R-20, 30 Battlegroup Way, Wallops Island, VA 23337. Contact: Marilyn C. Ailes at757-824-2082.
9) ID# VAR000518837 – Navy-Surface Combat Systems Center Buildings V-10/20/21, V-3, V-24, Artist, Seaside Road, Wallops Island, VA 23337. Contact: Marilyn C. Ailes at757-824-2082.
10) ID# VAR000518803 – NOAA, Wallops Command and Data Acquisition Station, 35663 Chincoteague Road, Wallops Island, VA 23337. Contact: Stephen R. Howard at 757-824-7311.
11) ID# VAR000509240 – Wallops FUDS Program, NASA Wallops Flight Facility, Wallops Island, VA 23337. Contact: George H. Mears at 757-201-7181.

CERCLA Sites – three, but proximity to the project site was not determined

1) ID #VAN000306904 – Chincoteague Naval Auxiliary Air Station, Wallops Island, Accomack County. Status: Not NPL.
2) ID #VA8800010763 – NASA Wallops Island, Accomack County. Status: Not NPL.
3) ID #VAN000306905 – Naval Aviation Ordnance Test Station, Wallops Island, Accomack County. Status: Not NPL.

The following websites may prove helpful in locating additional information for these identification numbers: http://www.epa.gov/superfund/sites/cursites/index.htm or http://www.epa.gov/enviro/html/rcris/rcris_query_java.html.

FUDs Site – one

Wallops Island – ID#CO3VA0301. Federal ID# VA9799F1697.

Solid Waste Facilities – none

VRP Sites - none

Petroleum Release events – A number of petroleum release events were identified at the Wallops Island site, but proximity to the project site was not determined. Project engineer should review the database to determine if there is the potential for contaminated soils in the project area.

Example: ID# 19952405 – NASA Wallops Flight Facility, Bldg V10, Wallops Island, Virginia 23337. Event Date: 8/10/2007. Status: Closed.

(Note: Dates above are the latest PC Database edit dates of the specific PC Case Nos.)

Please note that the DEQ's Petroleum Contamination (PC) case files of the PC Case Nos., in zip code 23337 and any identified petroleum releases (per the example above) should be evaluated by the project engineer or manager to establish the exact location of the release and the nature and extent of the petroleum release and the potential to impact the proposed project. The facility representative should contact the DEQ's Valley Regional Office for further information and the administrative records of the PC cases which are in close proximity to the proposed project. Web link: http://www.deq.virginia.gov/mapper_ext/default.aspx?service=public/wimby.

NOTE: In any construction or demolition project, the proper management of wastes (solid or hazardous) generated is a priority. The information below provides waste management guidance for the project.

General Comments

Soil, Sediment, and Waste Management

Any soil that is suspected of contamination or wastes that are generated must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations. Some of the applicable state laws and regulations are: Virginia Waste Management Act, Code of Virginia Section 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60); Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-81); Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal laws and regulations are: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous materials, 49 CFR Part 107.

Asbestos and/or Lead-based Paint

All structures being demolished/renovated/ removed should be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to demolition. If ACM or LBP are found, in addition to the federal waste-related regulations mentioned above, State regulations 9VAC 20-81-620 for ACM and 9VAC 20-60-261 for LBP must be followed. Questions may be directed to Ms. Lisa Silvia at the Tidewater Regional Office (757-518-2175).

Pollution Prevention – Reuse - Recycling

Please note that DEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All generation of hazardous wastes should be minimized and handled appropriately.

If you have any questions or need further information, please contact Steve Coe, Environmental Specialist, at (804) 698-4029.

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR PROGRAM COORDINATION

ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY

TO: Julia H. Wellman **DEQ - OEIA PROJECT NUMBER: 14 – 038F**

PROJECT TYPE: ☐ STATE EA / EIR **X FEDERAL EA / EIS** ☐ SCC

X CONSISTENCY DETERMINATION

PROJECT TITLE: TESTING HYPERVELOCITY PROJECTILES AND ELECTROMAGNETIC RAILGUN AT NASA WALLOPS FLIGHT FACILITY

PROJECT SPONSOR: DOD / DEPARTMENT OF THE NAVY

PROJECT LOCATION: **X OZONE ATTAINMENT AREA**

REGULATORY REQUIREMENTSMAY BE APPLICABLE TO: **X CONSTRUCTION**
X OPERATION

STATE AIR POLLUTION CONTROL BOARD REGULATIONS THAT MAY APPLY:

1. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 E – STAGE I
2. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 F – STAGE II Vapor Recovery
3. ☐ 9 VAC 5-45-780 et seq. – Asphalt Paving operations
4. **X 9 VAC 5-130 et seq. – Open Burning**
5. **X 9 VAC 5-50-60 et seq. Fugitive Dust Emissions**
6. ☐ 9 VAC 5-50-130 et seq. - Odorous Emissions; Applicable to_____
7. ☐ 9 VAC 5-50-160 et seq. – Standards of Performance for Toxic Pollutants
8. ☐ 9 VAC 5-50-400 Subpart_____, Standards of Performance for New Stationary Sources, designates standards of performance for the_____
9. ☐ 9 VAC 5-80-1100 et seq. of the regulations – Permits for Stationary Sources
10. ☐ 9 VAC 5-80-1700 et seq. Of the regulations – Major or Modified Sources located in PSD areas. This rule may be applicable to the _____
11. ☐ 9 VAC 5-80-2000 et seq. of the regulations – New and modified sources located in non-attainment areas
12. ☐ 9 VAC 5-80-800 et seq. Of the regulations – Operating Permits and exemptions. This rule may be applicable to _____

COMMENTS SPECIFIC TO THE PROJECT:

K. S. Narasimhan

(Kotur S. Narasimhan)
Office of Air Data Analysis **DATE: March 14, 2014**

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
Fax: 804-698-4019 - TDD (804) 698-4021
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

MEMORANDUM

TO: Daniel Moore

FROM: Shawn Smith, Chesapeake Bay Local Assistance

DATE: April 1, 2014

SUBJECT: DEQ 14-038F Wallops Island Rail Gun, Accomack County

The project proposes to construct a Hypervelocity Projectiles & Electromagnetic Railgun at NASA Wallops Flight Facility in Accomack County. Wallops Island facility is located along the Atlantic Ocean shoreline. Accomack County has extended the Chesapeake Bay Preservation Areas to include the Atlantic Ocean watershed, however, the County did not designate CBPAs for federally owned lands. As the project is located outside of the local CBPA designation and outside of the Chesapeake Bay watershed, there are no requirements for compliance with the Chesapeake Bay Preservation Act for this project.

Wellman, Julia (DEQ)

From: Gavan, Larry (DEQ)
Sent: Thursday, March 13, 2014 8:45 AM
To: Wellman, Julia (DEQ)
Subject: FW: NEW PROJECT Navy 14-038F

Pls. see the comments below.
Thx
L

(a) Agency Jurisdiction. The Department of Environmental Quality (DEQ) administers the *Virginia Erosion and Sediment Control Law and Regulations* (*VESCL&R*) and *Virginia Stormwater Management Law and Regulations* (*VSWML&R*).

(b) Erosion and Sediment Control and Stormwater Management Plans. The Applicant and its authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with *VESCL&R* and *VSWML&R*, including coverage under the general permit for stormwater discharge from construction activities, and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act-Section 313, federal consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbing activities that result in the total land disturbance of equal to or greater than 10,000 square feet (2,500 square feet in Chesapeake Bay Preservation Area) would be regulated by *VESCL&R*. Accordingly, the Applicant must prepare and implement an erosion and sediment control (ESC) plan to ensure compliance with state law and regulations. The ESC plan is submitted to the DEQ Regional Office that serves the area where the project is located for review for compliance. The Applicant is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy. [Reference: VESCL 62.1-44.15 et seq.]

From: Fulcher, Valerie (DEQ)
Sent: Wednesday, March 12, 2014 4:43 PM
To: dgif-ESS Projects (DGIF); Rhur, Robbie (DCR); odwreview (VDH); Coe, Stephen (DEQ); Narasimhan, Kotur (DEQ); Gavan, Larry (DEQ); Moore, Daniel (DEQ); Sepety, Holly (DEQ); Nicholson, Shantelle (DEQ); Keltner, Cindy (DEQ); Kirchen, Roger (DHR); mason@vims.edu; Watkinson, Tony (MRC); Denny, S. Scott (DOAV); Simmers, Susan H. (DOAV)
Cc: Wellman, Julia (DEQ)
Subject: NEW PROJECT Navy 14-038F

Good afternoon - attached is a new EIR review request/project:

Navy: Testing Hypervelocity Projectiles & Electro-magnetic Railgun at NASA Wallops Flight Facility, Accomack County, DEQ #14-038F

Hard copies have been mailed to Accomack County and Accomack-Northampton PDC.

The due date for comments is APRIL 8, 2014. You can send your comments either directly to Julia by email (Julia.Wellman@deq.virginia.gov, or you can send your comments by regular interagency/U.S. mail to the Department of Environmental Quality, Office of Environmental Impact Review, 629 E. Main St., 6th Floor, Richmond, VA 23219. If you have any questions, please email Julia.

Thanks!

Valerie

Valerie A. Fulcher, CAP-OM, Executive Secretary Sr.
Department of Environmental Quality
Environmental Enhancement - Office of Environmental Impact Review
629 E. Main St., 6th Floor
Richmond, VA 23219
804/698-4330
804/698-4319 (Fax)
email: Valerie.Fulcher@deq.virginia.gov
www.deq.virginia.gov

DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
ENVIRONMENTAL IMPACT REVIEW COMMENTS

April 8, 2014

PROJECT NUMBER: 14-038F

PROJECT TITLE: Testing Hypervelocity Projectiles & Electro-magnetic Railgun at NASA Wallops Flight Facility

As Requested, TRO staff has reviewed the supplied information and has the following comments:

Petroleum Storage Tank Cleanups:
There has been one reported release at or adjacent to the proposed project. This is a closed case at Building V10, PC#1995-2405. If evidence of a petroleum release is discovered during implementation of this project, it must be reported to DEQ, as authorized by CODE # 62.1-44.34.8 through 9 and 9 VAC 25-580-10 et seq. Contact Mr. Gene Siudyla at (757) 518-2117 or Ms. Lynne Smith at (757) 518-2055. Petroleum-contaminated soils and ground water generated during implementation of this project must be properly characterized and disposed of properly.

Petroleum Storage Tank Compliance/Inspections:
The installation or use of any portable aboveground petroleum storage tank (>660 gallons - 9 VAC 25-91-10 et seq.) for more than 120 days for this project must be reported to the DEQ Tidewater Regional Office Petroleum Storage Tank Program attn: Tom Madigan - DEQ Tidewater Regional Office - 5636 Southern Blvd., Virginia Beach, VA 23462. Phone (757) 518-2115.

Virginia Water Protection Permit Program (VWPP):
No comments.

Air Permit Program :
No comment.

Water Permit Program :
Water Permits (VPDES/VPA/MS4) - Wallops Flight Facility is regulated under a VPDES individual permit that includes storm water pollution prevention plan (SWPPP) implementation, so any storm water associated with this activity would be addressed in the SWPPP. Land disturbance appears to be less than 1.0 acres during construction.

Groundwater - No comments

DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
ENVIRONMENTAL IMPACT REVIEW COMMENTS

April 8, 2014

PROJECT NUMBER: 14-038F

PROJECT TITLE: Testing Hypervelocity Projectiles & Electro-magnetic Railgun at NASA Wallops Flight Facility

Waste Permit Program :
All waste generated during the operation of the gun must be characterized in accordance with the Virginia Hazardous Waste Management Regulations prior to disposal at an appropriate facility.

The staff from the Tidewater Regional Office thanks you for the opportunity to provide comments.

Sincerely,

Cindy Keltner
Environmental Specialist II
5636 Southern Blvd.
VA Beach, VA 23462
(757) 518-2167
Cindy.Keltner@deq.virginia.gov

Wellman, Julia (DEQ)

From: Holma, Marc (DHR)
Sent: Thursday, March 13, 2014 9:05 AM
To: bethany.brown@navy.mil; Wellman, Julia (DEQ)
Subject: Testing of Hypervelocity Projectiles and an Electromagnetic Railgun at NASA Wallops Flight Facility (2014-3110) | e-Mail #00735

Dear Ms Wellman:

The Department of Historic Resources (DHR) is in receipt of the request by the Department of Environmental Quality (DEQ) for our review and comment on the above referenced project. Our records indicate that the Navy has created a draft application in our ePix system for this undertaking, but has not yet submitted it for our review pursuant to Section 106 of the National Historic Preservation Act, as amended, and its implementing regulation 36 CFR Part 800. Since a draft application has been created we anticipate that the Navy will shortly submit the project for our consideration. Once we have received the ePix application from the Navy and reviewed the undertaking the DHR will copy DEQ on our comments.

Mr. Brown, when you are ready for DHR to review the project please take the application out of "draft" so it may be submitted to our agency.

Sincerely,

Marc Holma

COMMONWEALTH of VIRGINIA

Randall P Burdette
Director

Department of Aviation
5702 Gulfstream Road
Richmond, Virginia 23250-2422

V/TDD • (804) 236-3624
FAX • (804) 236-3635

March 24, 2014

Mrs. Julia Wellman
Virginia Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, Virginia 23219

RE: NASA Wallops Island Hypervelocity Projectiles and Railgun, Federal Project # **14-038F**

Dear Ms. Wellman:

The Virginia Department of Aviation has reviewed the information package you provided regarding the above referenced project. Following our review, staff has no objection to the proposed project. However, the project sponsor should take the same clearing precautions in the hazard area for aircraft that inadvertently fly into the area as they do with any marine vessels.

If you have any questions regarding this matter, please contact me at (804) 236-3632 at extension 110.

Sincerely,

S. Scott Denny
Senior Aviation Planner
Virginia Department of Aviation

COMMONWEALTH of VIRGINIA

Marine Resources Commission
2600 Washington Avenue
Third Floor
Newport News, Virginia 23607

March 17, 2014

Ms. Julia H. Wellman
c/o Department. Of Environmental Quality
Office of the Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, Virginia 23219

Re: 14-038F
"Electromagnetic Railgun Wallops Island"

Dear Ms. Wellman:

You have inquired regarding the U. S. Navy's request to install a 5 inch powder gun and an electromagnetic railgun on NASA's Wallops Island in Accomack County. The firing range will extend up to 140 nautical miles into the Atlantic Ocean.

The Marine Resources Commission requires a permit for any activities that encroach upon or over, or take use of materials from the beds of the bays, ocean, rivers and streams, or creeks which are the property of the Commonwealth.

After discussing the proposed project with Tony Watkinson (VMRC's Chief of Habitat Management). We have determined that the proposal is not a fill and will not require a permit from our agency.

For your information, however, there may be gill nets in the area during certain times of the year. Also, there appears to be possible navigational issues leading into Chincoteague Inlet from the south.

If I may be of further assistance, please do not hesitate to contact me at (757) 414-0710.

Sincerely,

George H. Badger, III
Environmental Engineer

An Agency of the Natural Resources Secretariat
www.mrc.virginia.gov
Telephone (757) 247-2200 (757) 247-2292 V/TDD Information and Emergency Hotline 1-800-541-4646 V/TDD

Appendix C – Cultural Resources Coordination

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Navy ePIX Application Submitted to the Virginia State Historic Preservation Office

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Create New Application

This electronic form is to be used for the submission of new projects only. If you wish to submit addtional information in support of an existing project, please contact the reviewer assigned to that project.

Before using this form, please understand that the information being requested is important to our review. Incomplete information may lead to delays in the review of your project. Please read all questions carefully and respond as completely as possible. For security purposes, *your ePIX session will timeout after 20 minutes of inactivity* and any unsaved changes will be discarded. To ensure that no information is lost, we recommend saving your application after the completion of each section. If you have questions concerning the completion of this application, please contact DHR staff at ePIX@dhr.virginia.gov.

SECTION I. CONTACT INFORMATION

Ms. Bethany Brown
17483 Dahlgren Rd, Suite 107
Dahlgren, VA 22448
504-653-8885

Submitted By 540-653-7965

Please indicate what your role in this project is:

Applicant Role Employee of federal or state agency responsible for compliance

If Other, please specify

SECTION II. GENERAL PROJECT INFORMATION

Project Name Testing of Hypervelocity Projectiles and an Electromagnetic Railgun at NASA Wallops Flight Facility

Agency Project Number

Associated DHR File Number

Project Street Address

Independent Cities and/or Counties (multiple cities/counties are allowed):

City/County Name
Accomack

Town/Locality, if applicable Wallops Island

Agency Involvement

Please select one of the following options as they relate to the project you are submitting:

- My project involves a federal or state agency and requires review by DHR under the National Historic Preservation Act (Sections 106 or 110), Virginia Environmental Impact Reports Act or other provision of state or federal law.

- I am seeking Technical Assistance from DHR in the assessment of potential impacts of my project on historic resources (e.g. federal or state involvement anticipated, initial project scoping, local government proffer or ordinance).

It is important that you know the nature of the federal or state involvement in your project. Please note that there are a number of state-managed programs that are federally funded (e.g. Transportation Enhancement Grants, some recreational trail grant programs, and many DHCD programs). Understanding the involvement of the agency and the program is helpful for our review.

In some cases there are multiple agencies involved in a project. In these cases, there is generally a "lead" agency. In order to help clarify this, please list the agencies in the order of their involvement in the project. If, for example, there are two agencies providing funding, please provide the contact information for the primary source of federal funding first.

Please select the agency, relationship, contact and click the **Select** button:

Agency	Relationship
Department of Defense	Federally Funded
National Aeronautics and Space Administration	Federally Funded

SECTION III. PROJECT DESCRIPTION and CURRENT AND PAST LAND USE

We need to know as much as possible about the project that is being proposed as well as the current condition of the property. In the fields below, you will be required to provide descriptions that are no longer than 2000 characters. Additional and more detailed information can be uploaded and attached at the end of the application.

Overview and existing conditions

Please provide a general description of the project.

Project Description

The Navy is proposing to install a 5" powder gun and an electromagnetic (EM) railgun, test hypervelocity projectiles (HVPs), integrate HVPs with the EM railgun, and integrate the HVP/EM railgun weapon system with combat systems at the Naval Sea Systems Command's (NAVSEA's) Surface Combat Systems Center (SCSC), which is located on the National Aeronautics and Space Administration's (NASA's) Wallops Flight Facility (WFF) on Wallops Island, Virginia. The guns would fire into the Virginia Capes Range Complex in the Atlantic Ocean, which is used by the Navy for training and testing activities. Two Navy guns would be installed on WFF's Wallops Island: A MK 45 Mod 4 Proof of Concept 5" powder gun would be installed to test HVPs. Supporting facilities, including personnel command shelters and a radar facility would also be installed. Projectiles would be fired at speeds up to 2,908 miles per hour or 0.8 miles per second and ranges of approximately 35 nautical miles. Projectiles are anticipated to be guided and include telemetry. Typical gun range instrumentation is expected to be used. An EM railgun that is currently under development would be installed near the powder gun along with a pulsed power system. It would be used to fire HVPs for various system- level demonstrations at speeds up to 4,474 miles per hour or 1.2 miles per second and ranges to 100 nautical miles.

How many acres does the project encompass?

Number of Acres 1.99

Please describe the current condition and/or land use of the project area (e.g. paved parking lot, plowed field).

Current Condition

The proposed site is a thick slab of concrete underlain by deep pilings. The site includes a paved area measuring approximately 41,000 square feet bounded by an open area consisting of maintained grasses and scrub brush.

Please describe any previous modifications to the property, including ground disturbance.

Previous modifications to the property include the addition of pilings to support the addition of a 41,000 square foot concrete pad. These were installed to a depth of up to 90 feet (27 meters). Two storage buildings are also present on the site. In 2003 WFF completed a Cultural Resources Assessment. The assessment included background research and field reconnaissance involving assessing land forms for their archaeological potential. The study established a predictive model for understanding the archaeological potential at WFF, with areas of high, moderate, and low potential. Areas that contain moderate and high archaeological sensitivity were found to be located for the most part along the fringes of WFF. Prior ground disturbances limit the archaeological potential of many parts of WFF. Causes of these disturbances include past erosion by the wind and sea on Wallops Island, as well as construction, demolition, and landscaping for mission-driven improvements in all parts of the facility. The sites being considered for the proposed powder gun and EM rail gun are within areas mapped as having low potential for unknown archaeological resources and can be found in Appendix E of the Final Previous Modifications Site-Wide Environmental Assessment, Wallops Flight Facility.

Work involving buildings or structures

Does the project involve the rehabilitation, addition to, alteration, or demolition of any building structure over 50 years of age?

Buildings Over 50 YearsNo

If yes, please describe the work that is proposed in detail. Current photographs of affected building or structure, architectural or engineering drawings, project specifications and maps may be uploaded at the end of the application.

Details

Work involving ground disturbance

Is there any ground-disturbance that is part of this project?

Ground DisturbanceYes

If yes, describe the nature and horizontal extent of ground-disturbing activities, including construction, demolition, and other proposed disturbance. Plans, engineering drawings, and maps may be uploaded on the next page at the end of the application.

Electrical and communications cables would be installed in conduit underground and lighting on poles would be added around the perimeter of the site. Modifications would require the installation of buried utilities involving trenching approximately 600 linear feet (183 meters) at a minimum depth of 40 inches (102 centimeters) and an estimated 500 linear feet (152 meters) of directional boring. The installation of utilities would occur in both paved and unpaved areas of the site. The trenching would disturb about 889 cubic yards (680 cubic meters) of earth, the majority of which would be used to backfill the trenches once the utilities are installed. An 18-inch- (46-centimeter-) thick base course of aggregate stone would be laid in an approximately 36,000-square-foot (3,345-square-meter) area north of and adjacent to Pad 5 to accommodate the development of the proposed facility. A 5" Navy powder gun would be brought to the site and installed on the gravel. Two 12-foot wide by 24-foot long by 6-inch (3.6-meters wide by 7.3-meters long by 15-centimeter) thick steel plates with a one-foot (0.3 meter) overlap would make up the 47 -foot (14-meter) long foundation, weighing 67,000 pounds (30,348 kilograms). The spider mount and the gun would weigh an additional 50,000 pounds (22,679 kilograms). An additional 120,000 pounds (54,430 kilograms) of weight may be placed on the front of the steel plate for additional stabilization. The gun when fired at zero degrees elevation would apply 80,000 pounds (36,287 kilograms) of shear force on the plates. In addition to the powder gun, during Phase I the following facilities and equipment would be installed on the site: •Two hardened personnel/command shelters (approximately 10 x 20

Extent of Activities feet) •Storage shelters (approximately 8 x 20 feet)

What is the depth of the ground disturbance? If there are several components to the project, such as new building, utility trenches, and parking facilities, provide the approximate depth of each component.

Construction of the powder gun and EM railgun facility would require the installation of multiple pilings to support control and equipment structures and elevate them to a height of 11 feet (3.4 meters) above ground level to prevent flooding of the structures during high-water events. Because the proposed facility is still in the early stages of design, the exact number of pilings is not yet known, but preliminary construction drawings indicate that the pilings would be embedded to a minimum depth of 15 feet (5 meters). In addition, electrical and communications modifications to the area would require installation

Depth of buried utilities at a minimum depth of 40 inches.

How large is the area where ground-disturbing activities will take place? (in acres)

Area Size 1.99

SECTION IV. AREA OF POTENTIAL EFFECT (APE)

The Area of Potential Effects (APE) is defined as the geographic area or areas within which a project may directly or indirectly cause changes in the character or use of historic properties, if they exist. It is not necessary for an historic property to be present in order to define an APE.

An example of a direct effect is the demolition of an historic building while an indirect effect would be the alteration of an historic setting resulting from the construction of a communications tower or the introduction of noise as the result of the construction of factory. An area such as the footprint of a proposed building is obviously within the APE, but you must also consider visual effects on the property and the limits of all ground-disturbing activity. So, any project may have two APEs - one for direct effects and one for indirect effects.

Please see our guidance on Defining Your APE for more detailed information on defining direct and indirect APEs. If you are using DHR's Data Sharing System, you should indicate the APE on the DSS map. For instructions on how to do this, consult the DSS general use guidelines.

Please provide a brief summary of and justification for the APE and upload your APE map at the end of the application. The written boundary description must match the submitted APE map.

Based on the character of the potential direct and indirect effects of the Proposed Action on historic properties, two areas of potential effects were defined: a Landside APE and a Waterside APE. Installation of the 5" powder gun and the EM railgun at the Pad 5 site has no potential to directly affect the National Register-eligible Coast Guard Station and associated tower, which are located about 2 miles from the Pad 5 site. Operation of the guns is not anticipated to affect these resources either. The resources are located just inside the 115 dBP contour. While this dBP has medium potential to generate noise complaints, the Coast Guard Station and associated tower are uninhabited structures that are not open to the public. Occasionally elevated noise levels would not affect the characteristics that make these resources eligible for the National Register. The resources are also well outside the 134 dBP contour; the threshold at which potential indirect effects from air-borne vibrations become possible for especially fragile structures. Effects from ground-borne vibration are not anticipated either, as these become less important than air-borne vibrations beyond 500 feet for the type of detonation that would occur. Data from the Automated Wreck and Obstruction Information System indicate there are no shipwrecks within the Waterside APE. While it is possible that unknown or undocumented submerged resources are present, they would be few and widely scattered. While sabots, pusher plates, and armatures could hit a shipwreck of cultural interest, the likelihood of such a strike is very small. Additionally, the velocity of the expended materials would rapidly decrease upon contact with the water and as they travel through the water column, making substantial damage unlikely, even in the case of a direct strike. Thus, the proposed action would result in no effect to resources APE under Section 106 and no impact on cultural resources under NEPA.

SECTION V. CONSULTING PARTIES AND PUBLIC INVOLVEMENT

The views of the public, Indian tribes and other consulting parties (e.g. local governments, local historical societies, affected property owners, etc.) that may have an interest in historic properties

that may be affected by the project are essential to informed decision-making. In some cases, the public involvement necessary for other environmental reviews such as that under the National Environmental Policy Act (NEPA) may be sufficient for the Section 106 process, but the manner in which the public is involved must reflect the nature and complexity of the proposed project and its effects on historic resources.

What consulting parties have you identified that have an interest in this project? Please describe your previous and future efforts to involve consulting parties.

Consulting Parties

Per Stipulation III of the Draft Programmatic Agreement for the Management of Facilities, Infrastructure, and Sites at WFF (Wallops Flight Facility) III. ACTIVITIES NOT REQUIRING REVIEW UNDER THIS AGREEMENT A. The activities identified in Appendix F have limited potential to affect historic properties and do not require SHPO review under this Agreement. The NASA WFF HPO shall determine whether the proposed undertaking requires SHPO review under this Agreement. If the NASA WFF HPO approves the undertaking as not requiring SHPO review, the undertaking may be executed without further consultation with the SHPO, the ACHP, or other consulting parties as appropriate. It shall not be necessary to forward individual project documentation on any activity not requiring review under this Agreement to the SHPO, ACHP or any other consulting party. Since the Environmental Assessment has determined that there would be No Effect to historic properties or resources, no further consultation is required.

Please provide information on any previous or future efforts to involve the public, including public hearings, public notices, and other efforts.

