

**APPENDIX D**  
**FEDERAL CONSISTENCY DETERMINATION**

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**FEDERAL CONSISTENCY DETERMINATION FOR THE  
SHORELINE ENHANCEMENT AND RESTORATION PROJECT  
ENVIRONMENTAL ASSESSMENT**

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
GODDARD SPACE FLIGHT CENTER**

**WALLOPS FLIGHT FACILITY  
WALLOPS ISLAND, VA 23337**

## **INTRODUCTION**

The National Aeronautics and Space Administration (NASA) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from proposed enhancement and restoration of the Wallops Island shoreline at NASA's Goddard Space Flight Center Wallops Flight Facility (WFF), Wallops Island, Virginia. The Shoreline Enhancement and Restoration Project EA evaluates the Proposed Action to renourish the beach along the Wallops Island shoreline infrastructure protection area. Before the renourishment, NASA may construct a series of parallel nearshore breakwater structures that would reduce the intensity of wave action and slow sediment transport. The Shoreline Enhancement and Restoration Project EA was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended (42 U.S. Code 4321-4347), the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), NASA's regulations for implementing NEPA (14 CFR Subpart 1216.3), and the NASA Procedural Requirements (NPR) for Implementing NEPA and Executive Order (EO) 12114 (NPR 8580.1).

This document provides the Commonwealth of Virginia with NASA's Consistency Determination under Coastal Zone Management Act Section 307(c)(1) and Title 15 CFR Part 930, Subpart C, for enhancing and restoring the Wallops Island shoreline analyzed in the NASA WFF Shoreline Enhancement and Restoration Project EA. The information in this Consistency Determination is provided pursuant to 15 CFR Section 930.39.

NASA requested the cooperation of Bureau of Ocean Energy Management (BOEM) and the United States Army Corps of Engineers (USACE), Norfolk District in preparing the Shoreline Enhancement and Restoration Project EA and this Consistency Determination, because they possess regulatory authority or specialized expertise pertaining to the Proposed Action. The EA is being developed to fulfill each Federal agency's obligations under NEPA and the Coastal Zone Management Act (CZMA). NASA, as the WFF property owner and project proponent, is the lead agency and responsible for ensuring overall compliance with applicable environmental statutes, including NEPA and the CZMA.

## **BACKGROUND**

Some of NASA's and the Commonwealth of Virginia's most critical launch assets, including Mid-Atlantic Regional Spaceport Launch Complex 0 and multiple sounding rocket pads are located along the Wallops Island shoreline infrastructure protection area.

On December 13, 2010, NASA issued a Record of Decision (ROD) for its *Final Programmatic Environmental Impact Statement Wallops Flight Facility Shoreline Restoration and Infrastructure*

*Protection Program*<sup>3</sup>. In its ROD, NASA selected for implementation Alternative 1: Full Beach Fill, Seawall Extension and adopted a suite of mitigation and monitoring protocols to both reduce potential environmental impacts and track project performance. Implementing the initial phase of Alternative 1 entailed: 1) the placement along the Wallops Island shoreline of approximately 3.2 million cubic yards of sand dredged from Unnamed Shoal A, located on the Outer Continental Shelf (OCS) under BOEM jurisdiction, located in the Atlantic Ocean; and 2) an initial 1,430-foot southerly extension of the Wallops Island rock seawall with future extensions completed on a funds-available basis to a maximum length of 4,600 feet. The ROD stated that fill material for future renourishment cycles could be taken from either Unnamed Shoal A, Unnamed Shoal B, or north Wallops Island beach and left the specifics of how and when the fill material was obtained to be addressed in future action-specific NEPA documentation. After issuing its ROD and securing necessary permits, NASA and its technical partner, the U.S. Army Corps of Engineers (USACE), Norfolk District, oversaw the construction of the project between April and August 2012.

In October 2012, Hurricane Sandy made landfall. Monitoring surveys following the storm event identified the need to repair a section of the seawall and the southern two-thirds of the recently nourished beach. Public Law 113-2, *Disaster Relief Appropriations Act, 2013*, was signed into law on January 29, 2013. The bill included a provision for NASA to repair facilities that sustained damage during the Hurricane. NASA signed a Finding of No Significant Impact (FONSI) on June 6, 2013, for the *Wallops Island Post-Hurricane Sandy Shoreline Repair Final Environmental Assessment*<sup>4</sup>. Repairs to the seawall and beach renourishment were completed in September 2014. Subsequent storms including Hurricane Joaquin in 2015 and Winter Storm Jonas in 2016 reduced the sand volume in the southern portion of the project area by an average of 1,014,337 cubic yards as compared to volumes present after 2014 shoreline repair (USACE 2018a). Additional sand volume reduction occurred most recently in 2018 with Winter Storm Riley.

NASA and USACE have sponsored biannual (spring and fall) topographic and hydrographic monitoring surveys of the Wallops Island shoreline. The most recent survey was completed in fall of 2017. Data indicate that a notable portion of the land surface sand relocated by storm winds and waves has been transported to the north end of Wallops Island. The effects of storms are most apparent within the southern half of the Wallops Island beach, where many of the most critical launch assets are located. Within this area, the seaward half of the beach berm has been lowered by up to 3 feet or more. As such, the beach berm and dune system can no longer provide the level of storm damage reduction to which it was originally intended and must be restored to regain full functionality.

## **DESCRIPTION OF THE PROPOSED ACTION**

Approximately 1.3 million cubic yards of sand would be needed to renourish the shoreline infrastructure protection area. Upon receipt of all necessary authorizations, NASA would contract for the placement of the sand material that would be taken from either 1) north Wallops Island beach (i.e., backpassed), an area that has been accreting due to transport of material from the south or 2) Unnamed Shoal A, an offshore sand ridge located in the OCS at the southern end of the Assateague ridge field which was used as a sand

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<sup>3</sup> The *Final SRIPP PEIS* is available online at: <https://code200-external.gsfc.nasa.gov/250-wff/programmatic-environmental-impact-statement-shoreline-restoration-and-infrastructure-protection>

<sup>4</sup> The *Final Post-Sandy EA* is available online at: <https://code200-external.gsfc.nasa.gov/250-wff/wallops-island-post-hurricane-sandy-shoreline-repair-final-environmental-assessment-fea-and-finding>.

source for previous renourishment projects. Under either of the sand placement alternatives, a series of nearshore detached parallel breakwaters may be constructed prior to renourishment of the Wallops Island shoreline.

#### **Sand Backpassed from North Wallops Island Beach**

An estimated 1.7 million cubic yards of sand is available at the north Wallops Island beach, toward the 1.3 million cubic yards required. Based on vegetation and wildlife habitat constraints (such as avoiding areas of most dense vegetation and bird and sea turtle nesting season), the total potential area for sand removal is approximately 200 acres. Excavation depth would be to an average of -2.35 feet above mean sea level.

A pan excavator would likely be used to remove the sand from the north Wallops Island beach borrow area. The pan excavator would stockpile the sand, which would be loaded onto dump trucks that would transport the fill material up and down the beach. Bulldozers would then be used to spread the fill material once it is placed on the beach. Other onshore equipment may include all-terrain vehicles (ATV), an office trailer, mobile generators, construction site lighting, and mobile fuel tanks. All heavy equipment would access the beach from existing roads and established access points. No new temporary or permanent roads would be constructed to access the beach or to transport the fill material to renourishment areas. Prior to excavation, a pre-project topographic and hydrographic survey would be conducted. Multiple survey crews would employ ATVs and light trucks to conduct pre-project surveys of the project site.

It is expected that the sand backpassing and spreading work would take **3** months to complete. When completed, NASA would replant the dunes.

#### **Sand Dredged from Unnamed Shoal A**

In 2010, up to 515 acres of the shoal (sub-area A-1) were dredged for the initial beach fill cycle and an additional 800,000 cubic yards were dredged from the same area (sub-area A-1) for the post-Hurricane Sandy repairs.