A Notice of Availablility will be published in the Eastern Shore News and the Chincoteague Beacon papers. Once published, copies of the Environmental Assessment will be available at NASA WFF Visitor Center, Chincoteague Island Library, Eastern Shore Public Library and online at http://www.navsea.navy.mil/nswc/dahlgren/RANGE/Railgun_Environmental_Ass for 30 days to allow for public viewing and comments. Notice that the Environmental Assessment is available online (and hard copies upon request) is also sent to a mailing list of persons who have expressed interest in activities at WFF. These include various regional Indian tribes, numerous Federal, State, and Local government agencies, Virginia state and Accomack County elected officials, and independent organizations including: Eastern Shore of Virginia Tourism Commission Eastern Shore Defense Alliance The Nature Conservancy Virginia Eastern Shorekeeper Trails End Campground Eastern Shore of Virginia Chamber of Commerce Mid-Atlantic Regional Spaceport Chincoteague Bay Field Station The Nature Conservancy Assateague Coastal Trust Hampton Roads Military and Federal Facilities Alliance (HRMFFA) Delmarva Low-Impact Tourism Experiences Chincoteague Chamber of Commerce Citizens for a Better Eastern Shore Chincoteague Island Charterboat Public Involvement Association, and Virginia Waterman's Association

SECTION VI. PREVIOUSLY IDENTIFIED HISTORIC RESOURCES

In order for this application to be considered complete, you must determine if there are any known historic resources in the APE and provide this information to us. This step is generally referred to as a DHR Archives Search. More information on how to acquire this information can be found in our guidance document Obtaining an Archives Search.

Has any portion of the APE been previously surveyed for archaeological and/or architectural resources?

SurveysYes

If yes, describe and provide the names of any reports that you are aware of.

Final Cultural Resources Assessment of NASA Wallops Flight Facility, Accomack County, Virginia, 2003 Historic Resources Survey and Eligibility Report for Wallops Flight Facility, Accomack County, Virginia, 2004 Historic Resources Eligibility Survey, Survey Reports Wallops Flight Facility, Accomack County, Virginia, 2011

Are there any previously recorded archaeological sites or architectural resources, including historic districts or battlefields within the APE?

Recorded ResourcesYes

You must upload in Section VIII of this application the Archives Search Map showing previously recorded resources in the APE and the DSS reports for all previously recorded resources.

SECTION VII. ADDITIONAL CONTACTS TO THE APPLICATION

Last Name	First Name	Organization
Brown	Bethany	
Hartzell	Jeanne	Department of Defense
Bundick	Joshua	National Aeronautics and Space Administration

SECTION VIII. UPLOAD FILES FOR THE APPLICATION

Document Name	File Name	Note
Map of previously recorded resources	WFF HRES Final Report Aug 2011.pdf	
Map of previously recorded resources	WFF Surv and Elig Rep FINAL.pdf	
Cultural Resources Report	Cultural Resources Assessment.pdf	

Brown, Bethany D CIV NSWCDD, CX8

From: ePIX Portal <ePIX@dhr.virginia.gov>
Sent: Wednesday, May 28, 2014 7:56
To: Brown, Bethany D CIV NSWCDD, CX8
Subject: Testing of Hypervelocity Projectiles and an Electromagnetic Railgun at NASA Wallops Flight Facility (2014-3110) | e-Mail #01263

Dear Ms. Bethany Brown:

Thank you for submitting your application through the ePIX system and requesting the comments of the Department of Historic Resources on the referenced project. Your application is being processed and our 30-day review period will start on the next business day after submission. You will be notified if your application is insufficient or if additional materials are required for our review.

You may view the submitted application and track our review of this project through your ePIX account under "My Projects" (http://solutions.virginia.gov/epix/secure/dashboard.aspx <http://solutions.virginia.gov/epix/secure/dashboard.aspx>). When our review is complete, comments will be emailed to you and attached to the application in your ePIX account. No project activities that have the potential to impact historic properties should take place until the lead agency has provided a notice to proceed.

If you wish or are asked to submit additional materials in support of your application, documents must be submitted electronically to the appropriate reviewer. Submissions with a total size of less than 10mb may be submitted via email. Submissions larger than 10mb must be made through VITAShare (https://vitashare.vita.virginia.gov <https://vitashare.vita.virginia.gov/>).

Please reference the assigned DHR File Number on all future correspondence.

If you have any questions concerning the review process or if we may provide any further assistance, please do not hesitate to contact me. We look forward to working with you on this project.

Sincerely,

Marc Holma
Office of Review and Compliance
Division of Resource Services and Review

COMMONWEALTH of VIRGINIA

Department of Historic Resources

Molly Joseph Ward
Secretary of Natural Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan
Director
Tel: (804) 367-2323
Fax: (804) 367-2391
www.dhr.virginia.gov

MEMORANDUM

DATE: 12 June 2014 **DHR File #** 2014-3110

TO: Ms Bethany Brown
Navy

FROM: Marc E. Holma, Architectural Historian (804) 482-6090
Office of Review and Compliance

PROJECT: Testing of Hypervelocity Projectiles and an Electromagnetic Railgun at NASA Wallops Flight Facility, Accomack County

---

___ This project will have an effect on historic resources. Based on the information provided, the effect will not be adverse.

___ This project will have an adverse effect on historic properties. Further consultation with DHR is needed under Section 106 of the NHPA.

_X_ Additional information is needed before we will be able to determine the effect of the project on historic resources. **Please see attached sheet.**

___ No further identification efforts are warranted. No historic properties will be affected by the project. Should unidentified historic properties be discovered during implementation of the project, please notify DHR.

___ We have previously reviewed this project. Attached is a copy of our correspondence.

___ Other (Please see comments below)

COMMENTS:

Administrative Services
10 Courthouse Ave.
Petersburg, VA 23803
Tel: (804) 862-6408
Fax: (804) 862-6196

Capital Region Office
2801 Kensington Avenue
Richmond, VA 23221
Tel: (804) 367-2323
Fax: (804) 367-2391

Tidewater Region Office
14415 Old Courthouse Way
2nd Floor
Newport News, VA 23608
Tel: (757) 886-2818
Fax: (757) 886-2808

Western Region Office
962 Kime Lane
Salem, VA 24153
Tel: (540) 387-5443
Fax: (540) 387-5446

Northern Region Office
5357 Main Street
PO Box 519
Stephens City, VA 2265
Tel: (540) 868-7029
Fax: (540) 868-7033

The project location is identified in the project submission as Wallops Island, however, there is no map provided to show where on the island the proposed powder gun and EM rail gun are to be located. Please provide a map showing the project location. According to the application, "The sites being considered for the proposed powder gun and EM rail gun are within areas mapped as having low potential for unknown archaeological resources and can be found in Appendix E of the Final Site-Wide Environmental Assessment, Wallops Flight Facility." Please provide a copy of the map in the Final Site-Wide Environmental Assessment showing archaeological potential, or Figures 20, 21, and 22 of the Final Cultural Resources Assessment of Wallops Flight Facility, which are not included with the document attached to the ePix application.

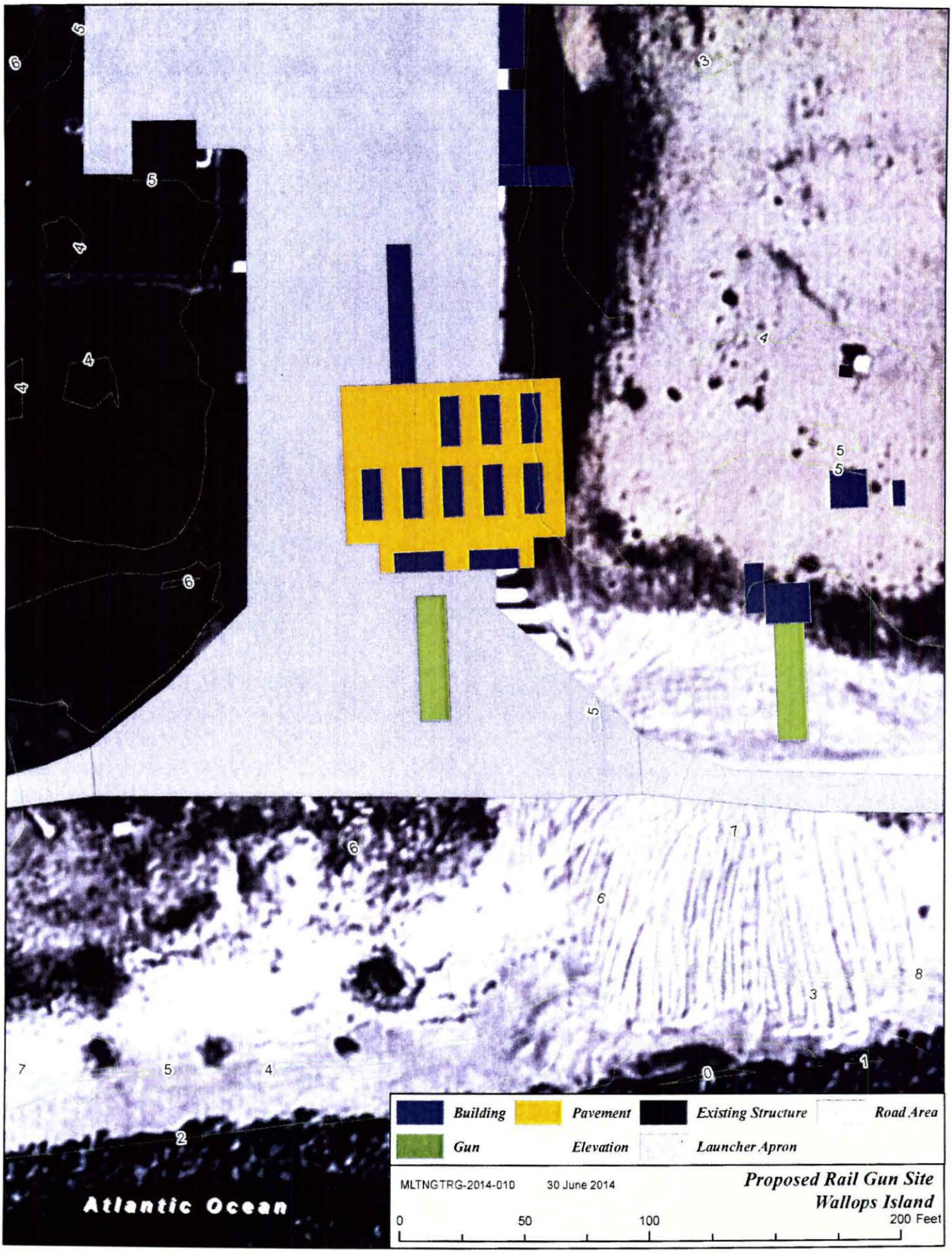
Brown, Bethany D CIV NSWCDD, CX8

From:	Brown, Bethany D CIV NSWCDD, CX8
Sent:	Tuesday, July 01, 2014 14:27
To:	'Holma, Marc (DHR)'
Subject:	RE: Testing of Hypervelocity Projectiles and an Electromagnetic Railgun at NASA Wallops Flight Facility (2014-3110) | e-Mail #00797
Attachments:	WFF Pad 5 topographic map 1.pdf; WFF Pad 5 topographic map 2.pdf
Signed By:	bethany.brown@navy.mil

Mr. Holma,

Here are two topographic maps of the area. One is a close up of the area and a second is a pulled-out version so that you can see where the pad is in reference to the rest of the island. Please let me know if this will suffice for the information you are looking for.

V/r,
Bethany Brown



COMMONWEALTH of VIRGINIA

Department of Historic Resources

Molly Joseph Ward
Secretary of Natural Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan
Director
Tel: (804) 367-2323
Fax: (804) 367-2391
www.dhr.virginia.gov

MEMORANDUM

DATE: 11 July 2014 **DHR File #** 2014-3110

TO: Ms Bethany Brown
Navy

FROM: Marc E. Holma, Architectural Historian (804) 482-6090
Office of Review and Compliance

PROJECT: Testing of Hypervelocity Projectiles and an Electromagnetic Railgun at NASA Wallops Flight Facility, Accomack County

---

___ This project will have an effect on historic resources. Based on the information provided, the effect will not be adverse.

___ This project will have an adverse effect on historic properties. Further consultation with DHR is needed under Section 106 of the NHPA.

___ Additional information is needed before we will be able to determine the effect of the project on historic resources. **Please see attached sheet.**

_X_ No further identification efforts are warranted. No historic properties will be affected by the project. Should unidentified historic properties be discovered during implementation of the project, please notify DHR.

___ We have previously reviewed this project. Attached is a copy of our correspondence.

___ Other (Please see comments below)

COMMENTS:

Administrative Services
10 Courthouse Ave.
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Northern Region Office
5357 Main Street
PO Box 519
Stephens City, VA 22655
Tel: (540) 868-7029
Fax: (540) 868-7033

Appendix D- Coordination with the Commonwealth of Virginia

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Coastal Zone Management Act Consistency Determination

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DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND
1333 ISAAC HULL AVENUE SE STOP 5013
WASHINGTON NAVY YARD, DC 20376-5013

IN REPLY REFER TO
5090
Ser 405/672
28 Feb 2014

MEMORANDUM

From: Program Manager, Naval Sea Systems Command (SEA 05T)
TO: Office of Environmental Impact Review, Virginia Department of Environmental Quality, 629 East Main Street, Sixth Floor, Richmond, Virginia 23219 (Attn: Ms. Ellie Irons)

Subj: COASTAL ZONE MANAGEMENT ACT (CZMA) SECTION 307(C)(1) AND15 CFR PART 930, SUBPART C

1. The enclosed document provides a Consistency Determination prepared pursuant to the Coastal Zone Management Act (CZMA) section 307(c)(1) and 15 CFR Part 930, subpart C concerning a proposed action to install at National Aeronautics and Space Administration's (NASA) Wallops Flight Facility (WFF) a Navy 5" powder gun and an electromagnetic (EM) railgun; test hypervelocity projectiles (HVPs); integrate HVPs with the EM railgun; and integrate the HVP/EM railgun weapon system with combat systems equipment currently in use on United States Navy warships. The proposed action would require firing from WFF's Wallops Island at offshore targets in the Virginia Capes Range Complex. The information in this Consistency Determination, which was prepared in cooperation with NASA, is provided pursuant to 15 CFR §930.39. Additionally, the information contained in this Consistency Determination reflects information in the soon-to-be released Environmental Assessment/Overseas Environmental Assessment covering the proposed action.

2, The Navy has determined that the above described activity affects the land or water uses or natural resources of Virginia as described in the enclosed document. In cooperation with NASA, the Navy finds that the above described activity is consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Zone Management Program.

3. Pursuant to 15 CFR Section 930.41, the Virginia Coastal Zone Management Program has 60 days from the receipt of this letter in which to concur with or object to this Consistency Determination, or to request an extension under 15 CFR section 930.41(b). Virginia's concurrence will be

presumed if its response is not received by the Navy on the 60th day from receipt of this determination. The State's response should be sent to:

Naval Surface Warfare Center Dahlgren
Attn: Jeanne L. Hartzell, Ph.D.
Environmental Program Manager
17483 Dahlgren Road, Suite 104
Bldg 189, Rm 114
Dahlgren, Virginia 22448-5119

Office: 540-653-0933
Fax: 540-653-7965
email: jeanne.hartzell1@navy.mil.

MICHAEL ZIV
CAPT USN

FEDERAL CONSISTENCY DETERMINATION
TESTING HYPERVELOCITY PROJECTILES AND AN ELECTROMAGNETIC RAILGUN AT NATIONAL AERONAUTICS AND SPACE ADMINISTRATION WALLOPS FLIGHT FACILITY WALLOPS ISLAND, VIRGINIA

Pursuant to Section 307 of the Coastal Zone Management Act of 1972, as amended, and 15 C.F.R. Subpart C, a Federal Consistency Determination has been prepared for the U.S. Navy's (Navy's) Proposed Action to install a 5" powder gun and an electromagnetic (EM) railgun, test hypervelocity projectiles (HVPs), integrate HVPs with the EM railgun, and integrate the HVP/EM railgun weapon system with combat systems equipment currently in use on U.S. Navy warships. The Proposed Action would take place on the National Aeronautics and Space Administration's (NASA's) Wallops Flight Facility (WFF), in Accomack County, Virginia. The Navy is required to determine the consistency of the Proposed Action and potential effects on Virginia's coastal resources or coastal uses with the Virginia Coastal Zone Management Program (VCP).

This consistency determination represents an analysis of the Proposed Action in light of established VCP Enforceable Policies and Programs. Submission of this consistency determination reflects the commitment of the Navy to comply to the maximum extent practicable with those Enforceable Policies and Programs. The Proposed Action would be operated and implemented in a manner consistent with the VCP. The Navy has determined that the Proposed Action's effects would have less than significant effects on land and water uses and natural resources of the Commonwealth of Virginia's coastal zone and is consistent to the maximum extent practicable with the enforceable policies of the VCP.

1. PROPOSED ACTION

The Proposed Action is to: install a Navy 5" powder gun and an EM railgun; test HVPs; integrate HVPs with the EM railgun; and integrate the HVP/EM railgun weapon system with combat systems equipment currently in use on United States Navy warships. The proposed site for the guns is co-located with the NAVSEA Surface Combat Systems Center (SCSC) on the National Aeronautical and Space Administration's (NASA's) Wallops Flight Facility (WFF) on Wallops Island, Virginia (Figure 1). The guns would fire projectiles at targets from 5 nautical miles to 100 nautical miles into the Virginia Capes Range Complex in the Atlantic Ocean, which is used by the Navy for training and testing activities (Figure 2). The two Navy guns to be installed on WFF's Wallops Island are:

- An MK 45 Mod 4 Proof of Concept 5" powder gun. Supporting facilities, including personnel command shelters and radar facilities would also be installed. HVP projectiles would be fired from the powder gun at speeds up to 2,908 miles per hour or 0.8 miles per second and at ranges of approximately 5 to 35 nautical miles. Projectiles are anticipated to be guided and include telemetry. Typical gun range instrumentation is expected to be used.

Figure 1

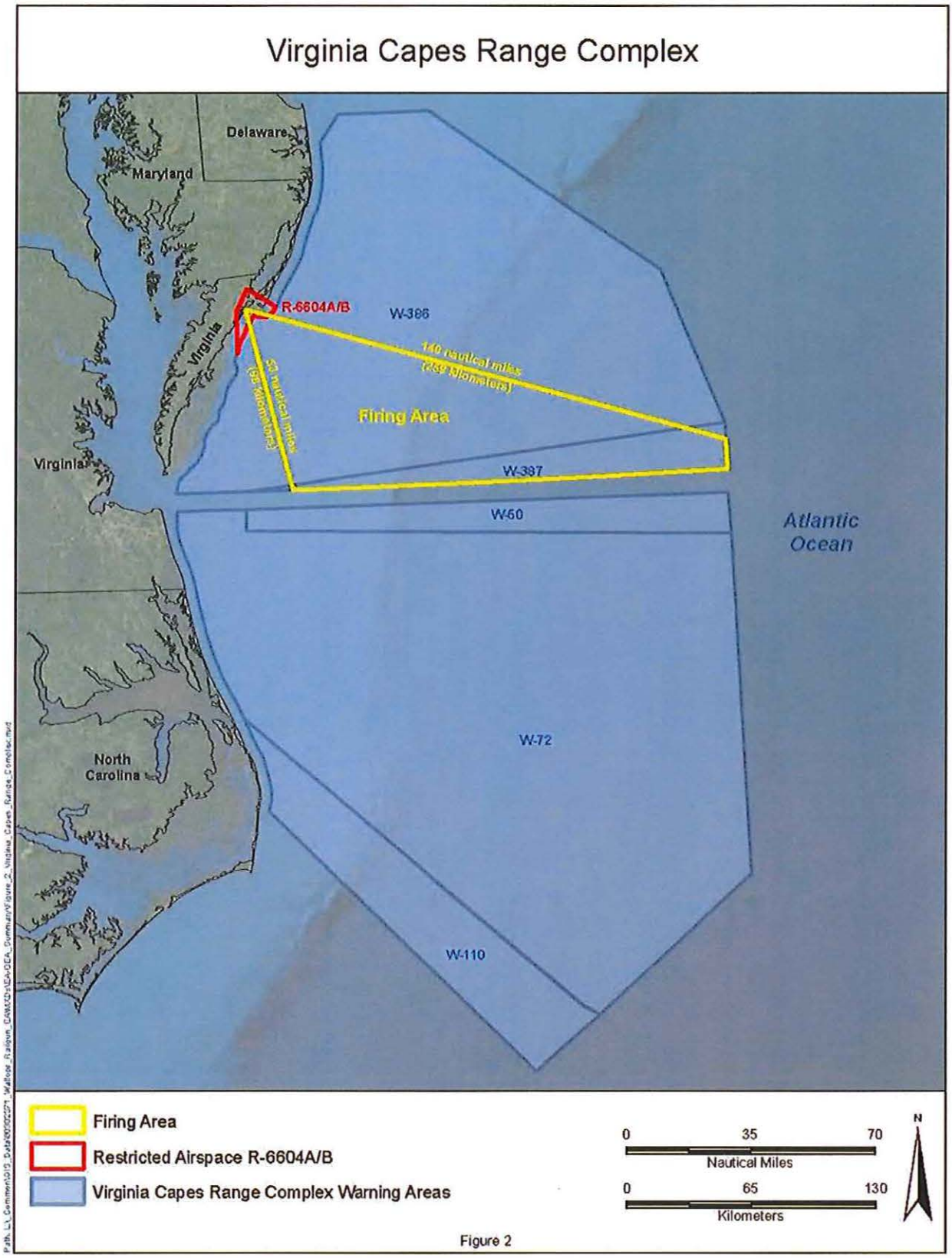

Figure 2

- An EM railgun that is currently under development. It would be installed near the powder gun, along with a pulsed power system used to fire the gun. HVPs would be fired from the EM railgun for various system-level demonstrations at speeds up to 4,474 miles per hour or 1.2 miles per second and at ranges from 5 to 100 nautical miles. Typical gun range instrumentation is expected to be used.

Three types of projectiles would be tested:

- Inert variant, which would contain no explosives and would be used to test guidance and control.
- High-explosive variant, which would contain ≤2 pounds of explosives and would be used against water surface targets. They are intended to burst and fragment just prior to striking the target. Underwater explosions are not planned and would only occur in abnormal or test failure conditions.
- Kinetic energy dispensing variant, which would contain ≤0.2 pound of explosives and would be used against air targets. This variant would burst the casing of the projectile and dispense tungsten pellets at incoming air targets.

Table 1 shows the proposed average annual number of projectiles to be used over the five fiscal years covered by the Proposed Action. Projectiles would be fired on approximately 20 days in 2015 and 2016, 30 days in 2017 and 2018, and 50 days in 2019. A typical day of testing would be about 8 hours long but could be shorter or longer. Testing typically would take place in daylight hours but firing may occasionally take place at night based on mission requirements and WFF's testing schedule for other programs.

Table 1 Average Annual Number of Projectiles by Fiscal Year

Projectile Types	2015	2016	2017	2018	2019
Inert	100	100	100	100	200
Kinetic Energy	0	4	40	40	40
High Explosive	0	0	10	10	10
Total Number	100	104	150	150	250

Figure 3 is a diagram of an inert HVP to be used in the 5" gun. The dark gray shape is the projectile itself, which has two fixed fins and two maneuverable fins to direct its flight; the lighter gray shapes are four aluminum sabots that surround the projectile and hold it in place while it is in the gun. When the projectile is fired, the sabots fall off generally within 1 nautical mile from the gun in the direction of the target. Each sabot petal is 22 inches by 3.5 inches and weighs approximately 3.5 pounds. While currently made entirely of aluminum, in the future the sabot would likely transition to a lighter carbon-composite material. Like the aluminum, the carbon-composite sabot petals would sink. Figure 4 shows the sabot petals flying away during launch, with one sabot petal separated from the projectile. The titanium pusher plate holds pressure to propel the projectile out of the gun and then falls off a minimum of 600 feet and a

maximum distance of 3 nautical miles from the gun in the direction of fire. The pusher plate is a disc, 5 inches x 1.5 inches in size and weighs 2.2 pounds.

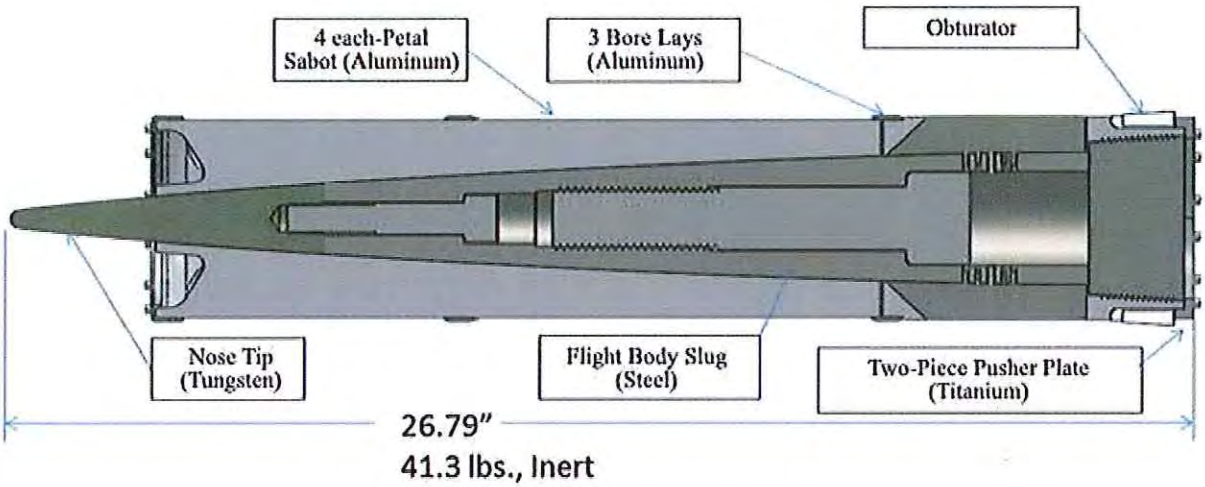

Figure 3: Inert 5" gun HVP. The dark gray projectile, which has fins, is surrounded by aluminum sabots that hold it in place in the gun. The pusher plate traps pressure during the launch.

Figure 4: Above, sabot petals flying off the projectile after the projectile is launched in a laboratory. To the right is a single sabot petal.

The projectiles used in the railgun are similar to the 5" projectile pictured in Figure 3. However, because railgun projectiles are launched using electrical energy, they have an armature that conducts the electrical pulse to propel the projectile down the rail and out of the gun. Armatures, weighing approximately 5.5 to 6.6 pounds and made of aluminum, come off the projectile after firing, falling a minimum of 600 feet to a maximum of 3 nautical miles from the gun in the direction of fire.

Figure 5 illustrates the proposed nearshore firing area, which is within 3 nautical miles of the shoreline. Projectiles would be fired on bearings within this area, and sabot petals, pusher plates, and armatures would fall into the areas indicated on the map. The wing-like shape of the sabot petals can cause them to drift in the air outside the firing area before settling into the water, as indicated on the figure.