Given the distance of the borrow area (Unnamed Shoal A) from Wallops Island, it is expected that the contractor would again use one or more trailing suction hopper dredges to obtain the sand material. Because of overflow from the hopper dredge at the offshore borrow area during dredging and losses during pump-out and placement, a larger volume of material would need to be dredged to meet the targeted fill volume. Based on information from other shoreline restoration projects, sediment losses during dredging and placement operations may be up to 25 percent. Assuming a conservative 25 percent loss of the 1.3 million cubic yards required, the dredged volume for the proposed renourishment would be approximately 1.625 million cubic yards.

Nearshore, it is expected that the contractor would require one or more anchored pumpout stations approximately 2 miles east of Wallops Island in 25 to 30 feet of water. Up to several miles of submerged steel pipeline would be temporarily placed on the seafloor and would be the conduit by which the sand/water slurry would be pumped from the dredge to the beach. Once discharged onto the beach, bulldozers would grade the material to the design template which is proposed to include an additional foot of berm elevation as compared to the initial beach fill. The time in the tidal cycle would factor into the location on the beach within which the equipment would work for a given dredge load. During low tide, the equipment would likely concentrate on the intertidal and subtidal zones, whereas during high tide,

work would be focused on the upper beach berm and dune. After each section of beach is confirmed to meet design criteria, the process would continue in the longshore direction, with sections of discharge pipe added as it progresses.

It is expected that the dredging and beach fill work would take 3 months to complete. When completed, NASA would replant the dunes with vegetation.

### **Nearshore Detached Parallel Breakwaters**

A series of rubble mound breakwaters would be constructed approximately 200 feet offshore from the renourished shoreline mean high water line. Each breakwater would be constructed of Virginia Department of Transportation (VDOT) Type I stone for the outer layer which ranges from 0.75 to 2 tons and VDOT Class II Stone for the core layer which range from 150 to 500 pounds. All stone would be placed parallel to the shore on top of approximately 130 feet long of prefabricated geotextile marine mattresses, placed approximately 100 feet apart from each other. The breakwaters would measure approximately 10 feet wide at top crest elevation. Water depths in these areas is approximately 4 to 8 feet. The breakwaters would be placed offshore of Launch Pad 0-B and continue north to the Horizontal Integration Facility (HIF); Building X-079. Depending upon economic, engineering, and environmental factors, the initial series may be broken into smaller series (e.g., three breakwaters offshore of Launch Pad 0-A and another three offshore of the HIF). The rocks for constructing each breakwater would be transported to the WFF area by rail, offloaded, and then trucked to the handling or placement site on Wallops Island. The breakwater construction would take place in the water using a barge and heavy lifting equipment.

It is expected that breakwater construction would take approximately 6 to 9 months to complete. Breakwater construction would be completed prior to renourishment of the shoreline infrastructure protection area.

### **Effects to Resources**

NASA has determined that implementing the Shoreline Enhancement and Restoration Project EA would affect resources of Virginia in the following manner:

#### ***Coastal Geology and Processes***

**Nearshore** - Renourishment of the beach at the southern end of the Wallops Island would result in a new shoreline extending several hundred feet offshore from the current shoreline. The new beach profile would provide increased wave dissipation and added protection for the onshore infrastructure from storm events. Over time, the new beach would be reshaped; the profile would shift with seasonal differences in wave action. Higher wave energy during the winter would likely steepen the beach profile with some of the sand moved offshore into a bar system. Lower wave energy during the summer months would tend to flatten out as sand from the offshore bar system is moved back onto the beach face. The onshore-offshore beach dynamics would also be influenced by the littoral transport of the sand both to the north and to the south depending upon the direction of incident wave action. Transport to the north should be recaptured at the north end as wave action is diminished in the lee of Assateague Island. Transport to the south would eventually provide additional sand resources to the barrier islands south of Wallops Island. Parallel breakwaters in conjunction with beach renourishment would help provide an increased level of shoreline protection with the minimum possible impact on shoreline processes.

**Offshore** - The removal of material from Unnamed Shoal A would be done in a uniform manner across the areal extent of sub-area A-1. As such, approximately two-thirds of the southern half of the shoal's elevation would be lowered by an additional 1.5 to 3 feet, with some areas approaching an additional 10 feet below the current profile. As proposed, the elevation of the northern portion of the shoal (sub-area A-2) would remain the same. The conservative model-based analysis performed for the *2010 Final SRIPP PEIS* indicated that even when a 2 square mile area of the shoal was "planed" to an elevation necessary to obtain up to 10 million cubic yards of material, the induced effects on the Assateague Island shoreline could not be distinguished from those changes occurring as a result of natural variation in sediment transport. Therefore, it is not expected that the additional lowering of the shoal would cause any measurable reduction in wave sheltering effects on properties to the west of the borrow area.

### ***Water Quality***

**Nearshore** - The beach fill material from the north Wallops Island beach has a grain size appropriate for use for renourishment. It is expected that the turbidity plume generated at the placement site would be comparable to those reported in similar projects: concentrated within the swash zone, dissipating between 1,000 to 2,000 feet alongshore; and short term, only lasting several hours. Offshore impacts to water quality could result from breakwater construction. Localized turbidity would be expected from placement of stone onto the sandy bottom during breakwater construction; the impact would be of short duration and not adverse.

**Offshore** - Dredging operations would cause sediment to be suspended in the water column. Studies of past projects indicate that the extent of the sediment plume is generally limited to between 1,640 to 4,000 feet from the dredge. The length and shape of the plume depends on the hydrodynamics of the water column and the sediment grain size. Given that the dominant substrate material at the borrow site is sand, it is expected to settle rapidly and cause less turbidity and oxygen demand than finer-grained sediments would cause. No appreciable effects on dissolved oxygen, pH, or temperature are anticipated because the dredged material has low levels of organics and low biological oxygen demand. Additionally, dredging activities would occur within the open ocean where the water column is subject to constant mixing and exchange with oxygen rich surface waters. Turbidity resulting from the dredging would be short term (i.e., present for approximately an hour) and would not be expected to extend more than several thousand feet from the dredging operation.

### ***Air Quality***

Emissions from earthmoving equipment used during sand excavation from north Wallops Island beach and placement along the shoreline infrastructure protection area, barge activities (dredging and transport), and equipment used in the transport and construction of nearshore breakwaters are not anticipated to cause significant impacts to air quality. GHG emissions generated alone would not be enough to cause global warming, in combination with past and future emissions from all other sources, they would contribute incrementally to the global warming that produces the adverse effects of climate change.

### ***Noise***

The operation of heavy equipment would be the primary source of project related noise. Wind and surf conditions would play a major role in dictating the distances at which the construction-related sounds could be heard by nearby receivers. Localized impacts would occur during sand excavation, movement and placement and construction of the breakwaters, but they would not be expected to be substantial.

Localized impacts on marine mammals from noise associated with vessel activities (dredging) and construction of breakwaters would be anticipated but any impacts would be temporary and not adverse.

### ***Benthos***

Benthos living in the sandy beach area of north Wallops Island beach would experience direct mortality from sand removal and relocation. The physical oceanographic conditions would be essentially unchanged, and after the renourishment reaches equilibrium, there would be no net change in the physical environment available for benthos. It is expected that organisms from adjacent areas would recolonize the new beach in 6 to 12 months after project completion. Minimal impacts to benthos during breakwater construction; minimal benefits post-construction as the breakwaters could provide attachment points as well as refuge and cover.

Bottom dwelling benthic organisms (most commonly the horseshoe crab, whelk, and blue crabs) would become entrained in the dredge. Because of the dynamic nature of nearshore benthic communities and their variability over time, the recovery of benthos at offshore borrow areas varies. Given that Unnamed Shoal A consists of fine to medium sand, benthos recovery would be approximately several months to two years.