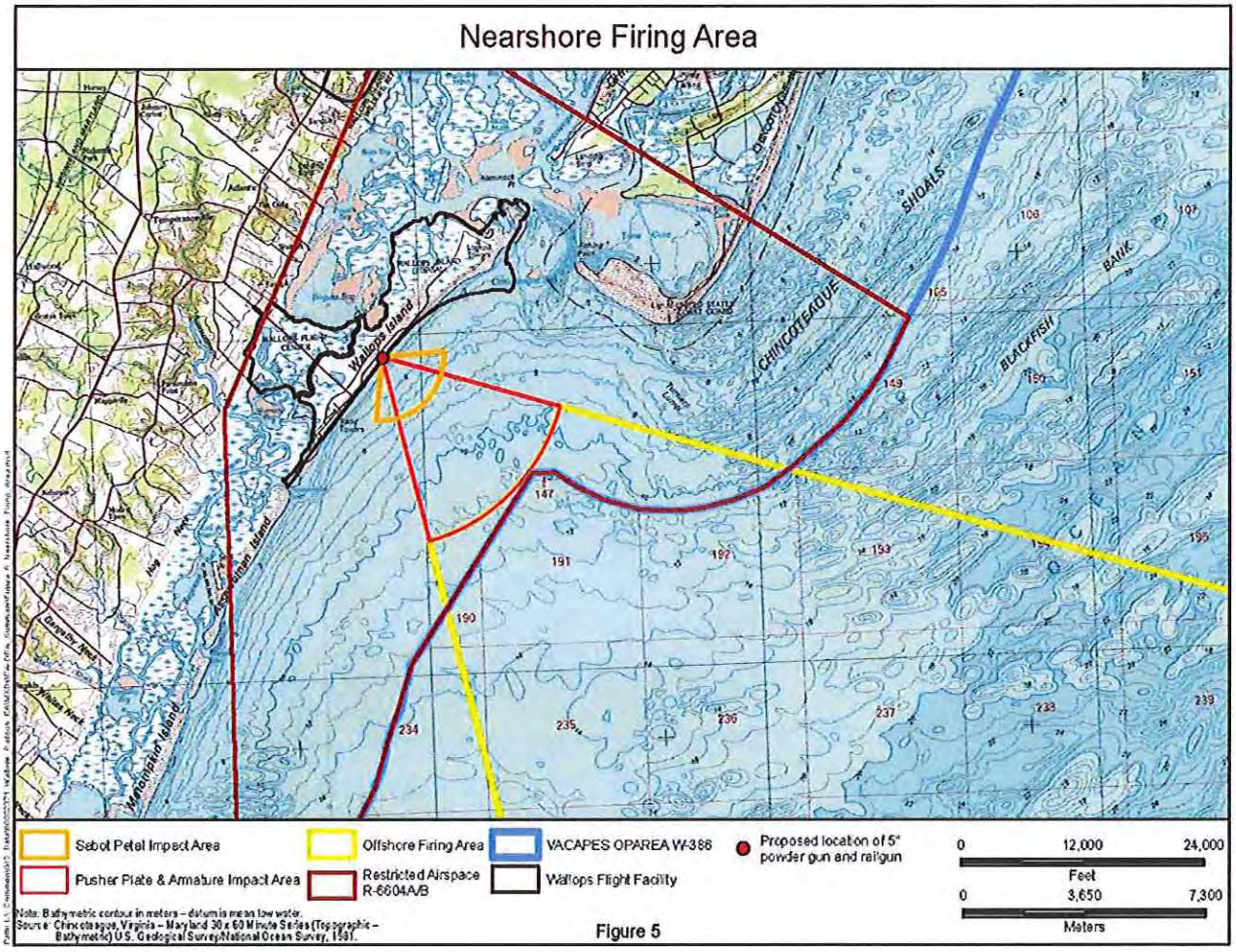

Figure 5

Alternative Sites on Wallops Island

The Navy has identified three site alternatives on WFF's Wallops Island near the Navy's AEGIS SPY-1 radar facility on Wallops Island. Sites near the AEGIS SPY-1 radar are required to allow immediate acquisition (tracking) of the projectile, which is necessary to accomplish HVP testing goals. Figure 6 is an aerial view of the three alternative sites and the AEGIS SPY-1 radar facility. Figure 7 shows the AEGIS SPY-1 radiofrequency pattern used for tracking projectiles in relation to the three alternative sites at WFF – Pad 4, Pad 5, and the Elevated Road. Pad 5 is the Preferred Alternative.

Figure 6: Proposed alternative sites for the 5" powder gun and railgun and supporting facilities at Pad 4, Pad 5, and the Elevated Road on WFF's Wallops Island. Beach replenishment projects have added approximately 110 feet of beach in front of the seawall shown in this photo. Sand was also placed on the rock seawall, transforming it into a seawall/dune.

Figure 7

2. ENFORCEABLE POLICIES

The Commonwealth of Virginia has developed and implemented the federally-approved VCP encompassing nine enforceable policies for the coastal area pertaining to:

- Fisheries management
- Subaqueous lands management
- Wetlands management
- Dunes management
- Non-point source pollution control
- Point source pollution control
- Shoreline sanitation
- Air pollution control
- Coastal lands management

A summary analysis of how the Proposed Action would affect each of the enforceable policies is presented below. This analysis is based on the more detailed analyses contained in the environmental assessment/overseas environmental assessment, which is expected to be issued for public review in April 2014.

The Navy is evaluating the impacts of the Proposed Action on threatened and endangered species in two biological assessments that will be submitted to the U.S. Fish and Wildlife Service (for species occurring on Wallops Island) and the National Marine Fisheries Service (for species occurring within three miles of Wallops Island in the Atlantic Ocean). The Navy also is preparing a Section 106 form to be submitted to the Virginia Department of Historic Resources evaluating impacts of the Proposed Action on two historic sites on Wallops Island.

Fisheries Management

The program stresses the conservation and enhancement of finfish and shellfish resources and the promotion of commercial and recreational fisheries to maximize food production and recreational opportunities. This program is administered by the Marine Resources Commission (MRC) (Virginia Code §28.2-200 through §28.2-713) and *the Department of Game and Inland Fisheries (DGIF) (Virginia Code §29.1-100 through §29.1-570).*

The State Tributyltin (TBT) Regulatory Program has been added to the Fisheries Management program. The General Assembly amended the Virginia Pesticide Use and Application Act as it related to the possession, sale, or use of marine antifoulant paints containing TBT. The use of TBT in boat paint constitutes a serious threat to important marine animal species. The TBT program monitors boating activities and boat painting activities to ensure compliance with TBT regulations promulgated pursuant to the amendment. The MRC, DGIF, and Virginia Department of Agriculture and Consumer Services share enforcement responsibilities (Virginia Code §3.2-3904 and §3.2-3935 to §3.2-3937).

Consistent to the Maximum Extent Practicable? Yes.

Analysis – There is a small possibility that fish might be struck by falling debris (military expended materials, including sabot petals, armatures, and pusher plates that separate from the projectiles after they're fired), but there would be no impacts on populations or species.

Falling military expended materials hitting the water have an extremely low probability of striking an individual fish or causing a short-term and local displacement of fish in the water column. The impact of military expended material strikes would be inconsequential due to: (1) the limited number of fish found directly at the surface where military expended material strikes could occur, (2) the rare chance that a fish might be directly struck at the surface by military expended materials, (3) the ability of most fish to detect and avoid an object falling through the water below the surface, and (4) the low probability of strike based on impact footprint area. The potential impacts of military expended material materials would be short-term (seconds), localized disturbances of the water surface and are not expected to yield any behavioral changes or lasting effects on fish.

The WFF Range Safety Officer would develop a flight safety plan for each HVP test. The plans would establish a hazard area and, as needed, a caution area for each projectile. Each hazard area would encompass a corridor or a cone extending from the gun along the firing azimuth and a buffer of specified radius around the target area. The target areas vary between 5 to 100 nautical miles from Wallops Island (Figure 2). If established for a projectile, the caution area would extend from the gun along the firing azimuth to a distance beyond the hazard area. During a test,

no vessels would be allowed within the hazard area and only a specified number of vessels would be allowed in the caution area. Depending on the configurations of the hazard area and caution area specified in the operative flight safety plan, vessel movement through Chincoteague Inlet may be temporarily stopped or restricted.

To support HVP testing, WFF typically would restrict vessel movements near Wallops Island for 30 to 60 minutes per projectile firing. Based on a median value of 45 minutes per firing, vessel movements near Wallops Island would be restricted approximately 80 hours annually in the first and second years, approximately 110 hours annually in the third and fourth years, and approximately 190 hours annually from the fifth year on. WFF may allow passage through the hazard area during gaps between firings, providing the gaps are of sufficient duration to allow safe transit across the area.

Several factors would contribute to minimizing the effects of these vessel restrictions on commercial and recreational fishing. First, NASA works with the public and adjusts the azimuth of the firing to avoid major boating corridors and fishing areas. Second, information on the time and duration of each test would be made available in advance through flyers and notices to mariners over maritime frequency radio and on the WFF website. Boaters and fishermen in the area are familiar with WFF's range restrictions and are aware that they might need to shift the timing and location of their activities. Finally, gun firing would be intermittent and would include long periods during which vessels may be allowed to pass under controlled conditions, through the hazard area, consistent with the Navy's and NASA's policy to make all reasonable efforts to minimize public inconvenience.

Neither the projectiles that would be fired nor the vessels used to patrol the edges of the hazard area during testing are painted with TBT.

Subaqueous Lands Management

The management program for subaqueous lands establishes conditions for granting or denying permits to use state-owned bottomlands based on considerations of potential effects on marine and fisheries resources, wetlands, adjacent or nearby properties, anticipated public and private benefits, and water quality standards established by the DEQ Water Division. The program is administered by the MRC (Virginia Code §28.2-1200 through §28.2-1213).

Consistent to the Maximum Extent Practicable? Yes.

Analysis – Based on discussions with VMRC, the Proposed Action would not require a permit from VMRC to use state-owned, subaqueous bottomlands because no filling would take place.

Military expended materials – aluminum sabots and armatures and titanium pusher plates (and eventually carbon-fiber sabots) – would fall from projectiles into the water up to three nautical miles from the guns and land on the bottom. The direction of fire would move within an arc so that expended materiel would be broadly scattered and would not pile up.

Wetlands Management

The purpose of the wetlands management program is to preserve tidal wetlands, prevent their despoliation, and accommodate economic development in a manner consistent with wetlands preservation.

(i) The tidal wetlands program is administered by the MRC (Virginia Code §28.2-1301 through

§28.2-1320).

(ii) The Virginia Water Protection Permit program administered by the DEQ includes protection of wetlands --both tidal and non-tidal. This program is authorized by Virginia Code §62.1-44.15.20 and §62.1-44.15-21 and the Water Quality Certification requirements of §401 of the Clean Water Act of 1972.

Consistent to the Maximum Extent Practicable? Yes.

Analysis – No tidal or non-tidal wetlands are located within the footprints of the alternative sites for the Proposed Action. The sites were selected to avoid impacts to wetlands.

Dunes Management

Dune protection is carried out pursuant to the Coastal Primary Sand Dune Protection Act and is intended to prevent destruction or alteration of primary dunes. This program is administered by the Marine Resources Commission (Virginia Code §28.2-1400 through §28.2-1420).

Consistent to the Maximum Extent Practicable? Yes.

Analysis – No alteration of or construction on a coastal primary sand dune would take place under the Proposed Action. The alternative sites have been developed and used for Navy and NASA activities for many years.

A rock seawall partially covered with sand functions as the primary dune along this part of Wallops Island; it separates the proposed testing area from the beach (see Figures 6 and 7). The seawall and beach were restored in recent years under NASA's ongoing Shoreline Restoration and Infrastructure Protection Program.

No debris from testing would fall on land; this conclusion is based on recent railgun program measurements of the minimum and maximum distances HVP sabots and pusher plates landed when fired from a 5"/62 powder gun.

Non-point Source Pollution Control

*Virginia's Erosion and Sediment Control Law requires soil-disturbing projects to be designed to reduce soil erosion and to decrease inputs of chemical nutrients and sediments to the Chesapeake Bay, its tributaries, and other rivers and waters of the Commonwealth. This program is administered by DEQ (Virginia Code §*62.1-44.15:51 et seq.*).*

Consistent to the Maximum Extent Practicable? Yes.

Analysis – To the maximum extent feasible, the two guns and supporting facilities (10x30-foot command shelter; two 8x20-foot equipment storage shelters; radar instrumental power van; mobile Weibel radar; and a pulsed-power system to power the railgun) would be erected on existing concrete pavement (old rocket launch pads or a road). Facilities not on existing pavement would be placed on gravel. Pilings would be installed to elevate the railgun, the pulsed-power system, and the command and storage structures above the 100-year flood level. The amount of new impervious surface that would result from construction of the Preferred Alternative on the 2.0-acre Pad 5 site would be approximately 3,400 square feet (0.078 acre). Use of the 1.8-acre Pad 4 Alternative site would result in about 1,180 square feet (0.028 acres) of new impervious surface. Use of the 1.8-acre Elevated Road Alternative would result in about 7,633 square feet (0.17 acres) of new impervious surface.

Because construction activities would disturb more than 10,000 square feet of land, the

construction contractor would prepare and implement an erosion and sediment control plan in accordance with the Virginia Erosion and Sediment Control Law and regulations.

When the design is finalized, it is likely than more than one acre of land would be disturbed for the construction of the proposed facility. If this is the case, the construction contractor would be required to obtain a General Permit for Discharges of Stormwater from Construction Activities in accordance with 9 VAC 25-880 and prepare a stormwater pollution prevention plan. Best management practices would be followed during the construction of the powder gun and EM railgun support facilities to minimize soil erosion and control non-point source pollution.

Point Source Pollution Control

The point source program is administered by the State Water Control Board pursuant to Virginia Code §62.1-44.15. Point source pollution control is accomplished through the implementation of the National Pollutant Discharge Elimination System (NPDES) permit program established pursuant to §402 of the federal Clean Water Act and administered in Virginia as the VPDES permit program. The Water Quality Certification requirements of §401 of the Clean Water Act of 1972 is administered under the Virginia Water Protection Permit program.

Consistent to the Maximum Extent Practicable? Yes.

Analysis – No new point source would be required for this project. In accordance with the NPDES and the VPDES permit program, NASA maintains a WFF-wide stormwater pollution prevention plan to ensure that its operations have minimal impact on stormwater quality.

Shoreline Sanitation

The purpose of this program is to regulate the installation of septic tanks, set standards concerning soil types suitable for septic tanks, and specify minimum distances that tanks must be placed away from streams, rivers, and other waters of the Commonwealth. This program is administered by the Department of Health (Virginia Code §32.1-164 through §32.1-165).

Consistent to the Maximum Extent Practicable? Yes.

Analysis – This enforceable policy not apply to this project because no septic tanks would be installed.

Air Pollution Control

The program implements the federal Clean Air Act to provide a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards. This program is administered by the State Air Pollution Control Board (Virginia Code §10.1-1300 through 10.1-1320).

Consistent to the Maximum Extent Practicable? Yes.

Analysis – The region of influence for the Proposed Action is the Northeastern Virginia Intrastate air quality control region (defined in 40 C.F.R. §81.144), which includes areas designated as in attainment/unclassifiable for all criteria pollutants.

The emissions generated from construction activities, including emissions from construction equipment and from fugitive dust, would not be significant. A soil and erosion control plan in accordance with the Virginia Soil and Erosion Control regulations (9 Virginia Code 25-840) would be developed during project planning and carried out during construction to minimize fugitive dust.

The testing of the 5"/62 powder gun would use small quantities of propellant – an MK99 formulation – to fire projectiles. The primary constituent is cyclotrimethylenetrinitramine, also known as RDX. The propellant would be almost completely expended – more than 99.99 percent – during firing and would not add measurably to current emissions. Air emissions from a 10-shot test of the powder gun using MK99 propellant are summarized in the table below. Most emissions would be compounds, such as CO, nitrogen, and water, that are naturally found in air.

The EM railgun does not require the use of a propellant. Firing of railgun projectiles generates small quantities of aluminum oxide (Al_2O_3) in the immediate vicinity of firing caused by the abrasion of aluminum components. The quantity and form of aluminum oxide that would be emitted is not considered toxic and would not require any additional safety measures.

These emissions would not violate federal Clean Air Act or Virginia air quality standards. No permits would be required.

Table 1: MK99 Emissions from Powder Gun Shots

Compound	Mole/Kilogram	Kilogram/Shot	Pound/Shot
Carbon monoxide (CO)	17.0	15.14	33.38
Nitrogen (N_2)	10.9	9.69	21.37
Water (H_2O)	7.1	4.07	8.97
Carbon dioxide (CO_2)	1.57	2.19	4.83
H_2 (Hydrogen)	9.23	0.59	1.30
Hydrogen cyanide (HCN)	0.039	0.03	0.07
Nitric oxide (NO)	0.0028	0.003	0.006
Methane (CH_4)	0.0042	0.002	0.005
Cyanide (CN)	0.000052	0.00004	0.00009
Nitrogen dioxide (NO_2)	0.00000017	<0.000001	<0.000001

Coastal Lands Management

Coastal Lands Management is a state-local cooperative program administered by DEQ's Water Division and 84 localities in Tidewater, Virginia established pursuant to the Chesapeake Bay Preservation Act (Virginia Code §§ 62.1-44.15:67 through 62.1-44.15:79) and Chesapeake Bay Preservation Area Designation and Management Regulations (Virginia Administrative Code 9 VAC 25-830-10 et seq.).

Consistent to the Maximum Extent Practicable? Yes.

Analysis – The Proposed Action would not include land development activities that would affect the Chesapeake Bay or its tributaries. Although Accomack County has adopted the Chesapeake Bay Preservation Act restrictions for its seaside riparian areas, NASA's Wallops Island is specifically excluded from this overlay area.

3. SUMMARY OF FINDINGS

The Navy has determined that the Proposed Action, which would be implemented in accordance with associated mitigation measures, would be consistent to the maximum extent practicable

with the federally-approved enforceable policies of the VCP, pursuant to the Coastal Zone Management Act of 1972, as amended, and in accordance with 15 C.F.R. Part 930, Subpart C.

COMMONWEALTH of VIRGINIA

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April 16, 2014

Ms. Jeanne L. Hartzell
Environmental Program Manager
Naval Surface Warfare Center Dahlgren
17483 Dahlgren Road, Suite 104
Bldg 189, Rm 114
Dahlgren, VA 22448-5119

RE: Federal Consistency Determination: Testing Hypervelocity Projectiles and Electromagnetic Railgun at NASA Wallops Flight Facility located in Accomack County (DEQ 14-038F)

Dear Ms. Hartzell:

The Commonwealth of Virginia has completed its review of the federal consistency determination (FCD) for the above-referenced project. The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of FCDs and responding on behalf of the Commonwealth. This letter is in response to the FCD dated February 28, 2014, (received March 13, 2014). The following agencies participated in this review:

Department of Environmental Quality
Department of Game and Inland Fisheries
Department of Conservation and Recreation
Department of Health
Department of Historic Resources
Marine Resources Commission

The Virginia Institute of Marine Science, Accomack-Northampton Planning District Commission and Accomack County also were invited to comment on the project.

PROJECT DESCRIPTION

The U.S. Department of the Navy (Navy) submitted a FCD for the installation and operation of a powder gun and electromagnetic railgun at the National Aeronautics and Space Administration (NASA) Wallops Flight Facility on Wallops Island in Accomack County. The Navy proposes to test hypervelocity projectiles (HVP), and integrate HVPs with the railgun and the railgun weapons system with combat systems equipment. The proposed action would require firing projectiles at targets from 5 to 100 nautical miles at offshore targets in the Virginia Capes Range Complex. The proposed site for the guns is the existing Surface Combat Systems Center on Wallops Island. The proposed project would require constructing a command shelter (10 by 30 feet in size), two storage shelters, and other equipment on existing concrete pavement. If facilities are not placed on existing concrete, they will be placed on gravel. Pilings would be installed to elevate the railgun, the pulsed-power system, and command and storage structures above the 100-year floodplain. The FCD states that the project is consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Zone Management Program (VCP).

FEDERAL CONSISTENCY UNDER THE COASTAL ZONE MANAGEMENT ACT

This FCD is submitted pursuant to the federal consistency regulation 15 Code of Federal Regulations Part 930 Subpart C Section 930.31. Pursuant to the Coastal Zone Management Act of 1972, as amended, federal activities located inside or outside of Virginia's designated coastal management area that can have reasonably foreseeable effects on coastal resources or coastal uses must, to the maximum extent practicable, be implemented in a manner consistent with the VCP. The VCP consists of a network of programs administered by several agencies. In order to be consistent with the VCP, the project activities must be consistent with the enforceable policies of the VCP and all the applicable permits and approvals listed under the enforceable policies of the VCP must be obtained prior to commencing the project. DEQ coordinates the review of FCDs with agencies administering the enforceable and advisory policies of the VCP.

PUBLIC PARTICIPATION

In accordance with 15 CFR §930.2, a public notice of this proposed action was published on the DEQ website from March 31, 2014 to April 8, 2014. No public comments were received in response to the notice.

FEDERAL CONSISTENCY CONCURRENCE

The FCD states that the project is consistent with the enforceable policies of the VCP. The reviewing agencies that are responsible for the administration of the enforceable

policies generally agree with the FCD. Based on the review of the FCD and the comments submitted by agencies administering the enforceable policies of the VCP, DEQ concurs that the proposed project is consistent with the VCP provided all applicable permits and approvals are obtained as described below. However, other state approvals which may apply to this project are not included in this FCD. Therefore, the responsible agent must also ensure that this project is constructed and operated in accordance with all applicable federal, state and local laws and regulations. The analysis which follows responds to the discussion of the enforceable policies of the VCP that apply to this project.

ANALYSIS OF ENFORCEABLE POLICIES

1. Fisheries Management. The FCD (page 9) states that there is a small possibility that fish may be struck by falling debris but there would be no impact on populations or species.

1(a) Agency Jurisdiction.

1(a)(i) Virginia Marine Resources Commission and Department of Game and Inland Fisheries. The fisheries management enforceable policy is administered by the Marine Resources Commission (VMRC) (§28.2-200 to §28.2-713) and the Department of Game and Inland Fisheries (DGIF) (§29.1-100 to §29.1-570).

1(a)(ii) Department of Health. The Virginia Department of Health's (VDH) Division of Shellfish Sanitation (DSS) is responsible for protecting the health of the consumers of molluscan shellfish and crustacea by ensuring that shellfish growing waters are properly classified for harvesting, and that molluscan shellfish and crustacea processing facilities meet sanitation standards. The mission of this Division is to minimize the risk of disease from molluscan shellfish and crustacea products at the wholesale level by classifying shellfish waters for safe commercial and recreational harvest; by implementing a statewide regulatory inspection program for commercial processors and shippers; and by providing technical guidance and assistance to the shellfish and crustacea industries regarding technical and public health issues.

1(b) Agency Comments. DGIF did not respond to DEQ's request for comment. VMRC and VDH did not indicate that fisheries would be affected.

2. Subaqueous Lands. The FCD (page 10) states that expended materials would fall from the projectiles into the water up to 3 nautical miles from the guns and land on the ocean bottom. The material would be broadly scattered.

2(a) Agency Jurisdiction. In accordance with the Coastal Zone Management Act of 1972 (§1456(c)) and federal consistency regulations (15 CFR, Part 930, Subpart D, §930.30 *et seq.*), the applicant's actions must be consistent with the enforceable policies of the VCP, including the subaqueous lands management enforceable policy. The Virginia Marine Resources Commission (VMRC), pursuant to Section 28.2-1200 *et seq.* of the Code of Virginia, has jurisdiction over any encroachments in, on, or over any state-owned rivers, streams, or creeks in the Commonwealth.

The VMRC serves as the clearinghouse for the Joint Permit Application (JPA) used by the:

- Corps for issuing permits pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act;
- DEQ for issuance of a VWPP;
- VMRC for encroachments on or over state-owned subaqueous beds as well as tidal wetlands; and
- local wetlands board for impacts to wetlands.

The VMRC distributes the completed JPA to the appropriate agencies. Each agency conducts its review and respond.

2(b) Agency Finding. VMRC states that the proposal would not require a permit from VMRC.

2(c) Agency Comments. VMRC states that there may be gill nets in the area during certain times of the year and there may be possible navigational issues leading into Chincoteague Inlet.

2(d) Agency Recommendation. Notify the U.S. Coast Guard when activities may affect marine navigation.

3. Air Pollution Control. The FCD (page 12) indicates that air emissions from construction would not be significant.

3(a) Agency Jurisdiction. The DEQ Air Division, on behalf of the Air Pollution Control Board, is responsible for developing regulations that implement Virginia's Air Pollution Control Law. DEQ is charged with carrying out mandates of the state law and related regulations as well as Virginia's federal obligations under the Clean Air Act as amended in 1990. The objective is to protect and enhance public health and quality of life through control and mitigation of air pollution. The division ensures the safety and quality of air in Virginia by monitoring and analyzing air quality data, regulating sources of air pollution, and working with local, state and federal agencies to plan and implement

strategies to protect Virginia's air quality. The appropriate regional office is directly responsible for the issue of necessary permits to construct and operate all stationary sources in the region as well as to monitor emissions from these sources for compliance. As a part of this mandate, the environmental documents of new projects to be undertaken in the state are also reviewed. In the case of certain projects, additional evaluation and demonstration must be made under the general conformity provisions of state and federal law.

3(b) Ozone Attainment Area. According to the DEQ Air Division, the project site is located in an ozone attainment area.

3(c) Requirements.

3(c)(i) Fugitive Dust. During land-disturbing activities, fugitive dust must be kept to a minimum by using control methods outlined in 9VAC5-50-60 *et seq.* of the Regulations for the Control and Abatement of Air Pollution. These precautions include, but are not limited to, the following:

- Use, where possible, of water or suitable chemicals for dust control during the proposed demolition and construction operations and from material stockpiles;
- Installation and use of hoods, fans and fabric filters to enclose and vent the handling of dusty materials;
- Covering of open equipment for conveying materials; and
- Prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion.

3(c)(ii) Open Burning. If project activities include the burning of vegetative debris or use of special incineration devices in the disposal of land clearing debris during construction, this activity must meet the requirements under 9VAC5-130 *et seq.* of the regulations for open burning, and it may require a permit. The regulations provide for, but do not require, the local adoption of a model ordinance concerning open burning. Contact officials with Accomack County to determine what local requirements, if any, exist.

3(d) Conclusion. Provided the project complies with applicable requirements, it would be consistent with the air pollution control enforceable policy of the VCP.

4. Coastal Lands Management. The FCD (page 13) states that Wallops Island is excluded from Accomack County's Chesapeake Bay Preservation Area.

4(a) Agency Jurisdiction. Effective July 1, 2013, the DEQ Water Division (WD) Office of Stormwater Management (OSM) administers the coastal lands management

enforceable policy of the VCP, which is governed by the Chesapeake Bay Preservation Act and Chesapeake Bay Preservation Area Designation and Management Regulations (Regulations).

4(b) Agency Findings. The DEQ Water Division OSM states that the Wallops Island facility is located along the Atlantic Ocean shoreline. Accomack County has extended the Chesapeake Bay Preservation Areas (CBPAs) to include the Atlantic Ocean watershed. However, the county did not designate CBPAs for federally-owned lands. As the project is located outside of the local CBPA designation and outside of the Chesapeake Bay watershed, there are no requirements for compliance with the Chesapeake Bay Preservation Act for this project.