### ***Wildlife***

Temporary noise and visual disturbances could adversely affect beach foraging and nesting birds and sea turtles during sand excavation and placement and breakwater construction. Due to the nesting cycle of potentially affected species, the possibility of adverse effects would be greatest should the work occur between the months of April and September. If work were to be conducted between the months of April and September, NASA would ensure that the work site and adjacent areas are surveyed for nesting birds and sea turtles by a biological monitor on a daily basis.

Topography of Unnamed Shoal A would not substantially change though the additional dredging would increase the water depths at the borrow area. Diving bird species could still effectively forage on the shoal; however, forage sources would be suppressed for several seasons post-dredging. Both adjacent undisturbed areas on Unnamed Shoal A and neighboring shoals would provide adequate forage should seabirds avoid the directly affected area. Impacts from disturbance would be limited to the anticipated 3-month active dredging phase.

### ***Fisheries and Essential Fish Habitat***

Turbidity and water quality stressors imposed on intertidal and subtidal fishery species and EFH would be moderate and episodic for the duration of the project. Construction equipment and materials would displace water column EFH, fish species, and their prey. The adverse impact would be concentrated within the swash zone, projected to dissipate approximately 1,000 to 2,000 feet alongshore, and projected to last only several hours after cessation of work. Physical strike and disturbance stressors would be limited to vehicles operating in the surf zone.

Approximately 206 acres of offshore shoal habitat would be affected. Absolute mortality of sessile species (organisms attached to substrate) in the project area; potential mortality to motile species from entrainment into the sand excavation equipment. Most motile fishery species would be displaced. Displacement would range from temporary to long term, and most consequences would be temporary or short term.



### ***Marine Mammals***

Potential adverse impacts to marine mammals would be associated with physical disturbance to habitats during dredging and fill, temporary increases in-water turbidity, a reduction in prey availability, vessel strike, and increased noise from vessel activities. However, given the relatively slow speed of the dredge, the limited extent of habitat affected, and with the implementation of mitigation measures described below, effects are expected to be minimal. Adverse impacts to marine mammals during breakwater construction would not be anticipated as large marine mammals would likely not be found in the shallow waters and bottlenose dolphins would avoid the noise and construction activity.

During the development of the *2013 Post-Hurricane Sandy EA*, NASA participated in a study that found in-water sounds levels associated with dredging would not reach the 190 and 180 dB root mean square (RMS) thresholds; 160 dB<sub>RMS</sub> would only be reached several meters from the dredge; and 120 dB<sub>RMS</sub> would be reached at between 0.1 and 1.2 miles from the dredge, depending on the specific activity within the dredging cycle. As with previous projects that involved dredging, NASA would ensure that an NMFS-approved bridge watch is stationed on each dredge at all times of year to scan the horizon for up to 1.2 miles for marine mammals. At this distance, marine mammals could be readily detected with the aid of binoculars. Should an individual be detected, the vessel would be required to turn off its pumps until the animal has left the immediate vicinity, upon which the dredging activity could resume.

### ***Special Status Species***

Potential impacts on piping plovers and red knots would include the potential for startle or disruption of foraging, reduction in prey availability, and, for piping plovers, the potential for disruption of courtship and nesting activities. Nesting sea turtles could potentially be impacted during nighttime construction activity (particularly artificial lighting) on the beach, unintentional burial of a newly dug nest if it were to go undetected, disorientation of hatchlings (due to project related light sources), or obstruction to hatchlings during their emergence and subsequent trip to the ocean. NASA would employ a biological monitor to survey the project site on a daily basis should renourishment work occur between the months of April and September to ensure and would not harvest (i.e., backpass) sand from north Wallops Island during those months, to ensure the species are not directly impacted during construction activities. Potential impacts on in-water sea turtles, Atlantic sturgeon, and the giant manta ray, and cetaceans could include entrainment in the dredge, interaction with the sediment plume, reduction in available forage, and elevate sounds levels. NASA would implement a number of measures to minimize impacts to listed species including approved observers that would be present on the dredging vessels.

### ***Cultural Resources***

All dredging, sand placement, and breakwater construction would be conducted within areas previously surveyed for cultural resources. Only the Wallops Beach Life Saving Station (DHR ID #001-0027-0100; WFF #V-065) and the Coast Guard Observation Tower (DHR ID #001-0027-0101) are considered eligible for listing in the National Register of Historic Places. Potential effects are likely to be minimal since the resources are located approximately 3,000 feet north of the area of potential effect. Previous surveys did not identify any archaeological resources. The inadvertent discovery of any previously unidentified archaeological resources would result in immediate stoppage of work and notification of the WFF Cultural Resources Manager, who would contact the Virginia Department of Historic Resources and Native American Tribes as appropriate.

### ***Recreation Resources***

Closure of the north Wallops Island beach during sand excavation would temporarily reduce recreational opportunities. Increased boat and barge traffic during excavation of material from Unnamed Shoal A and breakwater construction could limit recreational boating. A Notice to Mariners would be issued when necessary to notify boaters in advance so that they can select alternate destinations without substantially affecting their activities or experience.

### **Consistency Determination**

The Virginia Coastal Resources Management Program contains the following applicable enforceable policies:

- **Fisheries Management.** Administered by Virginia Marine Resources Commission (VMRC) and the Virginia Department of Game and Inland Fisheries (VDGIF), this program stresses the conservation and enhancement of shellfish and finfish resources and the promotion of commercial and recreational fisheries. The State Tributyltin (TBT) Regulatory Program is also part of the Fisheries Management program. The TBT program monitors boating activities and boat painting activities to ensure compliance with TBT regulations promulgated pursuant to the amendment. The VMRC, VDGIF, and Virginia Department of Agriculture and Consumer Services share enforcement responsibilities.
- **Subaqueous Lands Management.** Administered by VMRC, this program establishes conditions for granting permits to use state-owned bottomlands.
- **Wetlands Management.** Administered by VMRC, Virginia Department of Environmental Quality (VDEQ), and the Accomack County Wetland Board, the wetlands management program preserves and protects both tidal and non-tidal wetlands.
- **Dunes and Beaches Management.** Administered by VMRC and the Accomack County Wetland Board, the purpose of this program is to prevent the destruction and/or alteration of primary dunes.
- **Non-point Source Water Pollution Control.** Administered by the Virginia Department of Environmental Quality, the Virginia Erosion and Sediment Control Law is intended to minimize 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.
- **Point Source Water Pollution Control.** Administered by the State Water Control Board, the Virginia Pollution Discharge Elimination System and Virginia Pollution Abatement permit programs regulate point source discharges to Virginia's waterways.
- **Shoreline Sanitation.** Administered by the Virginia Department of Health, this program regulates the installation of septic tanks to protect public health and the environment.
- **Point Source Air Pollution Control.** Administered by the State Air Pollution Control Board, this program implements the Federal Clean Air Act through a legally enforceable State Implementation Plan.
- **Coastal Lands Management.** Administered by VDEQ's Office of Ecology and the Chesapeake Bay Local Assistance Department, the Chesapeake Bay Preservation Act guides land development in coastal areas to protect the Chesapeake Bay and its tributaries.

Based upon the following information, data, and analysis, NASA finds that the project activities proposed and evaluated under the Shoreline Enhancement and Restoration Project EA are consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Resources Management Program. The following table below summarizes NASA's analysis supporting this determination.