5. Non-point Source Pollution Control. The FCD (page 12) states that it is likely that more than 1 acre of land will be disturbed.

5(a) Agency Jurisdiction. Effective July 1, 2013, the DEQ Water Division OSM administers the non-point source pollution control enforceable policy, which is governed by the Virginia Erosion and Sediment Control Law and Regulations (VESCL&R) and the Virginia Stormwater Management Law and Regulations (VSWML&R).

5(b) Erosion and Sediment Control and Stormwater Management Project-Specific Plans. According to the DEQ Water Division, the Navy and its authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with VESCL&R and VSWML&R, including coverage under the general permit for stormwater discharge from construction activities, and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act-Section 313, federal consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbing activities that result in the total land disturbance of equal to or greater than 10,000 square feet would be regulated by VESCL&R.

Accordingly, the Navy must prepare and implement an ESC plan to ensure compliance with state law and regulations. The ESC plan is submitted to the DEQ regional office that serves the area where the project is located for review for compliance. The Navy is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy (Reference: VESCL 62.1-44.15 *et seq.*).

5(c) General Permit for Stormwater Discharges from Construction Activities (VAR10). DEQ is responsible for the issuance, denial, revocation, termination and enforcement of the Virginia Stormwater Management Program (VSMP) General Permit

for Stormwater Discharges from Construction Activities related to municipal separate storm sewer systems (MS4s) and construction activities for the control of stormwater discharges from MS4s and land disturbing activities under the Virginia Stormwater Management Program.

The operator or owner of construction activities involving land-disturbing activities equal to or greater than 1 acre is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project specific stormwater pollution prevention plan (SWPPP). The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit and the SWPPP must address water quality and quantity in accordance with the Virginia Stormwater Management Program (VSMP) Permit Regulations. General information and forms are available at *www.deq.virginia.gov/Programs/Water/Stormwater Management/VSMPPermits.aspx.*

5(d) Agency Finding. Wallops Flight Facility is regulated under a VPDES individual permit that includes SWPPP implementation, so any storm water associated with this activity would be addressed in the SWPPP.

5(e) Conclusion. For consistency with the nonpoint source pollution control enforceable policy of the VCP, the project must be consistent with the erosion and sediment control and the stormwater management laws and regulations.

ADDITIONAL ENVIRONMENTAL CONSIDERATIONS

In addition to the enforceable policies of the VCP, comments also were provided with respect to applicable requirements and recommendations of the following programs:

1. Solid and Hazardous Waste Management.

1(a) Agency Jurisdiction. Solid and hazardous wastes in Virginia are regulated by DEQ, the Virginia Waste Management Board and the U.S. Environmental Protection Agency. They administer programs created by the federal Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response Compensation and Liability Act (CERCLA), commonly called Superfund, and the Virginia Waste Management Act. DEQ administers regulations established by the Virginia Waste Management Board and reviews permit applications for completeness and conformance with facility standards and financial assurance requirements. All Virginia localities are required, under the Solid Waste Management Planning Regulations, to identify the strategies they will follow on the management of their solid wastes to include items such as facility siting, long-term (20-year) use and alternative programs such as materials recycling and composting.

1(b) Database Search. The DEQ Division of Land Protection and Revitalization (DLPR) (formerly the Waste Division) conducted a review of a Geographic Information System database and determined that there were waste sites located within the same zip code of the project site:

RCRA/Hazardous Waste Sites

- ID# VAR000508770 – Assateague Island National Seashore Toms Cove, Chincoteague Road, Wallops Island, VA 23337. Contact: Richard Barrett at 410-641-1443.
- ID# VAR000518811 – BAYSYS Techonologies LLC, Fulton Street, Wallops Island, VA 23337. Contact: Dominick Scott at 757-787-7668, extension 2017.
- ID# VAD980555387 – Chesapeake & Potomac Telephone, Wallops Island, Wallops Station, VA 23337. Contact: Bartley Terry at 202-392-8284.
- ID# VAQR000007211 – Cropper USAR Ctr, Kearsarg Circle, Wallops Island, VA 23337. Contact: John Pontier at 301-677-7593.
- ID# VAR000518845 – Mid-Atlantic Regional Spaceport, 34200 Fulton Street, Wallops Island, VA 23337. Contact: Richard D. Baldwin at 757-824-2335.
- ID# VA7800020888 – NASA GSFC Wallops Flight Facility, Fulton Street, Wallops Island, VA 23337. Contact: Joel T. Mitchell at 757-824-1127.
- ID# VA8800010763 – NASA GSFC Wallops Flight Facility, Fulton Street, Main Base, Wallops Island, VA 23337. Contact Joel T. Mitchell at 757-824-1127.
- ID# VAR000518829 – Navy-Surface Combat Systems Center Buildings R-2, R-30, R-20, 30 Battlegroup Way, Wallops Island, VA 23337. Contact: Marilyn C. Ailes at757-824-2082.
- ID# VAR000518837 – Navy-Surface Combat Systems Center Buildings V-10/20/21, V-3, V-24, Artist, Seaside Road, Wallops Island, VA 23337. Contact: Marilyn C. Ailes at757-824-2082.
- ID# VAR000518803 – NOAA, Wallops Command and Data Acquisition Station, 35663 Chincoteague Road, Wallops Island, VA 23337. Contact: Stephen R. Howard at 757-824-7311.
- ID# VAR000509240 – Wallops FUDS Program, NASA Wallops Flight Facility, Wallops Island, VA 23337. Contact: George H. Mears at 757-201-7181.

CERLCLA Sites

- ID #VAN000306904 – Chincoteague Naval Auxiliary Air Station, Wallops Island, Accomack County. Status: Not NPL.
- ID #VA8800010763 – NASA Wallops Island, Accomack County. Status: Not NPL.

- ID #VAN000306905 – Naval Aviation Ordnance Test Station, Wallops Island, Accomack County. Status: Not NPL.

Formerly Used Defense Site (FUDS)

- Wallops Island – ID#CO3VA0301. Federal ID# VA9799F1697.

Petroleum Releases

- A number of petroleum release events were identified at the Wallops Island site but proximity to the project site was not determined.

1(c) Petroleum Storage Tanks. DEQ TRO states that there has been one reported release at or adjacent to the proposed project. This is a closed case at Building V10, PC#1995-2405.

1(d) Requirements.

- Report evidence of a petroleum release, if discovered during construction of this project, to DEQ TRO as authorized by Virginia Code Section 62.1-44.34.8 through 9 and 9VAC25-580-10 *et seq.*
- Characterize and properly dispose of petroleum-contaminated soils and ground water generated during the construction of this project.
- Report the installation or use of any portable aboveground petroleum storage tank (>660 gallons, 9VAC25-91-10 *et seq.*) *for more than 120 days* to DEQ TRO.
- Any soil/sediment that is suspected of contamination or wastes that are generated during construction-related activities must be tested and disposed of in accordance with applicable federal, state, and local laws and regulations.

1(e) Agency Recommendations.

- DEQ encourages all construction projects and facilities to implement pollution prevention principles, including:
  - the reduction, reuse and recycling of all solid wastes generated; and
  - the minimization and proper handling of generated hazardous wastes.

- Review the DEQ petroleum release database, which is available online at *www.deq.virginia.gov/mapper_ext/default.aspx?service=public/wimby*, to determine if there is the potential for contaminated soils in the project area.

2. Wildlife Resources.

2(a) Agency Jurisdiction. DGIF, as the Commonwealth's wildlife and freshwater fish management agency, exercises enforcement and regulatory jurisdiction over wildlife and freshwater fish, including state- or federally-listed endangered or threatened species, but excluding listed insects (Virginia Code Title 29.1). DGIF is a consulting agency under the U.S. Fish and Wildlife Coordination Act (16 U.S.C. sections 661 *et seq.*) and provides environmental analysis of projects or permit applications coordinated through DEQ and several other state and federal agencies. DGIF determines likely impacts upon fish and wildlife resources and habitat, and recommends appropriate measures to avoid, reduce or compensate for those impacts.

2(b) Agency Findings. According to DGIF's records, federally-listed endangered leatherback sea turtles, federally-listed threatened loggerhead sea turtles and a colonial waterbird colony containing Virginia WAP Tier IV Forster's terns have been documented from the project area. It appears that the proposed project sites have been disturbed and improved. Therefore, DGIF does not anticipate the construction of the facility on Wallops is likely to result in adverse impacts upon these species and resources.

2(c) Agency Recommendation.

DGIF has the following recommendations to protect sea turtles and the colonial waterbird colony:

- Coordinate with the FWS regarding possible impacts upon leatherback sea turtles, loggerhead sea turtles and a colonial waterbird colony.
- Coordinate with the FWS regarding possible impacts facility operation (projectile launching) may have upon migrating birds, nesting birds, nesting sea turtles, and marine mammals known from nearby sites and adjacent waters.
- Avoid and minimize impacts upon such species to the greatest extent possible.

To minimize overall impacts to wildlife and natural resources, DGIF offers the following comments about development activities:

- Avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable.
- Maintain undisturbed naturally vegetated buffers of at least 100 feet in width around all on-site wetlands and on both sides of all perennial and intermittent streams
- Design and replicate stormwater controls to replicate and maintain the hydrographic condition of the site prior to the change in landscape. This should include, but not be limited to, utilizing bioretention areas, and minimizing the use of curb and gutter in favor of grassed swales. Bioretention areas (also called rain

gardens) and grass swales are components of Low Impact Development (LID). They are designed to capture stormwater runoff as close to the source as possible and allow it to slowly infiltrate into the surrounding soil. They benefit natural resources by filtering pollutants and decreasing downstream runoff volumes.

- Adhere to a time-of-year restriction from March 15 through August 15 of any year for all tree removal and ground clearing to protect nesting resident and migratory songbirds.
- Adhere to erosion and sediment controls during ground disturbance.

2(d) Additional Information. DGIF maintains a database (*http://vafwis.org/fwis/)* of wildlife locations, including threatened and endangered species, trout streams and anadromous fish waters.

3. Historic Structures and Architectural Resources.

3(a) Agency Jurisdiction. The Department of Historic Resources (DHR) conducts reviews of projects to determine their effect on historic structures or cultural resources under its jurisdiction. DHR, as the designated Historic Preservation Office for the Commonwealth, ensures that federal actions comply with Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, and its implementing regulation at 36 Code of Federal Regulations Part 800. The NHPA requires federal agencies to consider the effects of federal projects on properties that are listed or eligible for listing on the National Register of Historic Places. Section 106 also applies if there are any federal involvements, such as licenses, permits, approvals or funding. DHR also provides comments to DEQ through the state environmental impact report review process.

3(b) Agency Comments. DHR's records indicate that the Navy has created a draft application in the DHR ePix system for this undertaking but has not yet submitted it for review pursuant to Section 106 of the National Historic Preservation Act, as amended, and its implementing regulation 36 CFR Part 800. Since a draft application has been created, DHR anticipates that the Navy will submit the project for consideration.

3(c) Requirement. Consult directly with DHR, as necessary, pursuant to Section 106 of the National Historic Preservation Act (as amended) and its implementing regulations codified at 36 CFR Part 800 which require federal agencies to consider the effects of their undertakings on historic properties.

4. Natural Heritage Resources.

4(a) Agency Jurisdiction.

4(a)(i) Natural Heritage Resources. The mission of the Department of Conservation and Recreation (DCR) is to conserve Virginia's natural and recreational resources. DCR supports a variety of environmental programs organized within seven divisions including the DNH. DNH's mission is conserving Virginia's biodiversity through inventory, protection, and stewardship. The Virginia Natural Area Preserves Act, 10.1-209 through 217 of the *Code of Virginia*, was passed in 1989 and codified DCR's powers and duties related to statewide biological inventory: maintaining a statewide database for conservation planning and project review, land protection for the conservation of biodiversity, and the protection and ecological management of natural heritage resources (the habitats of rare, threatened and endangered species, significant natural communities, geologic sites, and other natural features).

4(a)(ii) Threatened and Endangered Plant and Insect Species. The Endangered Plant and Insect Species Act of 1979, Chapter 39, §3.1-102- through 1030 of the *Code of Virginia*, as amended, authorizes the Virginia Department of Agriculture and Consumer Services (VDACS) to conserve, protect and manage endangered species of plants and insects. VDACS Virginia Endangered Plant and Insect Species Program personnel cooperates with the FWS, DCR DNH and other agencies and organizations on the recovery, protection or conservation of listed threatened or endangered species and designated plant and insect species that are rare throughout their worldwide ranges. In those instances where recovery plans, developed by FWS, are available, adherence to the order and tasks outlined in the plans should be followed to the extent possible. VDACS has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act. Under a Memorandum of Agreement established between the VDACS and DCR, DCR has the authority to report for VDACS on state-listed plant and insect species.

4(b) Agency Finding. The Biotics Data System documents the presence of natural heritage resources in the project area. However, due to the scope of the activity and the distance to the resources, DCR DNH does not anticipate that this project will adversely impact these natural heritage resources.

4(c) Threatened and Endangered Plant and Insect Species. DCR states that the current activity will not affect any documented state-listed plant and insect species.

4(d) Natural Area Preserves. DCR states that there are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

4(e) Agency Recommendation. Contact DCR DNH to re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

5. Water Supply.

5(a) Agency Jurisdiction. The Virginia Department of Health (VDH) Office of Drinking Water (ODW) reviews projects for the potential to impact public drinking water sources (groundwater wells, springs and surface water intakes). The VDH ODW administers both federal and state laws governing waterworks operation.

5(b) Agency Findings. VDH ODW states there are no apparent impacts from the proposed project. There are no groundwater wells within a 1-mile radius of the project site. No surface water intakes are located within a 5-mile radius of the project site. The project is not within Zone 1 (up to 5 miles into the watershed) or Zone 2 (greater than 5 miles into the watershed) of any public surface water sources.

Contact VDH (Barry E. Matthews at 804-864-7515) for additional information if necessary.

6. Aviation Impacts.

6(a) Agency Jurisdiction. The Virginia Department of Aviation (DOAv) is a state agency that plans for the development of the state aviation system; promotes aviation; grants aircraft and airports licenses; and provides financial and technical assistance to cities, towns, counties and other governmental subdivisions for the planning, development, construction and operation of airports, and other aviation facilities.

6(b) Agency Findings. DOAv states that it has no objection to the proposed project.

6(c) Agency Recommendation. DOAv recommends that the Navy undertake clearing precautions in the hazard area for aircraft.

7. Pollution Prevention. DEQ advocates that principles of pollution prevention be used in all construction projects as well as in facility operations. Effective siting, planning and on-site best management practices will help to ensure that environmental impacts are minimized. However, pollution prevention techniques also include decisions related to construction materials, design and operational procedures that will facilitate the reduction of wastes at the source.

7(a) Agency Recommendations. We have several pollution prevention recommendations that may be helpful during the construction:

- Consider development of an effective Environmental Management System (EMS). An effective EMS will ensure that the proposed facility is committed to minimizing its environmental impacts, setting environmental goals and achieving improvements in its environmental performance. DEQ offers EMS

development assistance and recognizes facilities with effective Environmental Management Systems through its Virginia Environmental Excellence Program.

- Consider environmental attributes when purchasing materials. For example, the extent of recycled material content, toxicity level and amount of packaging should be considered and can be specified in purchasing contracts.
- Consider contractors' commitment to the environment when choosing contractors. Specifications regarding raw materials and construction practices can be included in contract documents and requests for proposals.
- Choose sustainable materials and practices for infrastructure and building construction and design. These could include asphalt and concrete containing recycled materials, and integrated pest management in landscaping, among other things.

The DEQ Office of Pollution Prevention provides information and technical assistance relating to pollution prevention techniques. If interested, please contact DEQ (Sharon Baxter at 804-698-4344).

8. Local and Regional Comments. As customary, DEQ invited Accomack County and the Accomack-Northampton Planning District Commission (PDC) to comment on the project.

8(a) Jurisdiction. In accordance with the Code of Virginia, Section 15.2-4207, planning district commissions encourage and facilitate local government cooperation and state-local cooperation in addressing, on a regional basis, problems of greater than local significance. The cooperation resulting from this is intended to facilitate the recognition and analysis of regional opportunities and take account of regional influences in planning and implementing public policies and services. Planning district commissions promote the orderly and efficient development of the physical, social and economic elements of the districts by planning, and encouraging and assisting localities to plan for the future.

8(b) Local Comments. Accomack County did not respond to DEQ's request for comments.

8(c) Regional Comments. The Accomack-Northampton PDC did not respond to DEQ's request for comments.

REGULATORY AND COORDINATION NEEDS

1. Erosion and Sediment Control Plans and General Permit for Stormwater Discharges from Construction Activities.

1(a) Erosion and Sediment Control. According to the DEQ Water Division, clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbing activities that result in the total land disturbance of equal to or greater 10,000 square feet would be regulated by *VESCL&R*. Accordingly, the Navy must prepare and implement an ESC plan to ensure compliance with state law and regulations. The Navy is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy (Reference: VESCL 62.1-44.15 *et seq.*). Submit the plan and direct questions to DEQ TRO (Noah Hill at 757-518-2024 or *Noah.Hill@deq.virginia.gov*).

1(b) General Permit for Stormwater Discharges from Construction Activities (VAR10). The operator or owner of a construction activity involving land disturbance of equal to or greater than 1 acre is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project specific stormwater pollution prevention plan (SWPPP). The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit and the SWPPP must address water quality and quantity in accordance with the *Virginia Stormwater Management Program (VSMP) Permit Regulations*. General information and registration forms for the General Permit are available at *www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/ConstructionGeneralPermit.aspx*. For additional information, contact the DEQ Water Division (Holly Sepety at *Holly.Sepety@deq.virginia.gov*).

2. Air Quality Regulations. The following regulations may apply during construction:

- fugitive dust and emissions control (9VAC5-50-60 *et seq.*); and
- open burning restrictions (9VAC5-130 *et seq.*).

Contact officials with Accomack County for information on any local requirements pertaining to open burning.

Contact DEQ TRO (Troy Breathwaite at *Troy.Breathwaite@deq.virginia.gov* or 757-518-2006) for additional information on air regulations if necessary.

3. Solid and Hazardous Wastes. All solid waste, hazardous waste and hazardous materials must be managed in accordance with all applicable federal, state and local environmental regulations.

These state laws and regulations may apply:

- Virginia Waste Management Act (*Code of Virginia* Section 10.1-1400 *et seq.*);
- Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC20-60);
- Virginia Solid Waste Management Regulations (VSWMR) (9VAC20-81); and
- Virginia Regulations for the Transportation of Hazardous Materials (9VAC20-110).

These federal laws and regulations may apply:

- Resource Conservation and Recovery Act (RCRA) (42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations); and
- U.S. Department of Transportation Rules for Transportation of Hazardous materials (49 Code of Federal Regulations Part 107).

Contact DEQ TRO (Milt Johnston at *Milt.Johnston@deq.virginia.gov* or 757-518-2151) for additional information on waste management.

3(a) Coordination.

- Report evidence of a new petroleum release, if discovered during construction of this project, to DEQ TRO (Lynne Smith at 757-518-2055 or Gene Siudyla at 757-518-2117).
- Report the installation or use of any portable aboveground petroleum storage tank (>660 gallons, 9VAC25-91-10 *et seq.*) *for more than 120 days* to DEQ TRO (DEQ TRO Petroleum Storage Tank Program, Attention: Tom Madigan, 5636 Southern Blvd., Virginia Beach, Virginia 23462, Phone: 757-518-2115).

4. Natural Heritage Resources.

- Contact the DCR DNH (804-371-2708) to re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

5. Wildlife Resources and Protected Species.

- DGIF's database may be accessed at *http://vafwis.org/fwis/* or by contacting DGIF (Shirl Dressler at 804-367-6913).
- Contact DGIF (Amy Ewing at *Amy.Ewing@dgif.virginia.gov*) for additional information regarding its recommendations as necessary.
- Coordinate with the FWS (Cindy Schulz at *cindy_schulz@fws.gov* or 804-824-2426) regarding possible impacts upon leatherback sea turtles, loggerhead sea turtles and a colonial waterbird colony.

- Coordinate with the FWS regarding possible impacts facility operation (projectile launching) may have upon migrating birds, nesting birds, nesting sea turtles, and marine mammals known from nearby sites and adjacent waters.

6. Historic Resources. Consult directly with DHR (Marc Holma at *Marc.Holma@dhr.virginia.gov*) pursuant to Section 106 of the National Historic Preservation Act (as amended) and its implementing regulations codified at 36 CFR Part 800 which require federal agencies to consider the effects of their undertakings on historic properties.

7. Marine Navigation. Notify the U.S. Coast Guard (703-313-5900) when activities may affect marine navigation.

Thank you for the opportunity to comment on this FCD. The detailed comments of reviewers are attached. If you have questions, please do not hesitate to call me at (804) 698-4325 or Julia Wellman at (804) 698-4326.

Sincerely,

Ellie Irons, Program Manager
Environmental Impact Review

Enclosures

cc: Steven B. Miner, Accomack County
Elaine K.N. Meil, Accomack-Northampton PDC

ec: Amy Ewing, DGIF
Robbie Rhur, DCR
Barry Matthews, VDH
Steve Coe, DEQ DLPR
Kotur Narasimhan, DEQ DAPC
Larry Gavan, DEQ
Daniel Moore, DEQ
Holly Sepety, DEQ
Shantelle Nicholson, DEQ
Cindy Keltner, DEQ NRO
Roger Kirchen, DHR
Marc Holma, DHR
Pam Mason, VIMS

George Badger, MRC

Wellman, Julia (DEQ)

From: Ewing, Amy (DGIF)
Sent: Tuesday, April 15, 2014 11:26 AM
To: Wellman, Julia (DEQ)
Cc: Cason, Gladys (DGIF); nhreview (DCR)
Subject: ESSLog# 34628_14-038F_Navy testing of hyper velocity projectiles

We have reviewed the subject project that proposes to construct and operate a hypervelocity projectile testing facility at NASA's Wallops Island Flight Facility in Accomac County, VA.

According to our records, federal Endangered leatherback sea turtles, federal Threatened loggerhead sea turtles and a colonial waterbird colony containing Virginia WAP Tier IV Forster's terns have been documented from the project area. It appears the possible sites of facility location are already disturbed and improved. Therefore, we do not anticipate the construction of the facility on Wallops is likely to result in adverse impacts upon these species and resources. However, we recommend coordination with the USFWS regarding possible impacts upon these species. Further, we recommend close coordination with the USFWS regarding possible impacts facility operation (projectile launching) may have upon migrating birds, nesting birds, nesting sea turtles, and marine mammals known from nearby sites and adjacent waters. We recommend that impacts upon such species be avoided or minimized to the greatest extent possible.

This project is located within 2 miles of a documented occurrence of a state or federal threatened or endangered plant or insect species and/or other Natural Heritage coordination species. Therefore, we recommend coordination with VDCR-DNH regarding the protection of these resources.

To minimize overall impacts to wildlife and our natural resources, we offer the following comments about development activities: We recommend that the applicant avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable. We recommend maintaining undisturbed naturally vegetated buffers of at least 100 feet in width around all on-site wetlands and on both sides of all perennial and intermittent streams

We recommend that the stormwater controls for this project be designed to replicate and maintain the hydrographic condition of the site prior to the change in landscape. This should include, but not be limited to, utilizing bioretention areas, and minimizing the use of curb and gutter in favor of grassed swales. Bioretention areas (also called rain gardens) and grass swales are components of Low Impact Development (LID). They are designed to capture stormwater runoff as close to the source as possible and allow it to slowly infiltrate into the surrounding soil. They benefit natural resources by filtering pollutants and decreasing downstream runoff volumes.

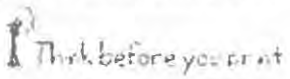
We recommend that all tree removal and ground clearing adhere to a time of year restriction protective of resident and migratory songbird nesting from March 15 through August 15 of any year.

We recommend adherence to erosion and sediment controls during ground disturbance.

We defer FCD to MRC as this site drains to marine waters.

Thanks, Amy

Amy Ewing ☯ Environmental Services Biologist/FWIS Manager ☯ VA Dept. of Game and Inland Fisheries ☯ 4010 West Broad St. Richmond, VA 23230 ☯ 804-367-2211 ☯ www.dgif.virginia.gov



Molly Joseph Ward
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

600 East Main Street, 24th Floor
Richmond, Virginia 23219
(804) 786-6124

MEMORANDUM

DATE: April 7, 2014

TO: Julia Wellman, DEQ

FROM: Roberta Rhur, Environmental Impact Review Coordinator

SUBJECT: DEQ 14-038F, Hypervelocity Projectiles & Electromagnetic Railgun Testing, NASA Wallops

Division of Natural Heritage

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

Biotics documents the presence of natural heritage resources in the project area. However, due to the scope of the activity and the distance to the resources, we do not anticipate that this project will adversely impact these natural heritage resources.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Gladys Cason (804-367-0909 or Gladys.Cason@dgif.virginia.gov). This project is located within 2 miles of documented occurrences of state and federally listed animals. Therefore, DCR recommends coordination with the U.S. Fish and Wildlife Service (USFWS) and Virginia's regulatory authority for the

management and protection of these species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570).

The remaining DCR divisions have no comments regarding the scope of this project. Thank you for the opportunity to comment.

Cc: Amy Ewing, VDGIF
Troy Andersen, USFWS

Wellman, Julia (DEQ)

From: Dufore, Ezekiel (VDH)
Sent: Monday, April 07, 2014 10:21 AM
To: Wellman, Julia (DEQ)
Cc: Soto, Roy (VDH)
Subject: 14-038F | Testing Hypervelocity Projectiles and Electromagnetic Railgun at NASA Wallops Flight Facility

Testing Hypervelocity Projectiles and Electromagnetic Railgun at NASA Wallops Flight Facility
Project #: 14-038F
Location: Accomack

VDH – Office of Drinking Water has reviewed the above project. Below are our comments as they relate to proximity to **public drinking water sources** (groundwater wells, springs and surface water intakes). Potential impacts to public water distribution systems or sanitary sewage collection systems **must be verified by the local utility.**

No public groundwater wells are within a 1 mile radius of the project site.

No public surface water intakes are located within a 5 mile radius of the project site.

The project is not within Zone 1 (up to 5 miles into the watershed) or Zone 2 (greater than 5 miles into the watershed) of any public surface water sources.

There are no apparent impacts to public drinking water sources due to this project.

The provided documentation indicates that the project does not involve the installation of any septic tanks or drain fields. Therefore, the project appears to be consistent with the *Shoreline Sanitation* policy of the *Virginia Coastal Zone Management Program*.

Ezekiel Dufore
Office of Drinking Water
Virginia Department of Health
James Madison Building
109 Governor Street
Richmond, VA 23219
(w) 804-864-7201
ezekiel.dufore@vdh.virginia.gov

VIRGINIA DEPARTMENT OF
ENVIRONMENTAL QUALITY

MEMORANDUM

TO: Julia Wellman, Environmental Program Planner

FROM: Steve Coe, Division of Land Protection & Revitalization Review Coordinator

DATE: April 1, 2014

COPIES: Sanjay Thirunagari, Division of Land Protection & Revitalization Review Manager; file

SUBJECT: Environmental Impact Report; 14-038F DOD Navy Testing Hypervelocity Projectiles and Electromagnetic Railgun at Wallops Island

The Division of Land Protection and Revitalization (DLPR) has completed its review of the Environmental Impact Review Request for the DOD Navy Testing Hypervelocity Projectiles and Electromagnetic Railgun at Wallops Island in Accomack County, Virginia. We have the following comments concerning the waste issues associated with this project.

Neither solid and nor hazardous waste issues were addressed in the report. The report did not include a search of waste-related data bases. The Waste Division staff conducted a cursory review of its data files including a GIS database search, and was able to identify possible waste sites that would impact or be impacted by the proposed project.

Facility waste sites of concern were located within the same zip code of the proposed project under zip code 23337, but proximity to the project site was not determined.

RCRA/Hazardous Waste Facilities – 11 sites were identified in zip code 23337, but proximity to the project site was not determined.

1) ID# VAR000508770 – Assateague Island National Seashore Toms Cove, Chincoteague Road, Wallops Island, VA 23337. Contact: Richard Barrett at 410-641-1443.
2) ID# VAR000518811 – BAYSYS Techonologies LLC, Fulton Street, Wallops Island, VA 23337. Contact: Dominick Scott at 757-787-7668, extension 2017.
3) ID# VAD980555387 – Chesapeake & Potomac Telephone, Wallops Island, Wallops Station, VA 23337. Contact: Bartley Terry at 202-392-8284.
4) ID# VAQR000007211 – Cropper USAR Ctr, Kearsarg Circle, Wallops Island, VA 23337. Contact: John Pontier at 301-677-7593.
5) ID# VAR000518845 – Mid-Atlantic Regional Spaceport, 34200 Fulton Street, Wallops Island, VA 23337. Contact: Richard D. Baldwin at 757-824-2335.
6) ID# VA7800020888 – NASA GSFC Wallops Flight Facility, Fulton Street, Wallops Island, VA 23337. Contact: Joel T. Mitchell at 757-824-1127.

7) ID# VA8800010763 – NASA GSFC Wallops Flight Facility, Fulton Street, Main Base, Wallops Island, VA 23337. Contact Joel T. Mitchell at 757-824-1127.
8) ID# VAR000518829 – Navy-Surface Combat Systems Center Buildings R-2, R-30, R-20, 30 Battlegroup Way, Wallops Island, VA 23337. Contact: Marilyn C. Ailes at757-824-2082.
9) ID# VAR000518837 – Navy-Surface Combat Systems Center Buildings V-10/20/21, V-3, V-24, Artist, Seaside Road, Wallops Island, VA 23337. Contact: Marilyn C. Ailes at757-824-2082.
10) ID# VAR000518803 – NOAA, Wallops Command and Data Acquisition Station, 35663 Chincoteague Road, Wallops Island, VA 23337. Contact: Stephen R. Howard at 757-824-7311.
11) ID# VAR000509240 – Wallops FUDS Program, NASA Wallops Flight Facility, Wallops Island, VA 23337. Contact: George H. Mears at 757-201-7181.

CERCLA Sites – three, but proximity to the project site was not determined

1) ID #VAN000306904 – Chincoteague Naval Auxiliary Air Station, Wallops Island, Accomack County. Status: Not NPL.
2) ID #VA8800010763 – NASA Wallops Island, Accomack County. Status: Not NPL.
3) ID #VAN000306905 – Naval Aviation Ordnance Test Station, Wallops Island, Accomack County. Status: Not NPL.

The following websites may prove helpful in locating additional information for these identification numbers: http://www.epa.gov/superfund/sites/cursites/index.htm or http://www.epa.gov/enviro/html/rcris/rcris_query_java.html.

FUDs Site – one

Wallops Island – ID#CO3VA0301. Federal ID# VA9799F1697.

Solid Waste Facilities – none

VRP Sites - none

Petroleum Release events – A number of petroleum release events were identified at the Wallops Island site, but proximity to the project site was not determined. Project engineer should review the database to determine if there is the potential for contaminated soils in the project area.

Example: ID# 19952405 – NASA Wallops Flight Facility, Bldg V10, Wallops Island, Virginia 23337. Event Date: 8/10/2007. Status: Closed.

(Note: Dates above are the latest PC Database edit dates of the specific PC Case Nos.)

Please note that the DEQ's Petroleum Contamination (PC) case files of the PC Case Nos., in zip code 23337 and any identified petroleum releases (per the example above) should be evaluated by the project engineer or manager to establish the exact location of the release and the nature and extent of the petroleum release and the potential to impact the proposed project. The facility representative should contact the DEQ's Valley Regional Office for further information and the administrative records of the PC cases which are in close proximity to the proposed project. Web link: http://www.deq.virginia.gov/mapper_ext/default.aspx?service=public/wimby.

NOTE: In any construction or demolition project, the proper management of wastes (solid or hazardous) generated is a priority. The information below provides waste management guidance for the project.

General Comments

Soil, Sediment, and Waste Management

Any soil that is suspected of contamination or wastes that are generated must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations. Some of the applicable state laws and regulations are: Virginia Waste Management Act, Code of Virginia Section 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60); Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-81); Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal laws and regulations are: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous materials, 49 CFR Part 107.

Asbestos and/or Lead-based Paint

All structures being demolished/renovated/ removed should be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to demolition. If ACM or LBP are found, in addition to the federal waste-related regulations mentioned above, State regulations 9VAC 20-81-620 for ACM and 9VAC 20-60-261 for LBP must be followed. Questions may be directed to Ms. Lisa Silvia at the Tidewater Regional Office (757-518-2175).

Pollution Prevention – Reuse - Recycling

Please note that DEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All generation of hazardous wastes should be minimized and handled appropriately.

If you have any questions or need further information, please contact Steve Coe, Environmental Specialist, at (804) 698-4029.

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR PROGRAM COORDINATION

ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY

TO: Julia H. Wellman **DEQ - OEIA PROJECT NUMBER: 14 – 038F**

PROJECT TYPE: ☐ STATE EA / EIR **X FEDERAL EA / EIS** ☐ SCC

X CONSISTENCY DETERMINATION

PROJECT TITLE: TESTING HYPERVELOCITY PROJECTILES AND ELECTROMAGNETIC RAILGUN AT NASA WALLOPS FLIGHT FACILITY

PROJECT SPONSOR: DOD / DEPARTMENT OF THE NAVY

PROJECT LOCATION: **X OZONE ATTAINMENT AREA**

REGULATORY REQUIREMENTSMAY BE APPLICABLE TO: **X CONSTRUCTION**
X OPERATION

STATE AIR POLLUTION CONTROL BOARD REGULATIONS THAT MAY APPLY:

1. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 E – STAGE I
2. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 F – STAGE II Vapor Recovery
3. ☐ 9 VAC 5-45-780 et seq. – Asphalt Paving operations
4. **X 9 VAC 5-130 et seq. – Open Burning**
5. **X 9 VAC 5-50-60 et seq. Fugitive Dust Emissions**
6. ☐ 9 VAC 5-50-130 et seq. - Odorous Emissions; Applicable to_____
7. ☐ 9 VAC 5-50-160 et seq. – Standards of Performance for Toxic Pollutants
8. ☐ 9 VAC 5-50-400 Subpart_____, Standards of Performance for New Stationary Sources, designates standards of performance for the_____
9. ☐ 9 VAC 5-80-1100 et seq. of the regulations – Permits for Stationary Sources
10. ☐ 9 VAC 5-80-1700 et seq. Of the regulations – Major or Modified Sources located in PSD areas. This rule may be applicable to the _____
11. ☐ 9 VAC 5-80-2000 et seq. of the regulations – New and modified sources located in non-attainment areas
12. ☐ 9 VAC 5-80-800 et seq. Of the regulations – Operating Permits and exemptions. This rule may be applicable to _____

COMMENTS SPECIFIC TO THE PROJECT:

K. S. Narasimhan

(Kotur S. Narasimhan)
Office of Air Data Analysis **DATE: March 14, 2014**

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
Fax: 804-698-4019 - TDD (804) 698-4021
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

MEMORANDUM

TO: Daniel Moore

FROM: Shawn Smith, Chesapeake Bay Local Assistance

DATE: April 1, 2014

SUBJECT: DEQ 14-038F Wallops Island Rail Gun, Accomack County

The project proposes to construct a Hypervelocity Projectiles & Electromagnetic Railgun at NASA Wallops Flight Facility in Accomack County. Wallops Island facility is located along the Atlantic Ocean shoreline. Accomack County has extended the Chesapeake Bay Preservation Areas to include the Atlantic Ocean watershed, however, the County did not designate CBPAs for federally owned lands. As the project is located outside of the local CBPA designation and outside of the Chesapeake Bay watershed, there are no requirements for compliance with the Chesapeake Bay Preservation Act for this project.

Wellman, Julia (DEQ)

From: Gavan, Larry (DEQ)
Sent: Thursday, March 13, 2014 8:45 AM
To: Wellman, Julia (DEQ)
Subject: FW: NEW PROJECT Navy 14-038F

Pls. see the comments below.
Thx
L

(a) Agency Jurisdiction. The Department of Environmental Quality (DEQ) administers the *Virginia Erosion and Sediment Control Law and Regulations* (*VESCL&R*) and *Virginia Stormwater Management Law and Regulations* (*VSWML&R*).

(b) Erosion and Sediment Control and Stormwater Management Plans. The Applicant and its authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with *VESCL&R* and *VSWML&R*, including coverage under the general permit for stormwater discharge from construction activities, and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act-Section 313, federal consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbing activities that result in the total land disturbance of equal to or greater than 10,000 square feet (2,500 square feet in Chesapeake Bay Preservation Area) would be regulated by *VESCL&R*. Accordingly, the Applicant must prepare and implement an erosion and sediment control (ESC) plan to ensure compliance with state law and regulations. The ESC plan is submitted to the DEQ Regional Office that serves the area where the project is located for review for compliance. The Applicant is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy. [Reference: VESCL 62.1-44.15 et seq.]

From: Fulcher, Valerie (DEQ)
Sent: Wednesday, March 12, 2014 4:43 PM
To: dgif-ESS Projects (DGIF); Rhur, Robbie (DCR); odwreview (VDH); Coe, Stephen (DEQ); Narasimhan, Kotur (DEQ); Gavan, Larry (DEQ); Moore, Daniel (DEQ); Sepety, Holly (DEQ); Nicholson, Shantelle (DEQ); Keltner, Cindy (DEQ); Kirchen, Roger (DHR); mason@vims.edu; Watkinson, Tony (MRC); Denny, S. Scott (DOAV); Simmers, Susan H. (DOAV)
Cc: Wellman, Julia (DEQ)
Subject: NEW PROJECT Navy 14-038F

Good afternoon - attached is a new EIR review request/project:

Navy: Testing Hypervelocity Projectiles & Electro-magnetic Railgun at NASA Wallops Flight Facility, Accomack County, DEQ #14-038F

Hard copies have been mailed to Accomack County and Accomack-Northampton PDC.

The due date for comments is APRIL 8, 2014. You can send your comments either directly to Julia by email (Julia.Wellman@deq.virginia.gov, or you can send your comments by regular interagency/U.S. mail to the Department of Environmental Quality, Office of Environmental Impact Review, 629 E. Main St., 6th Floor, Richmond, VA 23219. If you have any questions, please email Julia.

Thanks!

Valerie

Valerie A. Fulcher, CAP-OM, Executive Secretary Sr.
Department of Environmental Quality
Environmental Enhancement - Office of Environmental Impact Review
629 E. Main St., 6th Floor
Richmond, VA 23219
804/698-4330
804/698-4319 (Fax)
email: Valerie.Fulcher@deq.virginia.gov
www.deq.virginia.gov

DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
ENVIRONMENTAL IMPACT REVIEW COMMENTS

April 8, 2014

PROJECT NUMBER: 14-038F

PROJECT TITLE: Testing Hypervelocity Projectiles & Electro-magnetic Railgun at NASA Wallops Flight Facility

As Requested, TRO staff has reviewed the supplied information and has the following comments:

Petroleum Storage Tank Cleanups:
There has been one reported release at or adjacent to the proposed project. This is a closed case at Building V10, PC#1995-2405. If evidence of a petroleum release is discovered during implementation of this project, it must be reported to DEQ, as authorized by CODE # 62.1-44.34.8 through 9 and 9 VAC 25-580-10 et seq. Contact Mr. Gene Siudyla at (757) 518-2117 or Ms. Lynne Smith at (757) 518-2055. Petroleum-contaminated soils and ground water generated during implementation of this project must be properly characterized and disposed of properly.

Petroleum Storage Tank Compliance/Inspections:
The installation or use of any portable aboveground petroleum storage tank (>660 gallons - 9 VAC 25-91-10 et seq.) for more than 120 days for this project must be reported to the DEQ Tidewater Regional Office Petroleum Storage Tank Program attn: Tom Madigan - DEQ Tidewater Regional Office - 5636 Southern Blvd., Virginia Beach, VA 23462. Phone (757) 518-2115.

Virginia Water Protection Permit Program (VWPP):
No comments.

Air Permit Program :
No comment.

Water Permit Program :
Water Permits (VPDES/VPA/MS4) - Wallops Flight Facility is regulated under a VPDES individual permit that includes storm water pollution prevention plan (SWPPP) implementation, so any storm water associated with this activity would be addressed in the SWPPP. Land disturbance appears to be less than 1.0 acres during construction.

Groundwater - No comments

DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
ENVIRONMENTAL IMPACT REVIEW COMMENTS

April 8, 2014

PROJECT NUMBER: 14-038F

PROJECT TITLE: Testing Hypervelocity Projectiles & Electro-magnetic Railgun at NASA Wallops Flight Facility

Waste Permit Program :
All waste generated during the operation of the gun must be characterized in accordance with the Virginia Hazardous Waste Management Regulations prior to disposal at an appropriate facility.

The staff from the Tidewater Regional Office thanks you for the opportunity to provide comments.

Sincerely,

Cindy Keltner
Environmental Specialist II
5636 Southern Blvd.
VA Beach, VA 23462
(757) 518-2167
Cindy.Keltner@deq.virginia.gov

Wellman, Julia (DEQ)

From: Holma, Marc (DHR)
Sent: Thursday, March 13, 2014 9:05 AM
To: bethany.brown@navy.mil; Wellman, Julia (DEQ)
Subject: Testing of Hypervelocity Projectiles and an Electromagnetic Railgun at NASA Wallops Flight Facility (2014-3110) | e-Mail #00735

Dear Ms Wellman:

The Department of Historic Resources (DHR) is in receipt of the request by the Department of Environmental Quality (DEQ) for our review and comment on the above referenced project. Our records indicate that the Navy has created a draft application in our ePix system for this undertaking, but has not yet submitted it for our review pursuant to Section 106 of the National Historic Preservation Act, as amended, and its implementing regulation 36 CFR Part 800. Since a draft application has been created we anticipate that the Navy will shortly submit the project for our consideration. Once we have received the ePix application from the Navy and reviewed the undertaking the DHR will copy DEQ on our comments.

Mr. Brown, when you are ready for DHR to review the project please take the application out of "draft" so it may be submitted to our agency.

Sincerely,

Marc Holma

COMMONWEALTH of VIRGINIA

Randall P Burdette
Director

Department of Aviation
5702 Gulfstream Road
Richmond, Virginia 23250-2422

V/TDD • (804) 236-3624
FAX • (804) 236-3635

March 24, 2014

Mrs. Julia Wellman
Virginia Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, Virginia 23219

RE: NASA Wallops Island Hypervelocity Projectiles and Railgun, Federal Project # **14-038F**

Dear Ms. Wellman:

The Virginia Department of Aviation has reviewed the information package you provided regarding the above referenced project. Following our review, staff has no objection to the proposed project. However, the project sponsor should take the same clearing precautions in the hazard area for aircraft that inadvertently fly into the area as they do with any marine vessels.

If you have any questions regarding this matter, please contact me at (804) 236-3632 at extension 110.

Sincerely,

S. Scott Denny
Senior Aviation Planner
Virginia Department of Aviation

COMMONWEALTH of VIRGINIA

Marine Resources Commission
2600 Washington Avenue
Third Floor
Newport News, Virginia 23607

March 17, 2014

Ms. Julia H. Wellman
c/o Department. Of Environmental Quality
Office of the Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, Virginia 23219

Re: 14-038F
"Electromagnetic Railgun Wallops Island"

Dear Ms. Wellman:

You have inquired regarding the U. S. Navy's request to install a 5 inch powder gun and an electromagnetic railgun on NASA's Wallops Island in Accomack County. The firing range will extend up to 140 nautical miles into the Atlantic Ocean.

The Marine Resources Commission requires a permit for any activities that encroach upon or over, or take use of materials from the beds of the bays, ocean, rivers and streams, or creeks which are the property of the Commonwealth.

After discussing the proposed project with Tony Watkinson (VMRC's Chief of Habitat Management). We have determined that the proposal is not a fill and will not require a permit from our agency.

For your information, however, there may be gill nets in the area during certain times of the year. Also, there appears to be possible navigational issues leading into Chincoteague Inlet from the south.

If I may be of further assistance, please do not hesitate to contact me at (757) 414-0710.

Sincerely,

George H. Badger, III
Environmental Engineer

Commonwealth of Virginia Environmental Impact Review

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DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND
1333 ISAAC HULL AVENUE SE STOP 5013
WASHINGTON NAVY YARD DC 20376-5013

IN REPLY REFER TO
11018
Ser 05T/019
29 May 2014

Ellie Irons
Office of Environmental Impact Review
Virginia Department of Environmental Quality
629 East Main Street, Sixth Floor
Richmond, Virginia 23219

Subj: ENVIROMENTAL ASSESSMENT FOR TESTING OF HYPERVELOCITY PROJECTILES AND AN ELECTROMAGNETIC RAILGUN AT NASA WALLOPS ISLAND FLIGHT FACILITY

Encl: (1) Testing of Hypervelocity Projectiles and an Electromagnetic Railgun EA (three paper copies)

Dear Ms. Irons:

Pursuant to the Code of Virginia § 10.1-1183, enclosed are three hard copies of an environmental assessment (EA) for testing of hypervelocity projectiles and an electromagnetic railgun on the National Aeronautics and Space Administration's (NASA's) Wallops Flight Facility (WFF) on Wallops Island, Virginia. An electronic copy of the EA is available at: http://www.navsea.navy.mil/nswc/dahlgren/RANGE/Railgun_Environmental_Assessment.pdf.

This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality's regulations implementing NEPA (40 CFR § 1500). The Navy's proposed action is to install a 5" powder gun and an electromagnetic (EM) railgun; test hypervelocity projectiles (HVPs); integrate HVPs with the EM railgun; and integrate the HVP/EM railgun weapon system with combat systems equipment currently in use on United States Navy warships. The proposed action would occur at NASA's WFF and require firing from WFF's Wallops Island at offshore targets in the Virginia Capes Range Complex. The information in this EA was prepared in cooperation with NASA.

The Navy is requesting that your office coordinate the review of this EA with the appropriate Virginia Department of Environmental Quality reviewers and other state and local agencies as required. The Navy will consult directly with the Department of Historic Resources pursuant to Section 106 of the National Historic Preservation Act. The Navy is also coordinating review of our proposed action with required federal agencies, including the National Marine Fisheries Service and the United States Fish and Wildlife Service. A notification of that the EA is being made available for a 30-day public review will be published in two newspapers serving the Wallops Island area, the Chincoteague Beacon and the Eastern Shore News.

Subj: ENVIROMENTAL ASSESSMENT FOR TESTING OF HYPERVELOCITY PROJECTILES AND AN ELECTROMAGNETIC RAILGUN AT NASA WALLOPS ISLAND FLIGHT FACILITY

Please provide the coordinated comments on the EA no later than thirty (30) calendar days following the receipt of this letter. If you have any questions about the enclosed statement or need additional information, please contact Dr. Jeanne Hartzell at 540 653-0933 or Jeanne.Hartzell1@navy.mil. Written correspondence can be sent to:

Naval Surface Warfare Center Dahlgren Division
Safety and Environmental Office
Attn: Jeanne Hartzell
17483 Dahlgren Road Suite 104
Dahlgren VA 22448-5119

Sincerely,

MICHAEL ZIV
CAPT USN
Program Manager PMS 405
Directed Energy & Electric Weapon Systems

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
Fax: 804-698-4019 - TDD (804) 698-4021
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

July 1, 2014

Ms. Jeanne L. Hartzell
HVP-Railgun EA Project Manager
Naval Surface Warfare Center Dahlgren
CX8 - Safety and Environmental Office
17483 Dahlgren Road, Suite 104
Bldg 189, Rm 114
Dahlgren, VA 22448-5119

RE: Environmental Assessment: Testing Hypervelocity Projectiles and Electromagnetic Railgun at NASA Wallops Flight Facility located in Accomack County (DEQ 14-093F)

Dear Ms. Hartzell:

The Commonwealth of Virginia has completed its review of the draft Environmental Assessment (EA) for the above-referenced project. The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of federal environmental documents prepared pursuant to the National Environmental Policy Act (NEPA) and responding to appropriate federal officials on behalf of the Commonwealth. The following agencies and locality participated in this review:

Department of Environmental Quality
Department of Game and Inland Fisheries
Department of Conservation and Recreation
Department of Historic Resources
Marine Resources Commission
Accomack County

The Virginia Institute of Marine Science, Accomack-Northampton Planning District Commission and Virginia Department of Health also were invited to comment on the project.

PROJECT DESCRIPTION

The U.S. Department of the Navy (Navy) submitted an EA for the installation and operation of a powder gun and electromagnetic railgun at the National Aeronautics and Space Administration (NASA) Wallops Flight Facility on Wallops Island in Accomack County. The Navy proposes to test hypervelocity projectiles (HVP), and integrate HVPs with the railgun and the railgun weapons system with combat systems equipment. The proposed action would require firing projectiles at targets from 5 to 100 nautical miles at offshore targets in the Virginia Capes Range Complex. The proposed site for the guns is the existing Surface Combat Systems Center on Wallops Island. DEQ reviewed the federal consistency determination for the proposed project under DEQ 14-038F.

ENVIRONMENTAL IMPACTS AND MITIGATION

1. Wetlands and Water Quality. According to the EA (pages 3-85 and 3-95), there are no streams or water bodies on Wallops Island and there are no wetlands on the proposed project site.

1(a) Agency Jurisdiction. The State Water Control Board promulgates Virginia's water regulations, covering a variety of permits to include Virginia Pollutant Discharge Elimination System Permit, Virginia Pollution Abatement Permit, Surface and Groundwater Withdrawal Permit, and the Virginia Water Protection (VWP) Permit. The VWP Permit is a state permit which governs wetlands, surface water and surface water withdrawals/impoundments. It also serves as § 401 certification of the federal Clean Water Act § 404 permits for dredge and fill activities in waters of the United States. The VWP Permit (VWPP) Program is under the Office of Wetlands and Water Protection/Compliance within the DEQ Division of Water Quality Programs. In addition to central office staff who review and issue VWP permits for transportation and water withdrawal projects, the six DEQ regional offices perform permit application reviews and issue permits for the covered activities.

1(b) Agency Findings. The DEQ Tidewater Regional Office (TRO) states that based on the National Wetlands Inventory (NWI) mapping depicted in the EA, the launch area for the preferred Pad 5 alternative does not impact any wetland areas. Provided that the depicted wetland locations at the project site have been verified by the U.S. Corps of Engineers (Corps), the VWP Permit Program has no additional comments.

1(c) Requirements. If the project changes to include impacts to waters or wetlands, a VWP Permit (9VAC25-210 *et seq.*) may be required.

1(d) Agency Recommendation. If the project changes to include impacts to waters or wetlands, coordinate with DEQ TRO regarding any VWP Permit Program requirements.

2. Subaqueous Lands. The EA (page 3-100) states that projectiles would land on the ocean bottom.

2(a) Agency Jurisdiction. The Virginia Marine Resources Commission (VMRC) regulates encroachments in, on or over state-owned subaqueous beds as well as tidal wetlands pursuant to Virginia Code § 28.2-1200 through 1400.

The VMRC serves as the clearinghouse for the Joint Permit Application (JPA) used by the:

- Corps for issuing permits pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act;
- DEQ for issuance of a VWP permit;
- VMRC for encroachments on or over state-owned subaqueous beds as well as tidal wetlands; and
- local wetlands board for impacts to wetlands.

The VMRC will distribute the completed JPA to the appropriate agencies. Each agency will conduct its review and respond.

2(b) Agency Finding. VMRC states that the proposal would not require a permit from VMRC.

2(c) Agency Comments. VMRC states that there may be gill nets in the area during certain times of the year and there may be possible navigational issues leading into Chincoteague Inlet.

2(d) Agency Recommendation. Notify the U.S. Coast Guard when activities may affect marine navigation.

3. Air Quality. The EA (page 3-37) states that emissions associated with the operation of the guns would not have significant impacts on air quality.

3(a) Agency Jurisdiction. The DEQ Air Division, on behalf of the Air Pollution Control Board, is responsible for developing regulations that implement Virginia's Air Pollution Control Law. DEQ is charged with carrying out mandates of the state law and related regulations as well as Virginia's federal obligations under the Clean Air Act as amended in 1990. The objective is to protect and enhance public health and quality of life through control and mitigation of air pollution. The division ensures the safety and quality of air in Virginia by monitoring and analyzing air quality data, regulating sources of air pollution, and working with local, state and federal agencies to plan and implement strategies to protect Virginia's air quality. The appropriate regional office is directly responsible for the issue of necessary permits to construct and operate all stationary sources in the region as well as to monitor emissions from these sources for

compliance. As a part of this mandate, the environmental documents of new projects to be undertaken in the state are also reviewed. In the case of certain projects, additional evaluation and demonstration must be made under the general conformity provisions of state and federal law.

3(b) Ozone Attainment Area. According to the DEQ Air Division, the project site is located in an ozone attainment area.

3(c) Requirements.

3(c)(i) Fugitive Dust. During land-disturbing activities, fugitive dust must be kept to a minimum by using control methods outlined in 9VAC5-50-60 *et seq.* of the Regulations for the Control and Abatement of Air Pollution. These precautions include, but are not limited to, the following:

- Use, where possible, water or suitable chemicals for dust control during the proposed demolition and construction operations and from material stockpiles;
- Install and use of hoods, fans and fabric filters to enclose and vent the handling of dusty materials;
- Cover open equipment for conveying materials; and
- Promptly remove spilled or tracked dirt or other materials from paved streets and dried sediments resulting from soil erosion.

3(c)(ii) Open Burning. If project activities include the burning of vegetative debris or use of special incineration devices in the disposal of land clearing debris during construction, this activity must meet the requirements under 9VAC5-130 *et seq.* of the regulations for open burning, and it may require a permit. The regulations provide for, but do not require, the local adoption of a model ordinance concerning open burning. Contact officials with Accomack County to determine what local requirements, if any, exist.

4. Chesapeake Bay Preservation Areas. The FCD (Appendix B, page 13) states that Wallops Island is excluded from Accomack County's Chesapeake Bay Preservation Area.

4(a) Agency Jurisdiction. Effective July 1, 2013, the DEQ Water Division (WD) Office of Stormwater Management (OSM) administers the coastal lands management enforceable policy of the VCP, which is governed by the Chesapeake Bay Preservation Act and Chesapeake Bay Preservation Area Designation and Management Regulations (Regulations).