Virginia Policy	Consistent?	Analysis
Fisheries Management	Yes	There would be short term site specific adverse effects on fish habitat within the fill placement backpassing, and breakwater construction areas due to temporary burial of existing benthic habitat and increased levels of turbidity during and immediately after sand placement. Benthic habitats would recover post-project.
Subaqueous Lands Management	Yes	The proposed renourishment would affect existing subaqueous areas in the nearshore ocean environment. Elevated turbidity in marine waters would occur during and immediately after beach fill, backpassing, and breakwater construction. Recent correspondence with VMRC indicated they would issue new permits for beach renourishment.
Wetlands Management	Yes	Project activities would not impact vegetated wetlands.
Dunes and Beaches Management	Yes	The project would restore the previously constructed dune system. As discussed above under Subaqueous Lands Management, VMRC indicated they would issue new permits for beach renourishment.
Non-point Source Water Pollution Control	Yes	Project activities have the potential to increase non-point source runoff to the Atlantic Ocean. NASA would implement appropriate best management practices to avoid these impacts.
Point Source Water Pollution Control	Yes	The project would not involve a new point source discharge to Virginia waters.
Shoreline Sanitation	Yes	The project would not involve the construction of septic tanks.
Point Source Air Pollution Control	Yes	Use of fossil fuel-burning equipment for construction of the nearshore breakwaters and the movement of sand would generate emissions of both criteria pollutants and greenhouse gases. However, the project activities would not violate Federal or Virginia air quality standards.
Coastal Lands Management	Yes	The project would not include land development activities that would impact the Chesapeake Bay or its tributaries. Moreover, 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.

Pursuant to 15 CFR section 930.41, the Virginia Coastal Resources 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 NASA on the 60<sup>th</sup> day from receipt of this determination. The Commonwealth's response should be sent to:

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# *COMMONWEALTH of VIRGINIA*

## *DEPARTMENT OF ENVIRONMENTAL QUALITY*

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January 17, 2019

Shari Miller  
ATTN: Code 250 W  
National Aeronautics and Space Administration  
Goddard Space Flight Center  
Wallops Flight Facility  
Wallops Island, VA 23337-5099

RE: Comments on the Draft Environmental Assessment and Federal Consistency Determination for the Wallops Flight Facility Shoreline Enhancement and Restoration Project proposed by the National Aeronautics and Space Administration, Accomack County, VA (DEQ 18-171F)

Dear Ms. Miller:

The Commonwealth of Virginia has completed its review of the above-referenced documents. The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of federal environmental documents submitted under the National Environmental Policy Act (NEPA) and responding to appropriate federal officials on behalf of the Commonwealth. DEQ is also responsible for coordinating Virginia's review of federal consistency documents submitted pursuant to the Coastal Zone Management Act (CZMA) and providing the state's response. This is in response to the December 2018 Draft Environmental Assessment (DEA) and Federal Consistency Determination (FCD) submitted by the National Aeronautics and Space Administration (NASA) for the above referenced project. The following agencies participated in the review of this proposal:

Department of Environmental Quality  
Department of Game and Inland Fisheries (DGIF)  
Department of Conservation and Recreation (DCR)  
Department of Health (VDH)  
Marine Resources Commission (MRC)  
Virginia Institute of Marine Sciences (VIMS)

In addition, the Department of Historic Resources (DHR), Accomack-Northampton Planning District Commission and Accomack County were invited to comment on the proposal.

## **PROJECT DESCRIPTION**

NASA proposes to conduct the Wallops Flight Facility (WFF) Shoreline Enhancement and Restoration Project on Wallops Island which fronts the Atlantic Ocean in Accomack County. The project involves the re-nourishment of the beach along the Wallops Island shoreline infrastructure protection area, utilizing approximately 1.3 million cubic yards of sand. The sand material would be taken from either the north Wallops Island beach (Alternative 1), which is an area that has been accreting due to transport of material from the south, or from Unnamed Shoal A (Alternative 2) which is an offshore sand ridge located seven miles east of Wallops Island in the outer continental shelf in the Atlantic Ocean, at the southern end of the Assateague ridge field. Unnamed Shoal A has been used as a sand source for prior re-nourishment projects (in 2012 and 2014). In addition, a series of six nearshore, detached, parallel breakwaters with a total length of 780 feet are proposed for construction approximately 200 feet offshore prior to the re-nourishment being completed (Alternative 3). Alternative 3 would be combined with Alternative 1 or 2, depending which is chosen, for the complete project scope. The DEA does not identify a preferred alternative. However, based on the information included in the Joint Permit Application (JPA) (#18-1590) that has been filed for this project and that is included as Appendix B of the DEA, a combination of Alternative 1 and 3 appears to be the de facto Preferred Alternative. Two state agencies that participated in the review of the DEA have expressed a strong preference for Alternative 2 (refer to the Preferred Alternative Recommendation section on page 19).

In addition, the DEA includes a Federal Consistency Determination (Appendix C) which finds the proposed action consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Zone Management Program.

## **BACKGROUND**

DEQ previously reviewed a Final Programmatic Environmental Impact Statement (PEIS) for the Shoreline Restoration and Infrastructure Protection Program (SRIPP) at Wallops Island (DEQ 10-156F) in November 2010. The purpose of the SRIPP was to reduce the potential for damage to, or loss of, existing NASA, U.S. Navy, and Mid-Atlantic Regional Spaceport assets on Wallops Island from wave impacts associated with storm events. The project involved extending the existing rock seawall a maximum of 4,600 feet south of its southernmost point and placing sand dredged from Unnamed Shoal A on the Wallops Island shoreline. The SRIPP also planned for re-nourishment cycles every five years, with a total of nine re-nourishment cycles over the 50-year lifecycle of the SRIPP. A Record of Decision (ROD) for this project was issued on December 13, 2010. In October 2012 Hurricane Sandy caused damage to the seawall and losses to the recently nourished beach. Repairs were made in September 2014, however the sand volume has been reduced by an average of 1,014,337 cubic yards compared to the 2014 sand volumes following storms in 2015 (Hurricane Joaquin), 2016 (Winter Storm Jonas) and 2018 (Winter Storm Riley). The constructed beach system has successfully reduced storm damage to the NASA Wallops Island launch range infrastructure but the seaward half of the beach berm has been lowered by more

than three feet, thus reducing its effectiveness for future storm protection. The currently proposed action will address storm damage and sand loss that has occurred since the September 2014 repairs.

## ENVIRONMENTAL IMPACTS AND MITIGATION

**1. Surface Waters and Non-tidal Wetlands.** According to the DEA (page 3-7), Alternative 1 (North Wallops Island beach borrow area) could have short-term near-shore water quality impacts related to construction activities and the potential for the accidental release of contaminants or petroleum products from construction vehicles. A turbidity plume would also be generated at the placement site. Impacts from Alternative 2 (Unnamed Shoal A borrow area) would be similar as sediment would become suspended in the water column during dredging and pump out operations. The impacts to offshore water quality are expected to be temporary. Offshore turbidity would similarly result from Alternative 3 during the breakwater construction. The DEA notes that DEQ is expected to waive the requirement for a permit in lieu of receipt of a permit from the U.S. Army Corps of Engineers (Corps) and VMRC. The FCD (Appendix C, C-11) states that vegetated wetlands will not be impacted by the project.

**1(a) Agency Jurisdiction.** The State Water Control Board promulgates Virginia's water regulations covering a variety of permits to include the [Virginia Pollutant Discharge Elimination System Permit](#) (VPDES) regulating point source discharges to surface waters, Virginia Pollution Abatement Permit regulating sewage sludge, storage and land application of biosolids, industrial wastes (sludge and wastewater), municipal wastewater, and animal wastes, the [Surface and Groundwater Withdrawal Permit](#), and the [Virginia Water Protection \(VWP\) Permit](#) regulating impacts to streams, wetlands, and other surface waters. The VWP permit is a state permit which governs wetlands, surface water, and surface water withdrawals and impoundments. It also serves as §401 certification of the federal Clean Water Act §404 permits for dredge and fill activities in waters of the U.S. The VWP Permit Program is under the Office of Wetlands and Stream Protection, within the DEQ Division of Water Permitting. In addition to central office staff that 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:

- Clean Water Act, §401;
- Section 404(b)(i) Guidelines Mitigation Memorandum of Agreement (2/90);
- State Water Control Law, [Virginia Code](#) section 62.1-44.15:20 *et seq.*; and
- State Water Control *Regulations*, 9 VAC 25-210-10.

**1(b) Agency Findings.** The VWP program at the DEQ Tidewater Regional Office (TRO) notes that the JPA for this project was received on October 9, 2018 (#18-1590). On December 12, 2018, DEQ waived the requirement for a VWP permit pursuant to 9 VAC 25-210-220.B.

**1(c) Requirement.** Adhere to the VWP Waiver that has been issued for this project.

**1(d) CZMA Federal Consistency.** Provided the required VWP Permit Waiver is adhered to, this project would be consistent to the maximum extent practicable with the wetlands management enforceable policy of the CZM Program and the VWP Permit Program (see Federal Consistency under the CZMA section below for additional information).

**2. Subaqueous Lands and Tidal Wetlands.** The DEA (page 3-6) indicates that VMRC issued an extension to the existing permit 10-2003 which expires in 2021 and authorized the 2014 rehabilitation of the seawall and beach re-nourishment. Following submittal of an updated Joint Permit Application, VMRC determined that a new permit will be required for subaqueous lands impacts to include the current design for beach re-nourishment, and dredging at the north end of the Island.

The FCD (Appendix C, page C-11) indicates that nearshore subaqueous lands would be impacted by the proposal to nourish the beach and construct the breakwaters.

**2(a) Agency Jurisdiction.** The Virginia Marine Resources Commission regulates encroachments in, on or over state-owned subaqueous beds as well as tidal wetlands pursuant to Virginia Code §28.2-1200 through 1400. For nontidal waterways, VMRC states that it has been the policy of the Habitat Management Division to exert jurisdiction only over the beds of perennial streams where the upstream drainage area is 5 square miles or greater. The beds of such waterways are considered public below the ordinary high water line.

**2(b) Agency Finding.** VMRC stated that a JPA was received for this project on October 9, 2018 (JPA# 18-1590). The JPA is currently under review and any permit issued by the VMRC would specify the necessary special conditions for the project. VMRC did not indicate that tidal wetlands will be impacted.

**2(c) Requirement.** A VMRC permit for the submerged land encroachments is required. The applicant must adhere to any necessary special conditions included in the permit.

**2(d) VIMS Finding.** VIMS submitted comments to VMRC in response to NASA's JPA and provided a copy (attached) to DEQ in response to the DEA and FCD. VIMS notes that the project has the potential to alter local land and marine resources differently than would occur via natural processes. VIMS finds that the placement of the six stone breakwaters with sand nourishment landward of each structure will have a minimal direct impact on state-owned subaqueous resources. The proposed shoreline nourishment will result in temporary and minimal impacts to the littoral marine environment. VIMS concludes that minimal adverse impacts will result within the footprint of the shoreline stabilization features.

Chincoteague Inlet may be affected by the proposed sand borrowing from North Wallops Island. The mining will likely widen the inlet and result in subsequent shoaling to an unknown degree. If the sand borrowing does not occur from North Wallops Island, VIMS predicts an unknown degree of effect on Chincoteague Inlet if sand continues



migrating north towards the inlet.

Refer to the attached letter dated January 8, 2019 for greater detail.

**2(e) CZMA Federal Consistency.** On the condition that a VMRC permit is approved for this project, this project would be consistent to the maximum extent practicable with the subaqueous lands management enforceable policy of the CZM Program (see Federal Consistency under the CZMA section below for additional information).

**3. Dunes Management.** The DEA (page 3-6) indicates that VMRC issued an extension to an existing permit 10-2003 (expires 2021) on February 2, 2016 for rehabilitation of the seawall and beach re-nourishment. Following submittal of an updated Joint Permit Application, VMRC determined that a new permit will be required for dune and beach impacts from the currently proposed scope of work for beach re-nourishment and dredging at the north end of the Island.

The FCD (Appendix C, page C-11) indicates that the project will restore the previously constructed dune system. A new permit will be required for the beach re-nourishment which will impact dunes.

**3(a) Agency Jurisdiction.** 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).

**3(b) Agency Finding.** VMRC stated that a JPA was received for this project on October 9, 2018 (JPA# 18-1590). The JPA is currently under review and any permit issued by the VMRC would specify the necessary special conditions for the project.

**3(c) Requirement.** A VMRC permit for the dune impacts from this project is required. The applicant must adhere to any necessary special conditions included in the permit.

**3(d) VIMS Findings.** VIMS submitted comments to VMRC in response to NASA's JPA and provided a copy (attached) to DEQ in response to the DEA and FCD. If North Wallops Island (Alternative 1) is used for the sand collection, beach and dunes resources will be removed within the footprint of the mining area. Adjacent beaches and dunes are expected to be destabilized as a result of the mining activity.

Indirect and remote impacts to marine resources may occur depending on the sand source and the altered long-term sand transport patterns that result from the proposed breakwaters. The proposed North Wallops Island mining site accreted very rapidly compared with expected natural accretion due to large volumes of additional sand that was placed to nourish Wallops Island migrating northward as a result of significant storm events. VIMS is confident that the area in question will not retain its post-mining form nor naturally fill again to its current profile from wave and tidal action. If the sand mining occurs at North Wallops Island, secondary erosional impacts to dunes and

beaches adjacent to the mining area should be expected, but VIMS does not have near-term concerns for significant dune erosion.

The breakwater placement is expected to have an impact on the natural sediment transport to the north around Fishing Point and across Chincoteague inlet. The breakwaters will affect the rate and volume of sand transport in the vicinity of the structures, thus contributing to long-term effects to Northern Wallops Island as a result of disruption of northward sediment transport. However, once maximum sand capacity is reached at the breakwaters, longshore transport by wind and waves has the potential to occur at rates and volumes similar to natural processes.

Refer to the attached letter dated January 8, 2019 for greater detail.

**3(e) VIMS Recommendations.** Utilize an offshore source for the sand nourishment material, to eliminate direct impacts to beaches and dunes on northern Wallops Island. This site could be any approved offshore source, including Unnamed Shoal A (Alternative 2). If offshore sand is used, consider management strategies and structures that semi-contain the sand within and around the beach mining location at North Wallops Island to prevent an abnormally large volume of sand moving into Chincoteague inlet.

Continue the shoreline monitoring program to continue providing data to form the basis for future adaptive management.

Consider applying addition breakwaters, designed to contain all sand nourishment and nourish to the maximum capacity. This would stabilize the shoreline to the maximum extent possible while providing added protection to the Wallops Island shoreline and NASA infrastructure.

**3(f) CZMA Federal Consistency.** On the condition that a VMRC permit is approved for this project, this project would be consistent to the maximum extent practicable with the dunes management enforceable policy of the CZM Program (see Federal Consistency under the CZMA section below for additional information).

**4. Erosion and Sediment Control and Stormwater Management.** The DEA (page 1-3) notes that the purpose of the project is to reduce the rate of shoreline erosion along Wallops Island and re-nourish areas that have been depleted as a result of wind and wave action from storm activity.

The FCD (Appendix C, C-11) states that the construction period has the potential to increase non-point source runoff to the Atlantic Ocean and that Best Management Practices (BMPs) will be in place to mitigate these impacts.

**4(a) Agency Jurisdiction.** The DEQ [Office of Stormwater Management](#) administers the following laws and regulations governing construction activities:

- Virginia Erosion and Sediment Control (ECS) Law (§ 62.1-44.15:51 *et seq.*) and Regulations (9VAC25-840) (*VESCL&R*);
- Virginia Stormwater Management Act (§ 62.1-44.15:24 *et seq.*) (*VSWML*);
- Virginia Stormwater Management Program (VSMP) regulation (9VAC25-870) (*VSWMR*); and
- 2014 General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Stormwater from Construction Activities (9VAC25-880).

In addition, DEQ is responsible for 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 (9VAC25-890-40).

#### **4(b) Requirements.**

**4(b)(i) Erosion and Sediment Control and Stormwater Management.** NASA and its authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with *VESCL&R* and Virginia Stormwater Management Laws and Regulations (*VSWML&R*), including coverage under the general permit for stormwater discharges from construction activities, and other applicable federal non-point 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, NASA must prepare and implement an erosion and sediment control (ESC) plan to ensure compliance with state law and regulations. The ESC plan should be submitted to the DEQ for review for compliance. NASA 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. A stormwater management plan may also be required.