4(b) Agency Findings. The DEQ Water Division OSM states that the Wallops Island facility is located along the Atlantic Ocean shoreline. Accomack County has extended

the Chesapeake Bay Preservation Areas (CBPAs) to include the Atlantic Ocean watershed. However, the county did not designate CBPAs for federally-owned lands. As the project is located outside of the local CBPA designation and outside of the Chesapeake Bay watershed, there are no requirements for compliance with the Chesapeake Bay Preservation Act for this project.

5. Erosion and Sediment Control, and Stormwater Management. The EA (page 3-80) indicates that appropriate erosion and sediment controls and stormwater management measures will be implemented.

5(a) Agency Jurisdiction. Effective July 1, 2013, the DEQ Water Division OSM administers the non-point source pollution control enforceable policy, which is governed by the Virginia Erosion and Sediment Control Law and Regulations (VESCL&R) and the Virginia Stormwater Management Law and Regulations (VSWML&R).

5(b) Erosion and Sediment Control and Stormwater Management Project-Specific Plans. According to the DEQ Water Division, the Navy and its authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with VESCL&R and VSWML&R, including coverage under the general permit for stormwater discharge from construction activities, and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act-Section 313, federal consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbing activities that result in the total land disturbance of equal to or greater than 10,000 square feet would be regulated by VESCL&R.

Accordingly, the Navy must prepare and implement an ESC plan to ensure compliance with state law and regulations. The ESC plan is submitted to the DEQ regional office that serves the area where the project is located for review for compliance. The Navy is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy (Reference: VESCL 62.1-44.15 *et seq.*).

5(c) General Permit for Stormwater Discharges from Construction Activities (VAR10). DEQ is responsible for the issuance, denial, revocation, termination and enforcement of the Virginia Stormwater Management Program (VSMP) General Permit for Stormwater Discharges from Construction Activities related to municipal separate storm sewer systems (MS4s) and construction activities for the control of stormwater discharges from MS4s and land disturbing activities under the Virginia Stormwater Management Program.

The operator or owner of construction activities involving land-disturbing activities equal to or greater than 1 acre is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project specific stormwater pollution prevention plan (SWPPP). The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit and the SWPPP must address water quality and quantity in accordance with the Virginia Stormwater Management Program (VSMP) Permit Regulations. General information and forms are available at *www.deq.virginia.gov/Programs/Water/Stormwater Management/VSMPPermits.aspx*.

6. Solid and Hazardous Waste Management. The EA (page 3-67) addresses solid waste and hazardous waste management issues.

6(a) Agency Jurisdiction. Solid and hazardous wastes in Virginia are regulated by DEQ, the Virginia Waste Management Board and the U.S. Environmental Protection Agency. They administer programs created by the federal Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response Compensation and Liability Act (CERCLA), commonly called Superfund, and the Virginia Waste Management Act. DEQ administers regulations established by the Virginia Waste Management Board and reviews permit applications for completeness and conformance with facility standards and financial assurance requirements. All Virginia localities are required, under the Solid Waste Management Planning Regulations, to identify the strategies they will follow on the management of their solid wastes to include items such as facility siting, long-term (20-year) use and alternative programs such as materials recycling and composting.

6(b) Database Search. The DEQ Division of Land Protection and Revitalization (DLPR) (formerly the Waste Division) conducted a review of a Geographic Information System database and determined that there were waste sites located within the same zip code of the project site:

RCRA/Hazardous Waste Sites

- ID# VAR000508770 – Assateague Island National Seashore Toms Cove, Chincoteague Road, Wallops Island, VA 23337. Contact: Richard Barrett at 410-641-1443.
- ID# VAR000518811 – BAYSYS Techonologies LLC, Fulton Street, Wallops Island, VA 23337. Contact: Dominick Scott at 757-787-7668, extension 2017.
- ID# VAD980555387 – Chesapeake & Potomac Telephone, Wallops Island, Wallops Station, VA 23337. Contact: Bartley Terry at 202-392-8284.
- ID# VAQR000007211 – Cropper USAR Ctr, Kearsarg Circle, Wallops Island, VA 23337. Contact: John Pontier at 301-677-7593.

- ID# VAR000518845 – Mid-Atlantic Regional Spaceport, 34200 Fulton Street, Wallops Island, VA 23337. Contact: Richard D. Baldwin at 757-824-2335.
- ID# VA7800020888 – NASA GSFC Wallops Flight Facility, Fulton Street, Wallops Island, VA 23337. Contact: Joel T. Mitchell at 757-824-1127.
- ID# VA8800010763 – NASA GSFC Wallops Flight Facility, Fulton Street, Main Base, Wallops Island, VA 23337. Contact Joel T. Mitchell at 757-824-1127.
- ID# VAR000518829 – Navy-Surface Combat Systems Center Buildings R-2, R-30, R-20, 30 Battlegroup Way, Wallops Island, VA 23337. Contact: Marilyn C. Ailes at757-824-2082.
- ID# VAR000518837 – Navy-Surface Combat Systems Center Buildings V-10/20/21, V-3, V-24, Artist, Seaside Road, Wallops Island, VA 23337. Contact: Marilyn C. Ailes at757-824-2082.
- ID# VAR000518803 – NOAA, Wallops Command and Data Acquisition Station, 35663 Chincoteague Road, Wallops Island, VA 23337. Contact: Stephen R. Howard at 757-824-7311.
- ID# VAR000509240 – Wallops FUDS Program, NASA Wallops Flight Facility, Wallops Island, VA 23337. Contact: George H. Mears at 757-201-7181.

CERLCLA Sites

- ID #VAN000306904 – Chincoteague Naval Auxiliary Air Station, Wallops Island, Accomack County. Status: Not NPL.
- ID #VA8800010763 – NASA Wallops Island, Accomack County. Status: Not NPL.
- ID #VAN000306905 – Naval Aviation Ordnance Test Station, Wallops Island, Accomack County. Status: Not NPL.

Formerly Used Defense Site (FUDS)

- Wallops Island – ID#CO3VA0301. Federal ID# VA9799F1697.

Petroleum Releases

- A number of petroleum release events were identified at the Wallops Island site but proximity to the project site was not determined.

6(c) Petroleum Storage Tanks. DEQ TRO states that there has been one reported release at or adjacent to the proposed project. This is a closed case at Building V10, PC#1995-2405.

6(d) Requirements.

- Report evidence of a petroleum release, if discovered during construction of this

project, to DEQ TRO as authorized by Virginia Code Section 62.1-44.34.8 through 9 and 9VAC25-580-10 *et seq*.

- Characterize and properly dispose of petroleum-contaminated soils and ground water generated during the construction of this project.
- Report the installation or use of any portable aboveground petroleum storage tank (>660 gallons, 9VAC25-91-10 *et seq.*) *for more than 120 days* to DEQ TRO.
- Any soil/sediment that is suspected of contamination or wastes that are generated during construction-related activities must be tested and disposed of in accordance with applicable federal, state, and local laws and regulations.

6(e) Agency Recommendations.

- DEQ encourages all construction projects and facilities to implement pollution prevention principles, including:
  - the reduction, reuse and recycling of all solid wastes generated; and
  - the minimization and proper handling of generated hazardous wastes.
- Review the DEQ petroleum release database, which is available online at *www.deq.virginia.gov/mapper_ext/default.aspx?service=public/wimby*, to determine if there is the potential for contaminated soils in the project area.

7. Natural Heritage Resources. The EA (page 3-96) does not indicate that significant habitat would be affected.

7(a) Agency Jurisdiction.

7(a)(i) Natural Heritage Resources. The mission of the Department of Conservation and Recreation (DCR) is to conserve Virginia's natural and recreational resources. DCR supports a variety of environmental programs organized within seven divisions including the DNH. DNH's mission is conserving Virginia's biodiversity through inventory, protection, and stewardship. The Virginia Natural Area Preserves Act, 10.1-209 through 217 of the *Code of Virginia*, was passed in 1989 and codified DCR's powers and duties related to statewide biological inventory: maintaining a statewide database for conservation planning and project review, land protection for the conservation of biodiversity, and the protection and ecological management of natural heritage resources (the habitats of rare, threatened and endangered species, significant natural communities, geologic sites, and other natural features).

7(a)(ii) Threatened and Endangered Plant and Insect Species. The Endangered Plant and Insect Species Act of 1979, Chapter 39, §3.1-102- through 1030 of the *Code of Virginia*, as amended, authorizes the Virginia Department of Agriculture and Consumer Services (VDACS) to conserve, protect and manage endangered species of plants and insects. VDACS Virginia Endangered Plant and Insect Species Program personnel cooperates with the FWS, DCR DNH and other agencies and organizations

on the recovery, protection or conservation of listed threatened or endangered species and designated plant and insect species that are rare throughout their worldwide ranges. In those instances where recovery plans, developed by FWS, are available, adherence to the order and tasks outlined in the plans should be followed to the extent possible. VDACS has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act. Under a Memorandum of Agreement established between the VDACS and DCR, DCR has the authority to report for VDACS on state-listed plant and insect species.

7(b) Agency Finding. The Biotics Data System documents the presence of natural heritage resources in the project area. However, due to the scope of the activity and the distance to the resources, DCR DNH does not anticipate that this project will adversely impact these natural heritage resources.

7(c) Threatened and Endangered Plant and Insect Species. DCR states that the current activity will not affect any documented state-listed plant and insect species.

7(d) Natural Area Preserves. DCR states that there are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

7(e) Agency Recommendation. Contact DCR DNH to re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

8. Wildlife Resources. The EA (page 3-123) states that potential direct impacts onshore on protected species include disturbances due to construction and exposure to noise, light, and magnetic fields during testing. Potential direct impacts on near shore protected species include military expended materials detaching from projectiles and falling into the water. Indirect impacts include potential air quality impacts onshore and potential water and sediment quality impacts in the near shore area.

8(a) Agency Jurisdiction. The Department of Game and Inland Fisheries (DGIF), as the Commonwealth's wildlife and freshwater fish management agency, exercises enforcement and regulatory jurisdiction over wildlife and freshwater fish, including state- or federally-listed endangered or threatened species, but excluding listed insects (Virginia Code Title 29.1). DGIF is a consulting agency under the U.S. Fish and Wildlife Coordination Act (16 U.S.C. sections 661 *et seq.*) and provides environmental analysis of projects or permit applications coordinated through DEQ and several other state and federal agencies. DGIF determines likely impacts upon fish and wildlife resources and habitat, and recommends appropriate measures to avoid, reduce or compensate for those impacts.

8(b) Agency Findings. According to DGIF's records, federally-listed endangered leatherback sea turtles, federally-listed threatened loggerhead sea turtles and a colonial

waterbird colony containing Virginia WAP Tier IV Forster's terns have been documented from the project area. It appears that the proposed project sites have been disturbed and improved. Therefore, DGIF does not anticipate the construction of the facility on Wallops is likely to result in adverse impacts upon these species and resources.

8(c) Agency Recommendations.

DGIF has the following recommendations to protect sea turtles and the colonial waterbird colony:

- Coordinate with the FWS regarding possible impacts upon leatherback sea turtles, loggerhead sea turtles and a colonial waterbird colony (if not already completed).
- Coordinate with the FWS regarding possible impacts facility operation (projectile launching) may have upon migrating birds, nesting birds, nesting sea turtles, and marine mammals known from nearby sites and adjacent waters (if not already completed).
- Avoid and minimize impacts upon such species to the greatest extent possible.

To minimize overall impacts to wildlife and natural resources, DGIF offers the following comments about development activities:

- Avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable.
- Maintain undisturbed naturally vegetated buffers of at least 100 feet in width around all on-site wetlands and on both sides of all perennial and intermittent streams
- Design and replicate stormwater controls to replicate and maintain the hydrographic condition of the site prior to the change in landscape. This should include, but not be limited to, utilizing bioretention areas, and minimizing the use of curb and gutter in favor of grassed swales. Bioretention areas (also called rain gardens) and grass swales are components of Low Impact Development (LID). They are designed to capture stormwater runoff as close to the source as possible and allow it to slowly infiltrate into the surrounding soil. They benefit natural resources by filtering pollutants and decreasing downstream runoff volumes.
- Adhere to a time-of-year restriction from March 15 through August 15 of any year for all tree removal and ground clearing to protect nesting resident and migratory songbirds.
- Adhere to erosion and sediment controls during ground disturbance.

8(d) Additional Information. DGIF maintains a database (*http://vafwis.org/fwis/)* of wildlife locations, including threatened and endangered species, trout streams and anadromous fish waters.

9. Historic Structures and Architectural Resources. The EA (page 3-61) states that that project would not affect historic or archaeological resources.

9(a) Agency Jurisdiction. The Department of Historic Resources (DHR) conducts reviews of projects to determine their effect on historic structures or cultural resources under its jurisdiction. DHR, as the designated Historic Preservation Office for the Commonwealth, ensures that federal actions comply with Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, and its implementing regulation at 36 Code of Federal Regulations Part 800. The NHPA requires federal agencies to consider the effects of federal projects on properties that are listed or eligible for listing on the National Register of Historic Places. Section 106 also applies if there are any federal involvements, such as licenses, permits, approvals or funding. DHR also provides comments to DEQ through the state environmental impact report review process.

9(b) Agency Comments. DHR states that additional information is necessary before it can make a determination. See attached the information for details.

9(c) Requirement. Consult directly with DHR, as necessary, pursuant to Section 106 of the National Historic Preservation Act (as amended) and its implementing regulations codified at 36 CFR Part 800 which require federal agencies to consider the effects of their undertakings on historic properties.

10. Water Supply.

10(a) Agency Jurisdiction. The Virginia Department of Health (VDH) Office of Drinking Water (ODW) reviews projects for the potential to impact public drinking water sources (groundwater wells, springs and surface water intakes). The VDH ODW administers both federal and state laws governing waterworks operation.

10(b) Agency Comment. VDH ODW did not respond to DEQ's request for comments. VDH ODW's comments on the federal consistency determination for the proposed project are reiterated below.

10(c) Agency Findings. VDH ODW states there are no apparent impacts from the proposed project. There are no groundwater wells within a 1-mile radius of the project site. No surface water intakes are located within a 5-mile radius of the project site. The project is not within Zone 1 (up to 5 miles into the watershed) or Zone 2 (greater than 5 miles into the watershed) of any public surface water sources.

Contact VDH (Barry E. Matthews at 804-864-7515) for additional information if necessary.

11. Aviation Impacts. The EA (page ES-17) states that the project will adhere to airfield safety zones.

11(a) Agency Jurisdiction. The Virginia Department of Aviation (DOAv) is a state agency that plans for the development of the state aviation system; promotes aviation; grants aircraft and airports licenses; and provides financial and technical assistance to cities, towns, counties and other governmental subdivisions for the planning, development, construction and operation of airports, and other aviation facilities.

11(b) Agency Findings. DOAv states that it has no objection to the proposed project.

11(c) Agency Recommendation. DOAv recommends that the Navy undertake clearing precautions in the hazard area for aircraft.

Contact DOAv (Scott Denny at *Scott.Denny@doav.virginia.gov*) for additional information if necessary.

12. Pollution Prevention. DEQ advocates that principles of pollution prevention be used in all construction projects as well as in facility operations. Effective siting, planning and on-site best management practices will help to ensure that environmental impacts are minimized. However, pollution prevention techniques also include decisions related to construction materials, design and operational procedures that will facilitate the reduction of wastes at the source.

12(a) Agency Recommendations. We have several pollution prevention recommendations that may be helpful during the construction:

- Consider development of an effective Environmental Management System (EMS). An effective EMS will ensure that the proposed facility is committed to minimizing its environmental impacts, setting environmental goals and achieving improvements in its environmental performance. DEQ offers EMS development assistance and recognizes facilities with effective Environmental Management Systems through its Virginia Environmental Excellence Program.
- Consider environmental attributes when purchasing materials. For example, the extent of recycled material content, toxicity level and amount of packaging should be considered and can be specified in purchasing contracts.
- Consider contractors' commitment to the environment when choosing contractors. Specifications regarding raw materials and construction practices

can be included in contract documents and requests for proposals.

- Choose sustainable materials and practices for infrastructure and building construction and design. These could include asphalt and concrete containing recycled materials, and integrated pest management in landscaping, among other things.

The DEQ Office of Pollution Prevention provides information and technical assistance relating to pollution prevention techniques. If interested, please contact DEQ (Sharon Baxter at 804-698-4344).

13. Local and Regional Comments. As customary, DEQ invited Accomack County and the Accomack-Northampton Planning District Commission (PDC) to comment on the project.

13(a) Jurisdiction. In accordance with the Code of Virginia, Section 15.2-4207, planning district commissions encourage and facilitate local government cooperation and state-local cooperation in addressing, on a regional basis, problems of greater than local significance. The cooperation resulting from this is intended to facilitate the recognition and analysis of regional opportunities and take account of regional influences in planning and implementing public policies and services. Planning district commissions promote the orderly and efficient development of the physical, social and economic elements of the districts by planning, and encouraging and assisting localities to plan for the future.

13(b) Local Comments. Accomack County indicates that the proposed project does not conflict with local laws and policies (detailed comments attached).

13(c) Regional Comments. The Accomack-Northampton PDC did not respond to DEQ's request for comments.

REGULATORY AND COORDINATION NEEDS

1. Water Quality and Wetlands. If the project changes to include impacts to wetlands or surface waters, VWP Permit Program approval may be required from DEQ pursuant to Virginia Code §62.1-44.15:20 *et seq.* and Virginia regulations 9VAC25-210-10 *et seq.* Permitting action commences with the receipt of a complete JPA. A JPA may be obtained from and submitted to the VMRC, which serves as a clearinghouse for the joint permitting process involving the VMRC, DEQ, Corps and local wetlands boards. Contact VMRC (Hank Badger *at Hank.Badger@mrc.virginia.gov*) regarding the submission of a JPA. Contact DEQ TRO (Bert Parolari at 757-518-2166 or *Bert.Parolari@deq.virginia.gov*) for additional information regarding VWP permitting requirements as necessary.

2. Erosion and Sediment Control Plans and General Permit for Stormwater Discharges from Construction Activities.

2(a) Erosion and Sediment Control. According to the DEQ Water Division, clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbing activities that result in the total land disturbance of equal to or greater 10,000 square feet would be regulated by *VESCL&R.* Accordingly, the Navy must prepare and implement an ESC plan to ensure compliance with state law and regulations. The Navy is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy (Reference: VESCL 62.1-44.15 *et seq.*). Submit the plan and direct questions to DEQ TRO (Noah Hill at 757-518-2024 or *Noah.Hill@deq.virginia.gov*).

2(b) General Permit for Stormwater Discharges from Construction Activities (VAR10). The operator or owner of a construction activity involving land disturbance of equal to or greater than 1 acre is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project specific stormwater pollution prevention plan (SWPPP). The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit and the SWPPP must address water quality and quantity in accordance with the *Virginia Stormwater Management Program (VSMP) Permit Regulations.* General information and registration forms for the General Permit are available at *www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/ConstructionGeneralPermit.aspx*. For additional information, contact the DEQ Water Division (Holly Sepety at *Holly.Sepety@deq.virginia.gov*).

3. Air Quality Regulations. The following regulations may apply during construction:

- fugitive dust and emissions control (9VAC5-50-60 *et seq.*); and

- open burning restrictions (9VAC5-130 *et seq.*).

Contact officials with Accomack County for information on any local requirements pertaining to open burning.

Contact DEQ TRO (Troy Breathwaite at *Troy.Breathwaite@deq.virginia.gov* or 757-518-2006) for additional information on air regulations if necessary.

4. Solid and Hazardous Wastes. All solid waste, hazardous waste and hazardous materials must be managed in accordance with all applicable federal, state and local environmental regulations.

These state laws and regulations may apply:

- Virginia Waste Management Act (*Code of Virginia* Section 10.1-1400 *et seq.*);
- Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC20-60);
- Virginia Solid Waste Management Regulations (VSWMR) (9VAC20-81); and
- Virginia Regulations for the Transportation of Hazardous Materials (9VAC20-110).

These federal laws and regulations may apply:

- Resource Conservation and Recovery Act (RCRA) (42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations); and
- U.S. Department of Transportation Rules for Transportation of Hazardous materials (49 Code of Federal Regulations Part 107).

Contact DEQ TRO (Milt Johnston at *Milt.Johnston@deq.virginia.gov* or 757-518-2151) for additional information on waste management.

4(a) Coordination.

- Report evidence of a new petroleum release, if discovered during construction of this project, to DEQ TRO (Lynne Smith at 757-518-2055 or Gene Siudyla at 757-518-2117).
- Report the installation or use of any portable aboveground petroleum storage tank (>660 gallons, 9VAC25-91-10 *et seq.*) *for more than 120 days* to DEQ TRO (DEQ TRO Petroleum Storage Tank Program, Attention: Tom Madigan, 5636 Southern Blvd., Virginia Beach, Virginia 23462, Phone: 757-518-2115).

5. Natural Heritage Resources.

- Contact the DCR DNH (804-371-2708) to re-submit project information and a map for an update on natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

6. Wildlife Resources and Protected Species.

- DGIF's database may be accessed at *http://vafwis.org/fwis/* or by contacting DGIF (Shirl Dressler at 804-367-6913).
- Contact DGIF (Amy Ewing at *Amy.Ewing@dgif.virginia.gov*) for additional information regarding its recommendations as necessary.
- Coordinate with the FWS (Cindy Schulz at *cindy_schulz@fws.gov* or 804-824-2426) regarding possible impacts upon leatherback sea turtles, loggerhead sea turtles and a colonial waterbird colony (if not already completed).
- Coordinate with the FWS regarding possible impacts facility operation (projectile launching) may have upon migrating birds, nesting birds, nesting sea turtles, and marine mammals known from nearby sites and adjacent waters (if not already completed).

7. Historic Resources. Consult directly with DHR (Marc Holma at *Marc.Holma@dhr.virginia.gov*) pursuant to Section 106 of the National Historic Preservation Act (as amended) and its implementing regulations codified at 36 CFR Part 800 which require federal agencies to consider the effects of their undertakings on historic properties.

8. Marine Navigation. Notify the U.S. Coast Guard (703-313-5900) when activities may affect marine navigation.

Thank you for the opportunity to comment on this EA. The detailed comments of reviewers are attached. If you have questions, please do not hesitate to call me at (804) 698-4325 or Julia Wellman at (804) 698-4326.

Sincerely,

Ellie Irons, Program Manager
Environmental Impact Review

Enclosures

cc: Steven B. Miner, Accomack County
Elaine K.N. Meil, Accomack-Northampton PDC

ec: Amy Ewing, DGIF
Robbie Rhur, DCR
Barry Matthews, VDH
Steve Coe, DEQ DLPR
Kotur Narasimhan, DEQ DAPC
Larry Gavan, DEQ
Daniel Moore, DEQ
Holly Sepety, DEQ
Shantelle Nicholson, DEQ
Cindy Keltner, DEQ NRO
Roger Kirchen, DHR
Marc Holma, DHR
Pam Mason, VIMS
George Badger, MRC
Jeanne Hartzell, Navy

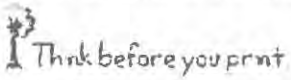
Wellman, Julia (DEQ)

From: Ewing, Amy (DGIF)
Sent: Thursday, June 26, 2014 1:06 PM
To: Wellman, Julia (DEQ)
Cc: Cason, Gladys (DGIF)
Subject: ESSLog# 34628_14-038F_Wallops

Julie,
Our previous (April 2014) comments are valid for this review request.

Thanks, Amy

Amy Ewing ☯ Environmental Services Biologist/FWIS Manager ☯ VA Dept. of Game and Inland Fisheries ☯ 4010 West Broad St. Richmond, VA 23230 ☯ 804-367-2211 ☯ www.dgif.virginia.gov



Wellman, Julia (DEQ)

From: Ewing, Amy (DGIF)
Sent: Tuesday, April 15, 2014 11:26 AM
To: Wellman, Julia (DEQ)
Cc: Cason, Gladys (DGIF); nhreview (DCR)
Subject: ESSLog# 34628_14-038F_Navy testing of hyper velocity projectiles

We have reviewed the subject project that proposes to construct and operate a hypervelocity projectile testing facility at NASA's Wallops Island Flight Facility in Accomac County, VA.

According to our records, federal Endangered leatherback sea turtles, federal Threatened loggerhead sea turtles and a colonial waterbird colony containing Virginia WAP Tier IV Forster's terns have been documented from the project area. It appears the possible sites of facility location are already disturbed and improved. Therefore, we do not anticipate the construction of the facility on Wallops is likely to result in adverse impacts upon these species and resources. However, we recommend coordination with the USFWS regarding possible impacts upon these species. Further, we recommend close coordination with the USFWS regarding possible impacts facility operation (projectile launching) may have upon migrating birds, nesting birds, nesting sea turtles, and marine mammals known from nearby sites and adjacent waters. We recommend that impacts upon such species be avoided or minimized to the greatest extent possible.

This project is located within 2 miles of a documented occurrence of a state or federal threatened or endangered plant or insect species and/or other Natural Heritage coordination species. Therefore, we recommend coordination with VDCR-DNH regarding the protection of these resources.

To minimize overall impacts to wildlife and our natural resources, we offer the following comments about development activities: We recommend that the applicant avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable. We recommend maintaining undisturbed naturally vegetated buffers of at least 100 feet in width around all on-site wetlands and on both sides of all perennial and intermittent streams

We recommend that the stormwater controls for this project be designed to replicate and maintain the hydrographic condition of the site prior to the change in landscape. This should include, but not be limited to, utilizing bioretention areas, and minimizing the use of curb and gutter in favor of grassed swales. Bioretention areas (also called rain gardens) and grass swales are components of Low Impact Development (LID). They are designed to capture stormwater runoff as close to the source as possible and allow it to slowly infiltrate into the surrounding soil. They benefit natural resources by filtering pollutants and decreasing downstream runoff volumes.

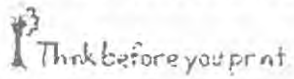
We recommend that all tree removal and ground clearing adhere to a time of year restriction protective of resident and migratory songbird nesting from March 15 through August 15 of any year.

We recommend adherence to erosion and sediment controls during ground disturbance.

We defer FCD to MRC as this site drains to marine waters.

Thanks, Amy

Amy Ewing ☯ Environmental Services Biologist/FWIS Manager ☯ VA Dept. of Game and Inland Fisheries ☯ 4010 West Broad St. Richmond, VA 23230 ☯ 804-367-2211 ☯ www.dgif.virginia.gov



Molly Joseph Ward
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

600 East Main Street, 24th Floor
Richmond, Virginia 23219
(804) 786-6124

MEMORANDUM

DATE: June 23, 2014

TO: Julia Wellman, DEQ

FROM: Roberta Rhur, Environmental Impact Review Coordinator

SUBJECT: DEQ 14-093F, U.S. Navy Testing of Hypervelocity Projectiles and an Electromagnetic Railgun

Division of Natural Heritage

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

Biotics documents the presence of natural heritage resources in the project area. However, due to the scope of the activity and the distance to the resources, we do not anticipate that this project will adversely impact these natural heritage resources.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Gladys Cason (804-367-0909 or Gladys.Cason@dgif.virginia.gov).