**4(b)(ii) Virginia Stormwater Management Program 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 VPDES 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 it must address water quality and quantity in accordance with the *Virginia Stormwater Management Program (VSMP) Regulations*. General information and registration forms for the General Permit are available on DEQ's website at [www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/ConstructionGeneralPermit.aspx](http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/ConstructionGeneralPermit.aspx).

**4(c) CZMA Federal Consistency.** The project would be consistent to the maximum extent practicable with the nonpoint source pollution control enforceable policy of the Virginia CZM Program, provided the activities comply with the above requirements, and applicable permits are obtained as necessary (see Federal Consistency under the CZMA section below for additional information).

**5. Point Source Pollution Control.** The FCD (Appendix, page C-11) states that the project will not create a new point source discharge.

**5(a) Agency Jurisdiction.** 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 are administered under the Virginia Water Protection Permit program.

**5(b) Agency Finding.** TRO stated that the Wallops Flight Facility is covered under VPDES Individual Permit (VA0024457).

**5(c) Agency Requirement.** Adhere to the existing VPDES permit for this facility. Coordinate with DEQ TRO regarding any necessary permit modifications or map updates if there are any industrial-related activities that will discharge pollutants to surface waters or facility changes that may require map or permit revisions.

**5(d) CZMA Federal Consistency.** Provided adherence to the existing VPDES permit, and proper updates as necessary, the project would be consistent to the maximum extent practicable with the point source pollution control enforceable policy of the Virginia CZM Program (see Federal Consistency under the CZMA section below for additional information).

**6. Chesapeake Bay Preservation Areas.** The DEA (page 3-12) notes that Wallops Island is one of 12 barrier islands in Virginia that fronts the Atlantic Ocean. The FCD (Appendix C, page C-11) states that the project does not include land-disturbing activities that will impact the Chesapeake Bay or its tributaries.

**6(a) Agency Jurisdiction.** The DEQ Office of Local Government Programs (OLGP) administers the Chesapeake Bay Preservation Act (Virginia Code §62.1-44.15:67 *et seq.*) and Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 25-830-10 *et seq.*). Each Tidewater locality must adopt a program based on the Chesapeake Bay Preservation Act and the Chesapeake Bay Preservation Area Designation and Management Regulations. The Act and regulations recognize local government responsibility for land use decisions and are designed to establish a framework for compliance without dictating precisely what local programs must look like. Local governments have flexibility to develop water quality preservation programs that reflect unique local characteristics and embody other community goals. Such flexibility

also facilitates innovative and creative approaches in achieving program objectives. The regulations address nonpoint source pollution by identifying and protecting certain lands called Chesapeake Bay Preservation Areas. The regulations use a resource-based approach that recognizes differences between various land forms and treats them differently.

**6(b) Agency Findings.** The proposed project is located in the Atlantic Ocean watershed and is outside of the Chesapeake Bay watershed; thus there are no comments or requirements under the Chesapeake Bay Preservation Area Designation and Management Regulations or the *Chesapeake Bay Preservation Act*.

**6(c) CZMA Federal Consistency.** The project is located outside of the Chesapeake Bay watershed. Therefore, the project is consistent to the maximum extent practicable with the coastal lands management enforceable policy of the Virginia CZM Program (see Federal Consistency under the CZMA section below for additional information).

**7. Air Pollution Control.** According to the DEA (page 3-12), the primary source of air pollution associated with this project would be emissions from the operation of mobile sources such as dredges and earth moving equipment. The anticipated emissions from the activity would not exceed the EPA comparative threshold (250 tons per year) of any criteria pollutant, under which an emission would be considered minor.

**7(a) Agency Jurisdiction.** The [DEQ Air Division](#), on behalf of the State Air Pollution Control Board, is responsible for developing regulations that implement Virginia's Air Pollution Control Law ([Virginia Code §10.1-1300 et seq.](#)). 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 DEQ regional office is directly responsible for the issuance of necessary permits to construct and operate all stationary sources in the region as well as monitoring emissions from these sources for compliance. In the case of certain projects, additional evaluation and demonstration must be made under the general conformity provisions of state and federal law.

The Air Division regulates emissions of air pollutants from industries and facilities and implements programs designed to ensure that Virginia meets national air quality standards. The most common regulations associated with major projects are:

- Open burning: 9 VAC 5-130 *et seq.*
- Fugitive dust control: 9 VAC 5-50-60 *et seq.*
- Permits for fuel-burning equipment: 9 VAC 5-80-1100 *et seq.*

**7(b) Agency Findings.** According to the DEQ Air Division, the project site is located in

a designated ozone attainment area.

### **7(c) Requirements.**

**7(c)(i) Fugitive Dust.** During construction, fugitive dust must be kept to a minimum by using control methods outlined in 9 VAC 5-50-60 *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 chemicals for dust control;
- 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.

**7(c)(ii) Open Burning.** If project activities include the open burning of construction material or the use of special incineration devices, this activity must meet the requirements under 9 VAC 5-130 *et seq.* of the *Regulations* for open burning, and may require a permit. The *Regulations* provide for, but do not require, the local adoption of a model ordinance concerning open burning. The applicant should contact locality officials to determine what local requirements, if any, exist.

**7(d) CZMA Federal Consistency.** The project will be consistent to the maximum extent practicable with the air pollution control enforceable policy of the CZM Program, provided adherence to the above requirements (see Federal Consistency under the CZMA section below for additional information).

**8. Solid and Hazardous Wastes and Hazardous Materials.** The DEA (page 3-2) states the 2010 Final SRIPP PEIS concluded that there would be a negligible impact on hazardous materials and waste from shoreline stabilization activities.

**8(a) Agency Jurisdiction.** On behalf of the Virginia Waste Management Board, the [DEQ Division of Land Protection and Revitalization](#) is responsible for carrying out the mandates of the Virginia Waste Management Act (Virginia Code §10.1-1400 *et seq.*), as well as meeting Virginia's federal obligations under the Resource Conservation and Recovery Act and the Comprehensive Environmental Response Compensation Liability Act (CERCLA), commonly known as Superfund. The DEQ Division of Land Protection and Revitalization also administers those laws and regulations on behalf of the State Water Control Board governing Petroleum Storage Tanks (Virginia Code §62.1-44.34:8 *et seq.*), including Aboveground Storage Tanks (9VAC25-91 *et seq.*) and Underground Storage Tanks (9VAC25-580 *et seq.* and 9VAC25-580-370 *et seq.*), also known as 'Virginia Tank Regulations', and § 62.1-44.34:14 *et seq.* which covers oil spills.

*Virginia:*

- Virginia Waste Management Act, Virginia Code § 10.1-1400 *et seq.*
- *Virginia Solid Waste Management Regulations*, 9 VAC 20-81
  - (9 VAC 20-81-620 applies to asbestos-containing materials)
- *Virginia Hazardous Waste Management Regulations*, 9 VAC 20-60
  - (9 VAC 20-60-261 applies to lead-based paints)
- *Virginia Regulations for the Transportation of Hazardous Materials*, 9 VAC 20-110.

*Federal:*

- Resource Conservation and Recovery Act (RCRA), 42 U.S. Code sections 6901 *et seq.*
- U.S. Department of Transportation *Rules for Transportation of Hazardous Materials*, 49 Code of Federal Regulations, Part 107
- Applicable rules contained in Title 40, *Code of Federal Regulations*.

**8(b) Agency Findings.** The DEQ TRO Petroleum storage tank cleanup, tank compliance/inspections, and waste permit programs had no comments on this proposal.

**8(c) Requirements.**

**8(c)(i) Waste Management.** Any soil or groundwater 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. All construction waste, including excess soil, must be characterized in accordance with the *Virginia Hazardous Waste Management Regulations* prior to disposal at an appropriate facility. It is the generator's responsibility to determine if solid waste meets the criteria of a hazardous waste and is subsequently managed appropriately.

**8(c)(ii) Petroleum Releases.** If evidence of a petroleum release is discovered during implementation of this project, it must be reported to DEQ, as authorized by Virginia Code § 62.1-44.34.8 through 9 and 9 VAC 25-580-10 *et seq.*

**8(d) Pollution Prevention Recommendation.** DEQ recommends that the NASA 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.

**9. Pesticides and Herbicides.** DEQ recommends that the use of herbicides or pesticides for construction or landscape maintenance should be in accordance with the principles of integrated pest management. The least toxic pesticides that are effective in controlling the target species should be used to the extent feasible. Contact the Department of Agriculture and Consumer Services at (804) 786-3501 for more

information.

**10. Natural Heritage Resources.** The DEA (page 3-20) notes that Wallops Island is home to a diverse mixture of species both onshore and offshore. Wallops Island Beach provides an important nesting and foraging habitat for migratory waterbirds. It is also used by the diamondback terrapin as a nesting site. Per its Protected Species Monitoring Program, NASA conducts regular monitoring of Wallops Island Beach between March and September to determine the level of bird nesting activity within and adjacent to the project area. The offshore portion of the project area is used by seabirds during the winter months as foraging grounds.

Temporary noise and visual disturbances are likely to occur to foraging habitat. Additionally, the placement of sand on the shoreline during re-nourishment activities would result in a reduction of food sources.

**10(a) Agency Jurisdiction.**

**10(a)(i) The Virginia Department of Conservation and Recreation's (DCR) Division of Natural Heritage (DNH).** DNH's mission is conserving Virginia's biodiversity through inventory, protection and stewardship. The Virginia Natural Area Preserves Act (Virginia Code §10.1-209 through 217), authorized DCR to maintain a statewide database for conservation planning and project review, protect land for the conservation of biodiversity, and the protect and ecologically manage the natural heritage resources of Virginia (the habitats of rare, threatened and endangered species, significant natural communities, geologic sites, and other natural features).

**10(a)(ii) Virginia Department of Agriculture and Consumer Services (VDACS):** The Endangered Plant and Insect Species Act of 1979 (Virginia Code Chapter 39 §3.1-1020 through 1030) authorizes VDACS to conserve, protect and manage endangered and threatened species of plants and insects. Under a Memorandum of Agreement established between VDACS and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species.

**10(b) Agency Findings.** DCR's Division of Natural Heritage (DNH) searched its Biotics Data System for occurrences of natural heritage resources in the project vicinity. The Wallops – Assawoman Islands Conservation Site is located within the project site. Wallops – Assawoman Islands Conservation Site has been given a biodiversity significance ranking of B2, which represents a site of very high significance. Twenty-one natural heritage resources of concern were identified at this site. Refer to the attached DCR memorandum dated January 7, 2019 for a listing of the resources.

DCR supports the planned mitigation measures to reduce the probability and intensity of potential effects to protected species. According to DCR's species distribution model, Sea-beach amaranth (*Amaranthus pumilus*, G2/S1/LT/LT) may exist within the project site.



**10(b)(i) State-listed Plant and Insect Species.** DCR found that the proposed project will not affect any documented state-listed plants or insects.

**10(b)(ii) State Natural Area Preserves.** There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

**10(c) Recommendations.** Due to the legal status of some of the species found in the Wallops – Assawoman Islands Conservation Site, DCR recommends continued coordination with the US Fish and Wildlife Service (USFWS) to ensure compliance with protected species legislation.

Coordinate with DCR if any occurrences of Sea-beach amaranth are documented.

Contact DCR-DNH to secure updated information on natural heritage resources if the scope of the project changes and/or six months has passed before it is utilized. New and updated information is continually added to the Biotics Data System.

**11. Wildlife Resources, Fisheries, and Protected Species.** The DEA (page 3-20) notes that the Wallops Island Beach provides an important nesting and foraging habitat for migratory waterbirds including gulls, terns, and sandpipers. Waterbird numbers peak on the beach during the fall and spring migrations. Additionally, the diamondback terrapin has regularly nested on the north beach and locations on the bay side of the island. Seabirds use the offshore portion of the project area as foraging grounds during winter months. Temporary disturbances related to construction activity will include noise and visual impacts to these species. Foraging areas are anticipated to recover within one year for onshore areas and two years for offshore areas. Time-of-year restrictions would be followed for Special Status Species such as no activity at the north Wallops Island borrow area during piping plover and loggerhead sea turtle nesting season.

The EIR (page 3-23) notes that there are managed fishery species located in the area of Unnamed Shoal A and the north Wallops Island beach. Commercially important shellfish fisheries (sea scallop and blue crab) are also present. The Wallops Island beach project area is coincident with eight Essential Fish Habitat (EFH) designations, while unnamed Shoal A is coincident with an additional three EFH designations. The proposed project would episodically increase water turbidity and temporarily displace motile species. Benthos species are expected to have 100 percent mortality, though species recovery is expected to begin immediately after the beach replenishment is completed.

#### **11(a) Agency Jurisdiction.**

**11(a)(i) The Virginia 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.Code §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. For more information, see the DGIF website at [www.dgif.virginia.gov](http://www.dgif.virginia.gov).

**11(a)(ii) VDH Shellfish Sanitation.** The VDH's Division of Shellfish Sanitation 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.

#### **11(b) Agency Findings.**

**11(b)(i) DGIF.** DGIF is concerned about the proposal to use the north end of Wallops Island for sand excavation due to the area supporting nesting federal-listed endangered piping plovers and American oystercatchers which are designated as a Tier IIa Species of Greatest Conservation Need. In addition, DGIF believes the area provides nesting habitat for the state-listed threatened Wilson's plover, the federally-listed threatened loggerhead sea turtle, diamondback terrapins (Tier II Species of Greatest Conservation Need (SGCN)), and other species that are identified in Virginia's Wildlife Action Plan as SGCN. DGIF believes that sand excavation in this area is likely to result in direct adverse impacts upon these species as well as long-term adverse impacts upon the substrate which provides the nesting habitat. Based on these concerns, DGIF does not support the removal of sand from the Wallops island beach (Alternative I).

DGIF believes that Alternative 2, using Unnamed Shoal Area A for sand collection, is preferable to removal from the north end of Wallops Island, assuming it is performed with Best Management Practices (BMPs) in place to minimize impacts upon the oceanic environment and its inhabitants. Alternative 2 is not without impacts upon benthic communities and the wildlife that rely on these communities; however, if the project moves forward, DGIF prefers the removal of sand from areas other than the north end of Wallops Island where listed species are known to nest.

DGIF understands that erosive action along this section of the Eastern Shore is primarily due to northerly near-shore currents that continually transport sand from the southern end of the island to the northern end. As such, it is not clear how breakwaters constructed parallel to the shore will be effective in reducing sand loss from the southern end. Therefore, it is expected that future beach nourishment and associated dredging/borrow areas will be necessary for long-term infrastructure protection. There was no information in the JPA that DGIF reviewed about how placement of fill and

installation of breakwaters in this area will impact barrier islands to the south of this site, which are also populated by nesting birds and sea turtles. Without these additional details, it is difficult for DGIF make any determinations about regional wildlife dynamics and population effects resulting from the proposed project.

**11(b)(ii) VDH.** VDH DSS did not comment on the proposal.

**11(b)(iii) VIMS.** According to VIMS, the post-mining sand flat at North Wallops Island beach will create a temporary intertidal area that may be utilized by crabs and fishes endemic to the near-shore and surf zone. Some individuals may become trapped and experience mortality at low tide. This shoreline feature is not expected to persist and losses are expected to be short-term and minimal.

**11(c) DGIF Recommendation.** DGIF recommends that Alternative 2, Unnamed Shoal A, be chosen as the sand borrow site. Utilize BMPs to minimize impacts to the oceanic environment and marine wildlife.