This project is located within 2 miles of documented occurrences of state and federally listed animals. Therefore, DCR recommends coordination with the U.S. Fish and Wildlife Service (USFWS) and VDGIF, Virginia's regulatory authority for the management and protection of these species to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570).

The remaining DCR divisions have no comments regarding the scope of this project. Thank you for the opportunity to comment.

Cc: Amy Ewing, VDGIF
Troy Andersen, USFWS

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
Fax: 804-698-4019 - TDD (804) 698-4021
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

MEMORANDUM

TO: Daniel Moore

FROM: Shawn Smith, Chesapeake Bay Local Assistance

DATE: June 13, 2014

SUBJECT: DEQ 14-093F Wallops Island Rail Gun, Accomack County

The project proposes to construct a Hypervelocity Projectiles & Electromagnetic Railgun at NASA Wallops Flight Facility in Accomack County. Wallops Island facility is located along the Atlantic Ocean shoreline. Accomack County has extended the Chesapeake Bay Preservation Areas to include the Atlantic Ocean watershed, however, the County did not designate CBPAs for federally owned lands. As the project is located outside of the local CBPA designation and outside of the Chesapeake Bay watershed, there are no requirements for compliance with the Bay Act for this project.

VIRGINIA DEPARTMENT OF
ENVIRONMENTAL QUALITY

MEMORANDUM

TO: Julia Wellman, Environmental Program Planner

FROM: Steve Coe, Division of Land Protection & Revitalization Review Coordinator

DATE: June 18, 2014

COPIES: Sanjay Thirunagari, Division of Land Protection & Revitalization Review Manager; file

SUBJECT: Environmental Impact Report; 14-093F DOD Navy Testing Hypervelocity Projectiles and Electromagnetic Railgun at Wallops Island

The Division of Land Protection and Revitalization (DLPR) has completed its review of the Environmental Impact Review Request for the DOD Navy Testing Hypervelocity Projectiles and Electromagnetic Railgun operation at Wallops Island in Accomack County, Virginia. DEQ's DLPR originally reviewed this project on April 1, 2014. We have the following comments concerning the waste issues associated with this project.

Solid and hazardous waste issues were addressed in this report. The report did not include a search of waste-related data bases. The Waste Division staff conducted a cursory review of its data files including a GIS database search, and was able to identify possible waste sites that would impact or be impacted by the proposed project.

Facility waste sites of concern were located within the same zip code of the proposed project under zip code 23337, but proximity to the project site was not determined.

RCRA/Hazardous Waste Facilities – 11 sites were identified in zip code 23337, but proximity to the project site was not determined.

1) ID# VAR000508770 – Assateague Island National Seashore Toms Cove, Chincoteague Road, Wallops Island, VA 23337. Contact: Richard Barrett at 410-641-1443.
2) ID# VAR000518811 – BAYSYS Techonologies LLC, Fulton Street, Wallops Island, VA 23337. Contact: Dominick Scott at 757-787-7668, extension 2017.
3) ID# VAD980555387 – Chesapeake & Potomac Telephone, Wallops Island, Wallops Station, VA 23337. Contact: Bartley Terry at 202-392-8284.
4) ID# VAQR000007211 – Cropper USAR Ctr, Kearsarg Circle, Wallops Island, VA 23337. Contact: John Pontier at 301-677-7593.
5) ID# VAR000518845 – Mid-Atlantic Regional Spaceport, 34200 Fulton Street, Wallops Island, VA 23337. Contact: Richard D. Baldwin at 757-824-2335.

6) ID# VA7800020888 – NASA GSFC Wallops Flight Facility, Fulton Street, Wallops Island, VA 23337. Contact: Joel T. Mitchell at 757-824-1127.
7) ID# VA8800010763 – NASA GSFC Wallops Flight Facility, Fulton Street, Main Base, Wallops Island, VA 23337. Contact Joel T. Mitchell at 757-824-1127.
8) ID# VAR000518829 – Navy-Surface Combat Systems Center Buildings R-2, R-30, R-20, 30 Battlegroup Way, Wallops Island, VA 23337. Contact: Marilyn C. Ailes at757-824-2082.
9) ID# VAR000518837 – Navy-Surface Combat Systems Center Buildings V-10/20/21, V-3, V-24, Artist, Seaside Road, Wallops Island, VA 23337. Contact: Marilyn C. Ailes at757-824-2082.
10) ID# VAR000518803 – NOAA, Wallops Command and Data Acquisition Station, 35663 Chincoteague Road, Wallops Island, VA 23337. Contact: Stephen R. Howard at 757-824-7311.
11) ID# VAR000509240 – Wallops FUDS Program, NASA Wallops Flight Facility, Wallops Island, VA 23337. Contact: George H. Mears at 757-201-7181.

CERCLA Sites – three, but proximity to the project site was not determined

1) ID #VAN000306904 – Chincoteague Naval Auxiliary Air Station, Wallops Island, Accomack County. Status: Not NPL.
2) ID #VA8800010763 – NASA Wallops Island, Accomack County. Status: Not NPL.
3) ID #VAN000306905 – Naval Aviation Ordnance Test Station, Wallops Island, Accomack County. Status: Not NPL.

The following websites may prove helpful in locating additional information for these identification numbers: http://www.epa.gov/superfund/sites/cursites/index.htm or http://www.epa.gov/enviro/html/rcris/rcris_query_java.html.

FUDs Site – one

Wallops Island – ID#CO3VA0301. Federal ID# VA9799F1697.

Solid Waste Facilities – none

VRP Sites - none

Petroleum Release events – A number of petroleum release events were identified at the Wallops Island site, but proximity to the project site was not determined. Project engineer should review the database to determine if there is the potential for contaminated soils in the project area.

Example: ID# 19952405 – NASA Wallops Flight Facility, Bldg V10, Wallops Island, Virginia 23337. Event Date: 8/10/2007. Status: Closed.

(Note: Dates above are the latest PC Database edit dates of the specific PC Case Nos.)

Please note that the DEQ's Petroleum Contamination (PC) case files of the PC Case Nos., in zip code 23337 and any identified petroleum releases (per the example above) should be evaluated by the project engineer or manager to establish the exact location of the release and the nature and extent of the petroleum release and the potential to impact the proposed project. The facility representative should contact the DEQ's Valley Regional Office for further information and the administrative records of the PC cases which are in close proximity to the proposed project.

NOTE: In any construction or demolition project, the proper management of wastes (solid or hazardous) generated is a priority. The information below provides waste management guidance for the project.

General Comments

Soil, Sediment, and Waste Management

Any soil that is suspected of contamination or wastes that are generated must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations. Some of the applicable state laws and regulations are: Virginia Waste Management Act, Code of Virginia Section 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60); Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-81); Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal laws and regulations are: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous materials, 49 CFR Part 107.

Asbestos and/or Lead-based Paint

All structures being demolished/renovated/ removed should be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to demolition. If ACM or LBP are found, in addition to the federal waste-related regulations mentioned above, State regulations 9VAC 20-81-620 for ACM and 9VAC 20-60-261 for LBP must be followed. Questions may be directed to Ms. Lisa Silvia at the Tidewater Regional Office (757-518-2175).

Pollution Prevention – Reuse - Recycling

Please note that DEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All generation of hazardous wastes should be minimized and handled appropriately.

If you have any questions or need further information, please contact Steve Coe, Environmental Specialist, at (804) 698-4029.

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR PROGRAM COORDINATION

ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY

TO: Julia H. Wellman **DEQ - OEIA PROJECT NUMBER: 14 – 093F**

PROJECT TYPE: ☐ STATE EA / EIR **X FEDERAL EA / EIS** ☐ SCC

☐ CONSISTENCY DETERMINATION

PROJECT TITLE: U. S. NAVY TESTING OF HYPERVELOCITY PROJECTILES AND AN ELECTROMAGNETIC RAILGUN

PROJECT SPONSOR: DOD / DEPARTMENT OF THE NAVY

PROJECT LOCATION: **X** **OZONEATTAINMENT AREA**

REGULATORY REQUIREMENTSMAY BE APPLICABLE TO: **X** **CONSTRUCTION**
X **OPERATION**

STATE AIR POLLUTION CONTROL BOARD REGULATIONS THAT MAY APPLY:

1. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 E – STAGE I
2. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 F – STAGE II Vapor Recovery
3. ☐ 9 VAC 5-45-780 et seq. – Asphalt Paving operations
4. **X** **9 VAC 5-130 et seq. – Open Burning**
5. **X** **9 VAC 5-50-60 et seq. Fugitive Dust Emissions**
6. ☐ 9 VAC 5-50-130 et seq. - Odorous Emissions; Applicable to_____
7. ☐ 9 VAC 5-50-160 et seq. – Standards of Performance for Toxic Pollutants
8. ☐ 9 VAC 5-50-400 Subpart_____, Standards of Performance for New Stationary Sources, designates standards of performance for the_____
9. ☐ 9 VAC 5-80-1100 et seq. of the regulations – Permits for Stationary Sources
10. ☐ 9 VAC 5-80-1700 et seq. Of the regulations – Major or Modified Sources located in PSD areas. This rule may be applicable to the _____
11. ☐ 9 VAC 5-80-2000 et seq. of the regulations – New and modified sources located in non-attainment areas
12. ☐ 9 VAC 5-80-800 et seq. Of the regulations – Operating Permits and exemptions. This rule may be applicable to _____

COMMENTS SPECIFIC TO THE PROJECT:

K. S. Narasimhan

(Kotur S. Narasimhan)
Office of Air Data Analysis **DATE: June 6, 2014**

Wellman, Julia (DEQ)

From: Gavan, Larry (DEQ)
Sent: Thursday, June 12, 2014 9:12 AM
To: Wellman, Julia (DEQ)
Subject: RE: NEW PROJECT NAVY 14-093F

Pls. see the comments below.
Thx
L

(a) Agency Jurisdiction. The Department of Environmental Quality (DEQ) administers the *Virginia Erosion and Sediment Control Law and Regulations* (*VESCL&R*) and *Virginia Stormwater Management Law and Regulations* (*VSWML&R*).

(b) Erosion and Sediment Control and Stormwater Management Plans. The Applicant and its authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with *VESCL&R* and *VSWML&R*, including coverage under the general permit for stormwater discharge from construction activities, and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act-Section 313, federal consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbing activities that result in the total land disturbance of equal to or greater than 10,000 square feet (2,500 square feet in Chesapeake Bay Preservation Area) would be regulated by *VESCL&R*. Accordingly, the Applicant must prepare and implement an erosion and sediment control (ESC) plan to ensure compliance with state law and regulations. The ESC plan is submitted to the DEQ Regional Office that serves the area where the project is located for review for compliance. The Applicant is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy. [Reference: VESCL 62.1-44.15 et seq.]

From: Fulcher, Valerie (DEQ)
Sent: Thursday, June 05, 2014 3:13 PM
To: dgif-ESS Projects (DGIF); Rhur, Robbie (DCR); odwreview (VDH); Coe, Stephen (DEQ); Narasimhan, Kotur (DEQ); Gavan, Larry (DEQ); Moore, Daniel (DEQ); Sepety, Holly (DEQ); Nicholson, Shantelle (DEQ); Keltner, Cindy (DEQ); Kirchen, Roger (DHR); mason@vims.edu; Watkinson, Tony (MRC); Meil, Elaine; administration@co.accomack.va.us; Denny, S. Scott (DOAV)
Cc: Wellman, Julia (DEQ)
Subject: NEW PROJECT NAVY 14-093F

Good afternoon - attached is a new EIR review request/project:

NAVY: U.S. Navy Testing of Hypervelocity Projectiles and an Electromagnetic Railgun (Draft Environmental Assessment), Accomack County DEQ #14-093F

You can access the document at the link below. Please note that the document takes a (long!) time to download!

http://www.navsea.navy.mil/nswc/dahlgren/RANGE/Railgun_Environmental_Assessment.pdf
DEQ staff can access the document in the EIR folder (under the "T" drive((it's called "Navy NASA, etc.").

The due date for comments is JUNE 23, 2014. You can send your comments either directly to Julia by email (Julia.Wellman@deq.virginia.gov), or you can send your comments by regular interagency/U.S. mail to the Department of Environmental Quality, Office of Environmental Impact Review, 629 E. Main St., 6th Floor, Richmond, VA 23219. If you have any questions, please email Julia.

Thanks!

Valerie

Valerie A. Fulcher, CAP-OM, Executive Secretary Sr.

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

629 E. Main St., 6th Floor

Richmond, VA 23219

804/698-4330

804/698-4319 (Fax)

email: Valerie.Fulcher@deq.virginia.gov

www.deq.virginia.gov

DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
ENVIRONMENTAL IMPACT REVIEW COMMENTS

June 23, 2014

PROJECT NUMBER: 14-093F

PROJECT TITLE: US Navy Testing of Hypervelocity Projectiles and an Electromagnetic Railgun

As Requested, TRO staff has reviewed the supplied information and has the following comments:

Petroleum Storage Tank Cleanups:
There has been one reported release near the proposed project. This is a closed case at Building V10, PC#1995-2405. If evidence of a petroleum release is discovered during implementation of this project, it must be reported to DEQ, as authorized by CODE # 62.1-44.34.8 through 9 and 9 VAC 25-580-10 et seq. Contact Mr. Gene Siudyla at (757) 518-2117 or Ms. Lynne Smith at (757) 518-2055. Petroleum-contaminated soils and ground water generated during implementation of this project must be properly characterized and disposed of properly.

Petroleum Storage Tank Compliance/Inspections:
Installation and operation of any regulated petroleum storage tank(s) either AST or UST must also be conducted in accordance with the Virginia Regulations 9 VAC 25-91-10 et seq and / or 9 VAC 25-580-10 et seq. Please contact Tom Madigan (757) 518-2115 for additional details. The installation or use of any portable aboveground petroleum storage tank (>660 gallons - 9 VAC 25-91-10 et seq.) for more than 120 days for this project must be reported to the DEQ Tidewater Regional Office Petroleum Storage Tank Program attn: Tom Madigan - DEQ Tidewater Regional Office - 5636 Southern Blvd., Virginia Beach, VA 23462. Phone (757) 518-2115.

Virginia Water Protection Permit Program (VWPP):
Based on NWI mapping depicted in the EA, the launch area for the preferred Pad 5 alternative does not impact any wetland areas. Provided that the depicted wetland locations at the project site have been verified by the Corps of Engineers, the VWPP has no additional comments.

Air Permit Program :
No comments.

Water Permit Program :
Groundwater - no comments

Water Permits (VPDES/VPA/MS4) - no comments

DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
ENVIRONMENTAL IMPACT REVIEW COMMENTS

June 23, 2014

PROJECT NUMBER: 14-093F

PROJECT TITLE: US Navy Testing of Hypervelocity Projectiles and an Electromagnetic Railgun

Waste Permit Program :
A hazardous waste determination must be made in accordance with the Virginia Hazardous Waste Management Regulations on all solid waste generated during and construction prior to off-site management of the material.

The staff from the Tidewater Regional Office thanks you for the opportunity to provide comments.

Sincerely,

Cindy Keltner
Environmental Specialist II
5636 Southern Blvd.
VA Beach, VA 23462
(757) 518-2167
Cindy.Keltner@deq.virginia.gov

Wellman, Julia (DEQ)

From: Holma, Marc (DHR)
Sent: Thursday, June 12, 2014 10:51 AM
To: Brown, Bethany D CIV NSWCDD, CX8
Cc: Wellman, Julia (DEQ)
Subject: Testing of Hypervelocity Projectiles and an Electromagnetic Railgun at NASA Wallops Flight Facility, Accomack Co. VA (DEQ #14-093; DHR #2014-3110) | e-Mail #00704
Attachments: 2014-3110.pdf

Dear Ms Brown:

Here are our comments regarding the above referenced project. A hardcopy will not follow so please print out the attachment.

Sincerely,

Marc Holma

COMMONWEALTH of VIRGINIA

Department of Historic Resources

Molly Joseph Ward
Secretary of Natural Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan
Director
Tel (804) 367-2323
Fax (804) 367-2391
www.dhr.virginia.gov

MEMORANDUM

DATE: 12 June 2014 **DHR File #** 2014-3110

TO: Ms Bethany Brown
Navy

FROM: Marc E. Holma, Architectural Historian (804) 482-6090
Office of Review and Compliance

PROJECT: Testing of Hypervelocity Projectiles and an Electromagnetic Railgun at NASA Wallops Flight Facility, Accomack County

---

___ This project will have an effect on historic resources. Based on the information provided, the effect will not be adverse.

___ This project will have an adverse effect on historic properties. Further consultation with DHR is needed under Section 106 of the NHPA.

_X_ Additional information is needed before we will be able to determine the effect of the project on historic resources. **Please see attached sheet.**

___ No further identification efforts are warranted. No historic properties will be affected by the project. Should unidentified historic properties be discovered during implementation of the project, please notify DHR.

___ We have previously reviewed this project. Attached is a copy of our correspondence.

___ Other (Please see comments below)

COMMENTS:

Administrative Services
10 Courthouse Ave
Petersburg, VA 23803
Tel (804) 862-6408
Fax (804) 862-6196

Capital Region Office
2801 Kensington Avenue
Richmond, VA 23221
Tel (804) 367-2323
Fax (804) 367-2391

Tidewater Region Office
14415 Old Courthouse Way
2nd Floor
Newport News, VA 23608
Tel (757) 886-2818
Fax (757) 886-2808

Western Region Office
962 Kime Lane
Salem, VA 24153
Tel (540) 387-5443
Fax (540) 387-5446

Northern Region Office
5357 Main Street
PO Box 519
Stephens City, VA 22655
Tel (540) 868-7029
Fax (540) 868-7033

The project location is identified in the project submission as Wallops Island, however, there is no map provided to show where on the island the proposed powder gun and EM rail gun are to be located. Please provide a map showing the project location. According to the application, "The sites being considered for the proposed powder gun and EM rail gun are within areas mapped as having low potential for unknown archaeological resources and can be found in Appendix E of the Final Site-Wide Environmental Assessment, Wallops Flight Facility." Please provide a copy of the map in the Final Site-Wide Environmental Assessment showing archaeological potential, or Figures 20, 21, and 22 of the Final Cultural Resources Assessment of Wallops Flight Facility, which are not included with the document attached to the ePix application.

Wellman, Julia (DEQ)

From: Badger, Hank (MRC)
Sent: Monday, June 09, 2014 9:44 AM
To: Wellman, Julia (DEQ)
Subject: FW: NEW PROJECT NAVY 14-093F
Attachments: NAVY 14-093F ERR FORM.PDF

Julia,
VMRC comments remain the same as before (See #14-038F).
Hank Badger, Environmental Engineer

From: Watkinson, Tony (MRC)
Sent: Friday, June 06, 2014 10:39 AM
To: Badger, Hank (MRC)
Subject: FW: NEW PROJECT NAVY 14-093F

From: Fulcher, Valerie (DEQ)
Sent: Thursday, June 05, 2014 3:13 PM
To: dgif-ESS Projects (DGIF); Rhur, Robbie (DCR); odwreview (VDH); Coe, Stephen (DEQ); Narasimhan, Kotur (DEQ); Gavan, Larry (DEQ); Moore, Daniel (DEQ); Sepety, Holly (DEQ); Nicholson, Shantelle (DEQ); Keltner, Cindy (DEQ); Kirchen, Roger (DHR); mason@vims.edu; Watkinson, Tony (MRC); Meil, Elaine; administration@co.accomack.va.us; Denny, S. Scott (DOAV)
Cc: Wellman, Julia (DEQ)
Subject: NEW PROJECT NAVY 14-093F

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DEQ staff can access the document in the EIR folder (under the "T" drive((it's called "Navy NASA, etc.").

The due date for comments is JUNE 23, 2014. You can send your comments either directly to Julia by email (Julia.Wellman@deq.virginia.gov), or you can send your comments by regular interagency/U.S. mail to the Department of Environmental Quality, Office of Environmental Impact Review, 629 E. Main St., 6th Floor, Richmond, VA 23219. If you have any questions, please email Julia.

Thanks!

Valerie

COMMONWEALTH of VIRGINIA

Marine Resources Commission
2600 Washington Avenue
Third Floor
Newport News, Virginia 23607

March 17, 2014

Ms. Julia H. Wellman
c/o Department. Of Environmental Quality
Office of the Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, Virginia 23219

Re: 14-038F
"Electromagnetic Railgun Wallops Island"

Dear Ms. Wellman:

You have inquired regarding the U. S. Navy's request to install a 5 inch powder gun and an electromagnetic railgun on NASA's Wallops Island in Accomack County. The firing range will extend up to 140 nautical miles into the Atlantic Ocean.

The Marine Resources Commission requires a permit for any activities that encroach upon or over, or take use of materials from the beds of the bays, ocean, rivers and streams, or creeks which are the property of the Commonwealth.

After discussing the proposed project with Tony Watkinson (VMRC's Chief of Habitat Management). We have determined that the proposal is not a fill and will not require a permit from our agency.

For your information, however, there may be gill nets in the area during certain times of the year. Also, there appears to be possible navigational issues leading into Chincoteague Inlet from the south.

If I may be of further assistance, please do not hesitate to contact me at (757) 414-0710.

Sincerely,

George H. Badger, III
Environmental Engineer

Wellman, Julia (DEQ)

From: Denny, S. Scott (DOAV)
Sent: Friday, June 06, 2014 1:37 PM
To: Fulcher, Valerie (DEQ); Wellman, Julia (DEQ)
Subject: RE: NEW PROJECT NAVY 14-093F

Julia:

The Department of Aviation have no additional comments from those in our review letter for DEQ Project 14-038F. Please let us know if you need anything else.

Scott Denny
Senior Aviation Planner
Virginia Department of Aviation

From: Fulcher, Valerie (DEQ)
Sent: Thursday, June 05, 2014 3:13 PM
To: dgif-ESS Projects (DGIF); Rhur, Robbie (DCR); odwreview (VDH); Coe, Stephen (DEQ); Narasimhan, Kotur (DEQ); Gavan, Larry (DEQ); Moore, Daniel (DEQ); Sepety, Holly (DEQ); Nicholson, Shantelle (DEQ); Keltner, Cindy (DEQ); Kirchen, Roger (DHR); mason@vims.edu; Watkinson, Tony (MRC); Meil, Elaine; administration@co.accomack.va.us; Denny, S. Scott (DOAV)
Cc: Wellman, Julia (DEQ)
Subject: NEW PROJECT NAVY 14-093F

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DEQ staff can access the document in the EIR folder (under the "T" drive((it's called "Navy NASA, etc.").

The due date for comments is JUNE 23, 2014. You can send your comments either directly to Julia by email (Julia.Wellman@deq.virginia.gov), or you can send your comments by regular interagency/U.S. mail to the Department of Environmental Quality, Office of Environmental Impact Review, 629 E. Main St., 6th Floor, Richmond, VA 23219. If you have any questions, please email Julia.

Thanks!

Valerie

Valerie A. Fulcher, CAP-OM, Executive Secretary Sr.

Department of Environmental Quality

COMMONWEALTH of VIRGINIA

Randall P Burdette
Director

Department of Aviation
5702 Gulfstream Road
Richmond, Virginia 23250-2422

V/TDD • (804) 236-3624
FAX • (804) 236-3635

March 24, 2014

Mrs. Julia Wellman
Virginia Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, Virginia 23219

RE: NASA Wallops Island Hypervelocity Projectiles and Railgun, Federal Project # 14-038F

Dear Ms. Wellman:

The Virginia Department of Aviation has reviewed the information package you provided regarding the above referenced project. Following our review, staff has no objection to the proposed project. However, the project sponsor should take the same clearing precautions in the hazard area for aircraft that inadvertently fly into the area as they do with any marine vessels.

If you have any questions regarding this matter, please contact me at (804) 236-3632 at extension 110.

Sincerely,

S. Scott Denny
Senior Aviation Planner
Virginia Department of Aviation

Wellman, Julia (DEQ)

From: Steve Miner [sminer@co.accomack.va.us]
Sent: Monday, June 30, 2014 6:14 PM
To: Wellman, Julia (DEQ)
Cc: Rich Morrison; Meil, Elaine
Subject: Rail gun

Julia,

Thank you for the heads up on the comment period for the rail gun. Our internal review showed nothing that conflicted with our existing processes or requirements. Also, neither our Board nor any of its members ever raised it as an issue of concern.

We did have some internal discussion regarding possible range clearance issues. We might be complaints as folk's livelihoods or recreational activities could be affected. However, our relationship with the Navy is very solid. I feel comfortable that they would certainly work with us if any operational issues caused use conflicts in the future

In summary, others will know more about the science and environmental impacts of the gun than us. Our review turned up no inherent conflicts or problems with any existing policy or law of the County. Also, we are comfortable that the Navy would be open to discussions on easing, ameliorating or ending any negative situations that might arise during their regular activities.

Thank you, again.

Steve Miner, Ed.D.

Accomack County Administrator
P.O. Box 388
Accomac, VA 23301

(757) 787-5700 (O)
(757) 787-2468 (F)
(757) 710-7927 (C)
sminer@co.accomack.va.us

Appendix E- Public Comments

Subject: Notice of Availability of Draft Navy HVP/Railgun EA

Date: Wednesday, June 4, 2014 11:25:56 AM Eastern Daylight Time

From: Bundick, Joshua A. (WFF-2500)

To: Bundick, Joshua A. (WFF-2500)

CC: Hartzell, Jeanne CIV NSWCDD, CX8

BCC: quindocqua@aol.com, bobermeyer@delawaretribe.org, Caitlinh@ccppcrafts.com, Geoffrey.Wikel@boemre.gov, Lou.Chiarella@noaa.gov, Mark.Murray-Brown@noaa.gov, Van.D.Crawford@noaa.gov, Deborah_Darden@nps.gov, Robert.H.Cole@usace.army.mil, James.J.Erickson@uscg.mil, Rudnick.Barbara@epamail.epa.gov, Kevin_Holcomb@fws.gov, cindy_schulz@fws.gov, patricia.Kerr@navy.mil, karend@vims.edu, Ellie.Irons@deq.virginia.gov, Amanda.Lee@dhr.virginia.gov, maria.nold@deq.virginia.gov, tom.smith@dcr.virginia.gov, Tony.Watkinson@mrc.virginia.gov, david.whitehurst@dgif.virginia.gov, dfluhart@co.accomack.va.us, anpdc@a-npdc.org, administration@co.accomack.va.us, rmorrison@co.accomack.va.us, gchesser@yahoo.com, district06@senate.virginia.gov, nitagirl63@yahoo.com, DelRBloxom@house.virginia.gov, wjt_shore@verizon.net, rwolff@co.accomack.va.us, kerryallison@esvatourism.org, chairman@easternshoredefensealliance.org, jbieri@tnc.org, Jay@ShoreKeeper.org, lindajcharters@verizon.net, foxins@verizon.net, jhungiville@esvachamber.org, Sean.mulligan@vaspace.org, Amber@cbfieldstation.org, sparkertnc@gmail.com, coastkeeper@actforbays.org, Cquigley@hrmffa.org, dlitedirector@comcast.net, evelyn@chincoteaguechamber.com, info@cbes.org, cview@verizon.net, ken@virginiawaterman.com, Fisher, John (DEQ), Massey, Caroline R. (WFF-2000), EGGERS, JEREMY L. (WFF-1300), Meyer, T J (WFF-2500), Silbert, Shari A. (WFF-200.C)[LJT AND ASSOCIATES, INC.], FORDAN, ALFRED E. (WFF-8400), Underwood, Bruce E. (WFF-8000), Norwood, Tina (HQ-LD020), Hymer, Daniel C. (GSFC-1400)

Dear Colleagues:

The following notice is sent on behalf of the U.S. Navy. If you have any questions concerning the Draft EA, please contact Ms. Jeanne Hartzell by one of the means indicated below.

Best,

Joshua Bundick
Lead, Environmental Planning
NASA Wallops Flight Facility
Wallops Island, VA 23337
O: (757) 824-2319
F: (757) 824-1819
Joshua.A.Bundick@nasa.gov

Notice of Availability of Draft Environmental Assessment

The United States Navy (Navy), in cooperation with the National Aeronautics and Space Administration (NASA), has prepared an Environmental Assessment (EA) for testing of hypervelocity projectiles (HVPs) and an electromagnetic (EM) railgun at Wallops Flight Facility (WFF), Accomack County, Virginia. Prepared in accordance with the National Environmental Policy Act (NEPA), the Draft EA evaluates the environmental consequences of the Proposed Action to install a 5" powder gun and EM railgun, test hypervelocity projectiles (HVPs), integrate the HVPs with an EM railgun, and integrate the HVP/EM railgun weapon system with combat systems equipment currently in use on U.S. Navy warships. The Draft EA is being made available to you because public involvement is a very important part of the NEPA process. Please review and provide comments on the Draft EA no later than thirty (30) calendar days following the receipt of this notification.

Comments should be as specific as possible and should address distinct aspects of the Draft EA document, including alternatives or the adequacy of the environmental analysis. We will consider all comments received in preparing the Final EA. Please note that all public comments received, including commenter name and address, will be included in the publicly available project record. Should you, as an individual, wish that we withhold your name or contact information, please clearly state this at the beginning of your comments. We will honor your request to the extent allowed by law. However, we are unable to withhold the names or contact information for persons representing organizations, government agencies, or businesses.

The Draft EA is available for review online at:
http://www.navsea.navy.mil/nswc/dahlgren/RANGE/Railgun_Environmental_Assessment.pdf.

You may also request a hard copy or compact disc.

All requests for copies of the Draft EA and comments should be submitted by one of the following options:

1. Mail: Dr. Jeanne L. Hartzell, EA Project Manager
   Naval Surface Warfare Center Dahlgren
   Attn: CX8 Safety & Environmental Office
   17483 Dahlgren Rd, Suite 104
   Dahlgren, VA 22448-5119

2. Email: Jeanne.Hartzell1@navy.mil

3. Fax: (504) 653-7965

We look forward to hearing from you. Thank you for your participation in this process!

DEPARTMENT OF DEFENSE

DEPARTMENT OF THE NAVY

NOTICE OF AVAILABILITY OF A DRAFT ENVIRONMENTAL ASSESSMENT FOR THE TESTNG OF HYPERVELOCITY PROJECTILES AND AN ELECTROMAGNETIC RAILGUN AT WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Pursuant to Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969, as implemented by the Council on Environmental Quality Regulations, the U.S. Department of the Navy gives notice that a Draft Environmental Assessment (EA) has been prepared to evaluate the potential environmental impacts that may result from the Navy's proposal to install a 5" powder gun and electromagnetic (EM) railgun, test hypervelocity projectiles (HVPs), integrate the HVPs with an EM railgun, and integrate the HVP/EM railgun weapon system with combat systems equipment currently in use on U.S. Navy warships. The proposed action would be sited on Wallops Island, which is part of the National Aeronautics and Space Administration's (NASA's) Wallops Flight Facility (WFF) in Accomack County, Virginia. The guns would fire at targets in the Virginia Capes Range Complex in the Atlantic Ocean.

The purpose of the Proposed Action is to advance HVP and EM railgun technology from research, development, test, and evaluation to an acquisition program designed to meet warfighting needs by testing HVPs from WFF with 5" powder guns and an EM railgun, integrating HVPs and an EM railgun into a weapons system, and integrating the HVP/EM railgun weapons system with current fleet-relevant combat systems. The need for the Proposed Action is to enable the Navy to meet current and future mission-related warfare requirements of providing fire support for anti-air warfare, anti-surface missions, and naval surface fire support missions. This requires firing from a land-based range at targets on a sea-based range.

The Draft EA describes the Proposed Action, its purpose and need, and identifies alternatives considered. The Draft EA presents Alternative 1: No Action, Alternative 2 (the Preferred Alternative), Alternative 3, Alternative 4, and alternatives considered but eliminated from further analysis. The Draft EA is based on the most currently available information and data and analyzed the environmental impacts of the alternatives on land use; range operations; noise and vibration; air quality; socioeconomics; cultural resources; public health and safety; geomorphology, soils, and sediments; water resources; terrestrial biological resources; aquatic biological resources; protected species; and utilities. The Draft EA concludes that the implementation of the alternatives would not result in significant direct, indirect, or cumulative impacts to the quality of the human environment.

The Draft EA is available electronically at http://www.navsea.navy.mil/nswc/dahlgren/RANGE/Railgun_Environmental_Assessment.pdf. The Draft EA is also available in hardcopy for public review at the following repositories:

- NASA WFF Visitor Center at Building J-20, Wallops Island, Virginia 23337
- Chincoteague Island Library at 4077 Main Street, Chincoteague Island, Virginia 23336
- Eastern Shore Public Library at 23610 Front Street, P.O. Box 360, Accomack, Virginia 23301

Public input is very important in order for the Navy to fully understand community concerns and relevant issues. Individuals interested in the project are encouraged to provide their comments on the document. Comments should be postmarked no later than 30 calendar days from the publication of this notice.

Comments may be emailed to: Jeanne.Hartzell1@navy.mil or may be mailed to:

Dr. Jeanne L. Hartzell, EA Project Manager
Naval Surface Warfare Center Dahlgren
Attn: CX8 Safety & Environmental Office
17483 Dahlgren Rd, Suite 104,
Dahlgren, VA 22448-5119

phy 6/4, 5, '14

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Aluminum Craft 16' w/ '04 40HP Merc. pwr trim, galvanized trailer, 5 console, $4,700. **Call 434-821-9027 434-665-9260 or 757-787-3439**

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IMPORTED CARS

HONDA '11 Acc LX 4dr loaded, Fa tory Warranty. 3 mi. $14,8 **757-894-1684**

MOTORCYCLES/ATV

KAWASAKI Noman 1600 8400 mi. Mint c dition. Match

Comment Number	Name and address	Comment	Response
1	Barbara Farrell 26399 Seabreeze Drive Accomac, VA 23301	Will the railgun testing have the same affect as the Navy testing in the area off the coast which shook our house down to the foundation?	As described in Section 3.3 of the Environmental Assessment, vibration effects should not be significant for buildings on or surrounding WFF. For additional information, refer to Figures 3.3-1 through 3.3-5 of the Environmental Assessment, which depict predicted peak noise levels from railgun and powder gun testing, and Table 3.3-2, which relates peak noise to vibration levels.
2	Barbara Farrell 26399 Seabreeze Drive Accomac, VA 23301	What about the electromagnetic waves coming these guns?	There will be no magnetic effects from the EM railgun as magnetic fields would drop to background levels 120 feet (37 meters) from the firing point.
3	Barbara Farrell 26399 Seabreeze Drive Accomac, VA 23301	Will there be warnings to the public?	As described in section 3.2.2.2 of the EA, the public will be notified in advance through flyers, notices to mariners and on the Wallops Flight Facility website.
4	Sandra Beerends No address	What is the reasoning behind the development of such a gun? Who are the victims that the U.S. has in mind? I assume satellites will find the target with laser guidance of the projectile to it? Why more weapons? Who else has the gun? Who else will have this gun?	The purpose of and need for the testing is described in sections 1.1 through 1.3 of the EA.
5	Town of Chincoteague 6150 Community Drive Chincoteague Island, VA 23336	The Town of Chincoteague requests consideration again to accommodate the limited but critical need for aerial mosquito spraying of Chincoteague Island.	The actions proposed in this EA will not affect the airspace over the Town of Chincoteague, and therefore, should not impact aerial mosquito spraying of Chincoteague Island.
6	Town of Chincoteague 6150 Community Drive Chincoteague Island, VA 23336	Clearing the hazard area of marine vessels is a similar concern.	The Navy and NASA will work with the surrounding communities to accommodate commercial and recreational vessel operations and to continue to provide public notifications that are described within the EA.
7	Town of Chincoteague 6150 Community Drive Chincoteague Island, VA 23336	It would be helpful to Town residents if additional information could be provided by expanding Figure 3.3-1 to illustrate peak noise contours at the south end of Chincoteague Island.	Additional figures are included showing the 108 dBP noise contour south of Chincoteague Island.
8	Catawba Indian Nation Tribal Historic Preservation Office 1536 Tom Steven Road Rock Hill, SC 29730	No immediate concerns; however, the Catawba are to be notified if Native American artifacts and/or human remains are located during the ground disturbance phase of this project.	Comment noted.

Brown, Bethany D CIV NSWCDD, CX8

Subject: Environmental Impact/HVP and Electromagnetic Railgun Testing @ WFF

-----Original Message-----
From: Barbara Farrell [mailto:bafarrell@outlook.com]
Sent: Friday, June 06, 2014 8:47 PM
To: Hartzell, Jeanne CIV NSWCDD, CX8
Subject: Environmental Impact/HVP and Electromagnetic Railgun Testing @ WFF

Dear Dr.Hartzell,

I have read the assessment for the testing of the above. I am really concerned about the dangers of one of these projectiles landing on or near our home. We live in the Henry's Point Subdivision, which faces the Old Coast Guard Station on Cedar and Metatompkin Island, in Accomac County. We are 38 miles down range from WFF. We can see Orbital's launches from our top deck. I am concerned because whatever the Navy has been testing in the area off the coast here since 2011, and most recently a test on Wednesday, May 28, 2014 at 11:00 AM and 11:09 AM shook our house (which is 3700 square feet) down to the foundation. It sent a shock wave that I could feel it.
Will the railgun testing have the same affect? If so, I'm not really pleased. My other thought is what exactly do you mean by "no significant impact"? This disturbs me greatly. I'm really concerned about the electromagnetic waves coming off these guns. It seems that the Navy is more concerned with the wildlife impacts than the human ones. Will there be warnings to the public if this indeed goes
forward, because we have not had any warnings with other Navy activities off t he coast of Accomac.

I understand the National Security issues, and I have the greatest respect for the military. My father was a Col. in the USAF, and I'm supportive of all things military.

Respectfully,

Barbara (Galati) Farrell
26399 Seabreeze Drive
Accomac, VA 23301

Sent from Windows Mail

Brown, Bethany D CIV NSWCDD, CX8

Subject: FW: railgun at wallops

-----Original Message-----
From: sandra beerends [mailto:ductapeductape@gmail.com]
Sent: Monday, June 09, 2014 10:02 AM
To: Hartzell, Jeanne CIV NSWCDD, CX8
Subject: railgun at wallops

please tell me the reasoning behind the development of such a gun? Who are the victims that the U.S. has in mind? I assume satellites will find the target with laser guidance of the projectile to it? Why more weapons? Seems we are good at destruction without MORE WEAPONS. Who else has this gun? Who else WILL have this gun?

Perhaps you can only answer technical questions..In that case, do you know someone who has the answers to the above ones? thank you very much... ....Sandra Beerends

It was taking too long to download the report..so I resorted to contacting you...I am a distance from the copies of the reports in the Chincoteague and Accomack libraries.

TOWN OF CHINCOTEAGUE, INC.

July 2, 2014

Dr. Jeanne L. Hartzell, EA Project Manager
Naval Surface Warfare Center Dahlgren
Attn: CX8 Safety & Environmental Office
17483 Dahlgren Road, Suite 104
Building 189, Room 114
Dahlgren, VA 22448-5119

By Email: Jeanne.Hartzell1@navy.mil

RE: US Navy Testing of Hypervelocity Projectiles
And an Electromagnetic Railgun at Wallops Flight Facility
Draft Environmental Assessment Comment

Dear Dr. Hartzell:

The following comments are submitted on behalf of the Town of Chincoteague, Virginia regarding the Draft EA that was advertised for review on June 4, 2014. We appreciate the opportunity to learn about the proposed HVP/EM Railgun weapon system and expansion of use on Wallops Island.

Our community is supportive of NASA and US Navy operations at Wallops Island and we appreciate the strength that federal investment brings to our local economy and our nation's leadership in the world. The EA document was well prepared to provide information and maps and to easily understand possible impacts to the firing area. Based on our review, we have identified several issues that may require future coordination:

1) A previous EA for the proposed **UAS Airstrip** called for more frequent closure of airspace that may occur 5 days each week; with 4 operations per day; from 7am to 5pm with occasional night and weekend operations. The current EA for **HVP/EM Railgun** adds the need for additional closures up to 50 days annually. The Town of Chincoteague identified the following concern in 2012 and requests consideration again to accommodate the limited but critical need for aerial mosquito spraying of Chincoteague Island.

> *'On an annual basis, the Town of Chincoteague contracts with Allen Chorman & Son, Inc. to provide aerial application of insecticide for mosquito control. Even though this application usually occurs only 4 times per year in May, June, and July, the timing of the flight is of critical importance. They are typically scheduled 8 to 10 days after a significant period of rainfall, when there is evidence of a hatch that cannot be controlled with ground application, and weather conditions permit the application as close to a prime tourist weekend as possible.'*

6150 COMMUNITY DRIVE, CHINCOTEAGUE ISLAND, VIRGINIA 23336
(757) 336-6519 FAX (757) 336-1965

2) Clearing the hazard area of marine vessels is a similar concern. As noted in the EA, WFF only closed the Atlantic Ocean Danger Zone around Wallops Island and Chincoteague Inlet five (5) times during calendar year 2013. **HVP/EM Railgun** tests are estimated to restrict vessel movements for several hours at a time, between 80 hours and 190 hours annually. Future mission activities listed under Section 4.1 also raise the question of cumulative impacts which will require additional management changes to the safety zones. With regard to this EA, we appreciate the proposed accommodations for commercial and recreational vessel operations and continued public notifications that are described on page 3-12.

   Town of Chincoteague Harbormaster Wayne Merritt confirmed that the existing notification process has worked well in the past. With regard to possible vessel restrictions in the firing area shown on Figure 3.8-2, Mr. Merritt suggested an added measure of coordination for scheduled tests during the middle of June when an annual tuna tournament is scheduled with numerous recreational vessels heading to the Washington and Norfolk Canyons.

3) Public notification and information about the anticipated noise and vibration is needed. Following the recent EA for **E-2/C-2 Field Carrier Landing Practice Operations**, the public has been informed about the 65 dB DNL noise contour for aircraft as the limit of potential human health and environmental effects. The EA for **HVP/EM Railgun** states that measurement of noise levels for 'impulsive noise' is different and is set at 115 dB peak levels. It would be helpful to Town residents if additional information could be provided by expanding Figure 3.3-1 to illustrate estimated peak noise contours at the south end of Chincoteague Island. This may confirm that noise levels are consistent with Town Code section 22-35 as they reach residential neighborhoods in case we receive complaints or questions.

Thank you for considering these concerns for the Town of Chincoteague.

Sincerely,

Robert G. Ritter, Jr.
Town Manager

Gun firing would increase activation of portions or, less likely, the entirety of the Atlantic Ocean Danger Zone around Wallops Island and Chincoteague Inlet. The flight safety plans would establish a hazard area and, as needed, a caution area for each projectile. Each hazard area would encompass a corridor or a cone extending from the gun along the firing azimuth and a buffer of specified radius around the target area. If established for a projectile, the caution area would extend from the gun along the firing azimuth to a distance beyond the hazard area. During a test, no vessels would be allowed within the hazard area and only a specified number of vessels would be allowed in the caution area.

During a test, vessels would be excluded from that part of the danger zone that is overlain by the hazard area specified in the operative flight safety plan, and the number of vessels in the caution area would be controlled. Depending on the configurations of the hazard area and caution area, vessel movement through Chincoteague Inlet occasionally may be temporarily stopped or restricted.

To support HVP testing, WFF would restrict vessel movements near Wallops Island for several hours and, if required, would stop vessel movement through Chincoteague Inlet typically for 30 to 60 minutes per projectile firing. Based on a median value of 45 minutes per firing, vessel movements through the inlet could be restricted approximately 80 hours annually in the first and second years, approximately 110 hours annually in the third and fourth years, and approximately 190 hours annually in the fifth year. WFF may allow passage through the hazard area and through Chincoteague Inlet during gaps between firings, providing the gaps are of sufficient duration to allow safe transit across the area.

Several factors would contribute to minimizing the effects of increased activation of the danger zone on commercial and recreational vessel operations. First, NASA works with the public and adjusts the azimuth of the firing to avoid major boating corridors and fishing areas. Second, as is the case with all danger zone restrictions, information on the time and duration of each test would be made available in advance through flyers and notices to mariners over maritime frequency radio and on the WFF website. Boaters and fishermen in the area are familiar with WFF's range restrictions and are aware that they might need to shift the timing and location of their activities. Third, gun firing would be intermittent and would include long periods during which vessels may be allowed to pass under controlled conditions through the hazard area and through Chincoteague Inlet, consistent with the Navy's and NASA's policy to make all reasonable efforts to minimize public inconvenience. Finally, activation of only parts of the danger zone – not all of its area – would allow vessels to move freely in the unrestricted part, outside the hazard area and caution area. During such closures, a portion of the danger zone may not be accessible to commercial or recreational boaters or may require that vessels go around the edge of the hazard area when it is restricted.

Based on the annual number of shots and WFF's standard operating procedures for clearing testing areas, testing of HVPs with the powder gun and EM railgun would have no significant impacts on range operations under the Pad 5 Alternative.

3.2.2.3 Pad 4 Alternative

The testing performed under the Pad 4 Alternative would be identical to the tesing under the Pad 5 Alternative, except testing would be located about 1,020 feet (310 meters) south of Pad 5. The difference in location would have no impact on range operations, as the need to activate R-6604A, the Atlantic Ocean Danger Zone around Wallops Island and Chincoteague Inlet, and W-

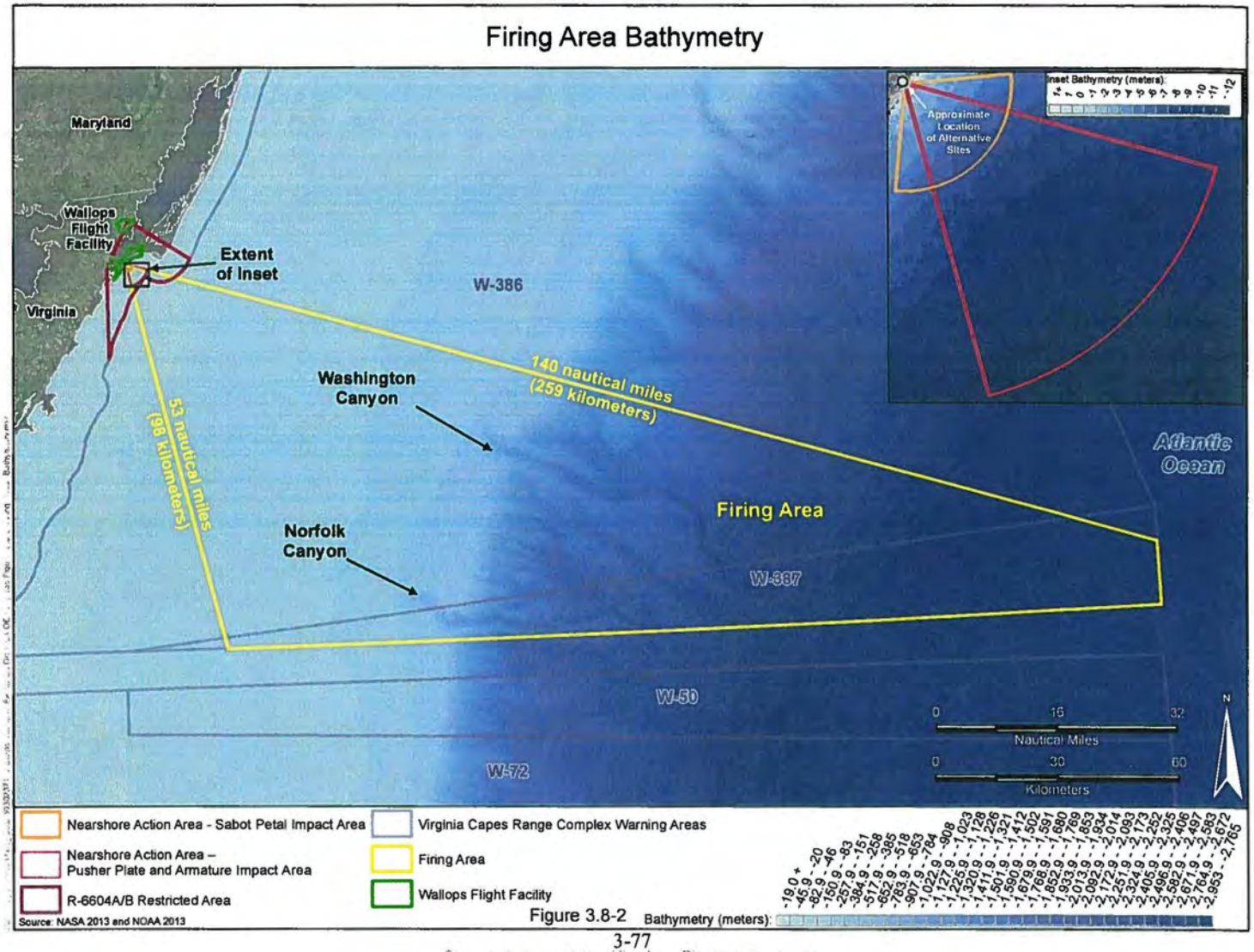


Figure 3.8-2

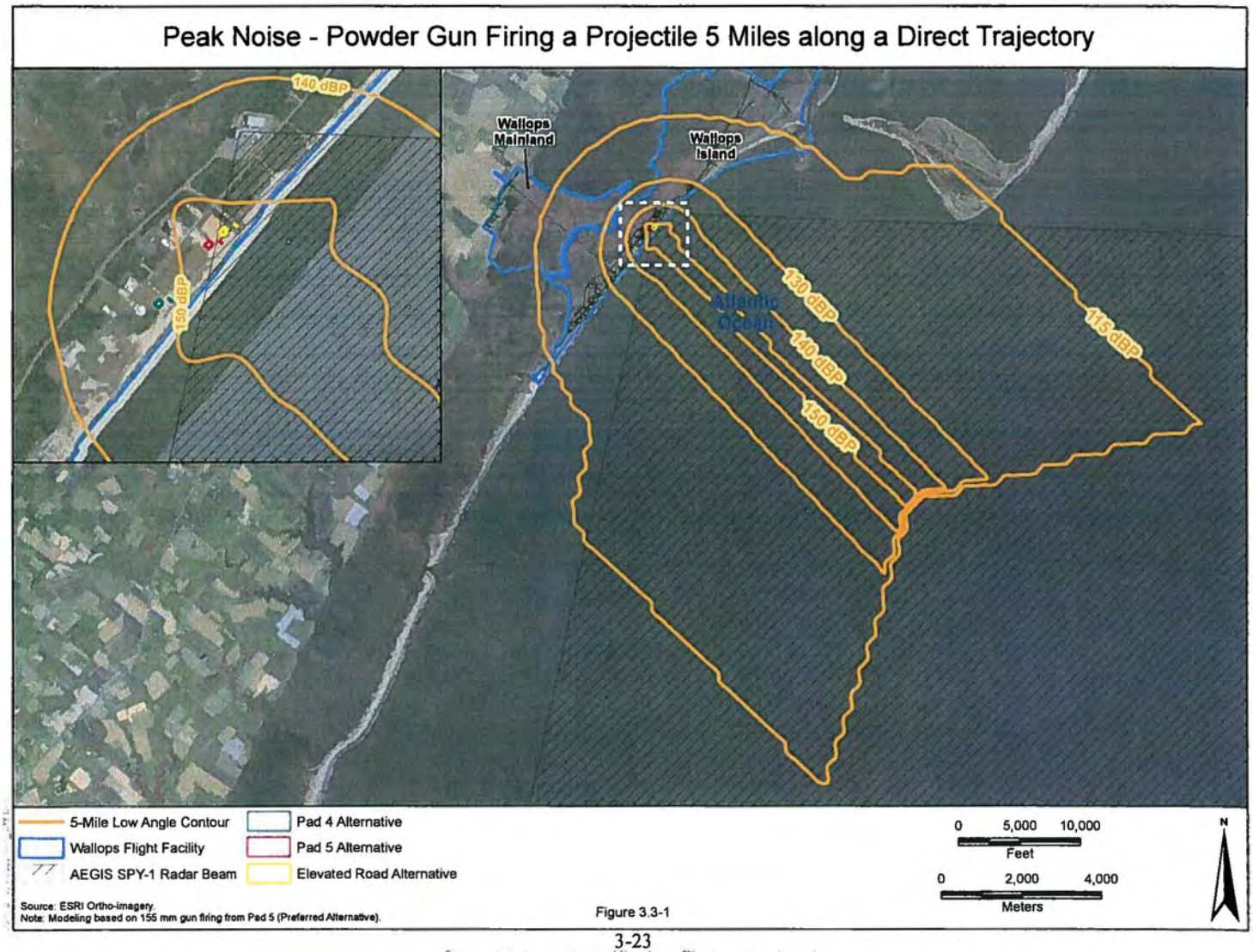


Figure 3.3-1

3-23

Figure XX

Peak Noise - Powder Gun Firing a Projectile 25 Miles along a Direct Trajectory

Legend

- Firing Lauch Point
- 25-mile Low Angle Contour (Peak Sound Level - dBP)
- State Boundary

0 2 4
Nautical Miles

0 5 10
Kilometers

N

Path: B:\work\60308683_SPYMod\Contours_25Mile_LowAngle.mxd

Figure XX

Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427
Fax 803-328-5791

June 25, 2014

HVP-Railgun EA Project Manager
Naval Surface Warfare Center Dahlgren
CX8 – Safety and Environmental Office
17483 Dahlgren Road, Suite 104
Bldg 189, Room 114
Dahlgren, VA 22448-5119

Re. THPO #	TCNS #	Project Description
2014-57-3		EA for testing of hypervelocity projectiles (HVPs) and an EM railgun at WFF, Accomack, VA

To whom it may concern,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions please contact Caitlin Totherow at 803-328-2427 ext. 226, or e-mail caitlinh@ccppcrafts.com.

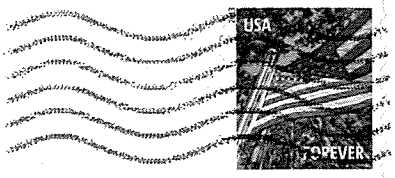
Sincerely,

Caitlin Totherow for

Wenonah G. Haire
Tribal Historic Preservation Officer

CHARLOTTE NC 282

26 JUN 2014 PM 3 L



Attn: HVP-Railgun EA Project Manager
Naval Surface Warfare Center Dahlgren
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17483 Dahlgren Road, Suite 104
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Dahlgren, VA 22448-5119

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