Routinely monitor and survey the project area ahead of work being performed so that any new sea turtle or shorebird nesting activity and nesting locations can be protected from harm. Ahead of project commencement, develop a plan of action to address newly found nest sites so that the plan can be put into action immediately upon documentation of a site.

Time construction and beach fill operations to avoid avian and sea turtle nesting seasons. Adhere to a time-of-year restriction (TOYR) of April 1 through November 30 or until the last turtle hatches or the nest is determined to have failed.

Monitor invertebrates at the borrow site located at the north end of Wallops Island, if that area is used for sand excavation, so that long-term impacts on the island's benthic invertebrate forage base can be determined and addressed, as necessary.

Additional consideration should be given to the significant impacts the project is likely to have on local wildlife, particularly the listed and tiered species mentioned above. Coordinate with DGIF's Eastern Shore Biologist (Ruth Boettcher, 757-709-0766) to ensure appropriate consideration of wildlife and their habitats during project design and implementation.

**11(d) DGIF Conclusion.** DGIF defers the federal consistency determination to VMRC since the site drains to marine waters.

As proposed (using Alternative 1), DGIF determined that this project is likely to result in adverse impacts upon beach nesting birds and seas turtles. DGIF does not support the selection of Alternative 1. DGIF may determine that mitigation to compensate for unavoidable impacts upon these species is necessary.

DGIF recommends the selection of Alternative 2, using Unnamed Shoal Area A for sand

collection, assuming it is performed with Best Management Practices (BMPs) in place to minimize impacts upon the oceanic environment and its inhabitants.

**11(e) CZMA Federal Consistency.** The proposed project will be consistent to the maximum extent practicable with the fisheries management enforceable policy of the CZM Program, provided NASA obtains and complies with any applicable conditions of a VMRC permit.

**12. Public Water Supply.** The DEA does not address impacts to public water supplies.

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

**12(b) Agency Findings.** VDH-ODW found that there are no apparent impacts to public drinking water sources as a result of this project.

**13. Historic and Archeological Resources.** The DEA (page 3-34) states that in accordance with Section 106 and 110 of the National Historic Preservation Act, NASA developed a Programmatic Agreement with the Virginia State Historic Preservation Office and Advisory Council on Historic Preservation. The agreement outlines how WFF manages cultural resources as a part of its operations and missions. Section 106 consultation was opened while NASA prepared the DEA and DHR issued a Finding of No Historic Properties Affected on August 14, 2018.

**13(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 State's Historic Preservation Office, ensures that federal actions comply with Section 106 of the National Historic Preservation Act of 1962 (NHPA), as amended, and its implementing regulation at 36 CFR 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.

**13(b) Agency Findings.** NASA consulted with DHR during development of the DEA and found that no historic properties will be affected (Appendix G). The agency has fulfilled its Section 106 responsibilities, according to the documentation provided with the DEA.

DHR did not provide additional comment on the DEA.

**13(c) Agency Requirement.** If for any reason the project cannot be completed as documented in the finding of No Historic Properties Affected, Section 106 coordination

should be reopened.

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

**14(a) Recommendations.** We have several pollution prevention recommendations that may be helpful in the implementation of this project:

- Consider development of an effective Environmental Management System (EMS). An effective EMS will ensure that the proposed facility is committed to complying with environmental regulations, reducing risk, minimizing 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 (VEEP). VEEP provides recognition, annual permit fee discounts, and the possibility for alternative compliance methods.
- 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 (such as an EMS) 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 construction and design. These could include asphalt and concrete containing recycled materials, and integrated pest management in landscaping, among other things.
- Integrate pollution prevention techniques into the facility maintenance and operation, to include inventory control for centralized storage of hazardous materials and source reduction (fixing leaks, energy efficient products). Maintenance facilities should have sufficient and suitable space to allow for effective inventory control and preventive maintenance.

DEQ's Office of Pollution Prevention provides information and technical assistance relating to pollution prevention techniques and EMS. For more information, contact DEQ's Office of Pollution Prevention, Meghann Quinn at (804) 698-4021.

## **FEDERAL CONSISTENCY UNDER THE COASTAL ZONE MANAGEMENT ACT**

Pursuant to the Coastal Zone Management Act of 1972 (§ 1456(c)), as amended, and the federal consistency regulations implementing the CZMA (15 CFR Part 930, Subpart

C, § 930.30 *et seq.*), federal actions that can have reasonably foreseeable effects on Virginia's coastal uses or resources must be conducted in a manner which is consistent, to the maximum extent practicable, with the Virginia Coastal Zone Management (CZM) Program. The CZM Program is comprised of a network of programs administered by several agencies. In order to be consistent with the CZM Program, the federal agency must obtain all the applicable permits and approvals listed under the enforceable policies of the CZM Program prior to commencing the project.

### **Federal Consistency Public Participation**

In accordance with 15 CFR § 930.2, public notice of the proposed action was published in the OEIR Program Newsletter and on DEQ's web site from December 14, 2018 to January 4, 2019. No public comments were received in response to the notice.

### **Federal Consistency Determination**

A Federal Consistency Determination for the proposed Wallops Flight Facility Shoreline Enhancement and Restoration Project was included in Appendix C of the DEA received on December 6, 2018. The document provided an analysis of the project's impact on each of the nine enforceable policies. According to the FCD, the project will be consistent to the maximum extent practicable with Virginia's Coastal Zone Management Program.

The FCD states that proposed activity will have no effect on the following enforceable policies of the Coastal Zone Management Program: wetlands management, point source pollution control, coastal lands management and shoreline sanitation.

The project is expected to affect the following enforceable policies: fisheries management, subaqueous lands management, dunes management, non-point source pollution control, and air pollution control. These impacts and jurisdictional agency comments, recommendations, and requirements are discussed above in the "Environmental Impacts and Mitigation" section of this document.

### **Federal Consistency Conditional Concurrence**

Based on our review of the FCD and the comments submitted by agencies administering the enforceable policies of the CZM Program, DEQ **conditionally concurs** that the proposal is consistent to the maximum extent practicable with the CZM Program provided all applicable permits and approvals are obtained as described below in the Regulatory and Coordination Needs section. VMRC is still evaluating the JPA for the project and a consistency decision will be made pending the approval of a VMRC permit for the project (refer to Item 2 and Item 3) in the Environmental Impacts and Mitigation section, pages 4 and 5).

If, prior to construction, the project should change significantly and any of the enforceable policies of the Virginia CZM Program would be affected, pursuant to 15 CFR 930.66, the applicant must submit supplemental information to DEQ for review and approval. Additionally, other state approvals which may apply to this project are not included in this consistency concurrence. Therefore, NASA must ensure that this project

is operated in accordance with all applicable federal, state and local laws and regulations. NASA is encouraged to consider the Advisory Policies of the CZM Program as well (Attachment 2).

### **Condition of Concurrence with the FCD**

The condition of the Commonwealth's concurrence includes the following authorization under the Virginia CZM Program:

- a permit issued by VMRC for encroachments on or over state-owned subaqueous beds authorized under § 28.2-1200 to §28.2-1213 of the Virginia Code.
- a permit issued by VMRC for encroachments on or over state-owned coastal primary sand dunes and beaches authorized under §28.2-1400 through §28.2-1420 of the Virginia Code.

In accordance with the *Federal Consistency Regulations* 15 CFR Part 930, section 930.4, this conditional concurrence is based on NASA obtaining the necessary authorizations prior to initiating project activities. If the requirements of section 930.4, sub-paragraphs (a)(1) through (a)(3) are not met, this conditional concurrence becomes an objection under 15 CFR Part 930, section 930.63.

### **PREFERRED ALTERNATIVE RECOMMENDATION**

DGIF recommends **Alternative 2**, Unnamed Shoal A be utilized for sand collection. VIMS additionally recommend the use of an offshore site to obtain the sand for the beach re-nourishment. The offshore source could be any approved offshore site, including **Alternative 2**, Unnamed Shoal A. The other natural resource agencies that participated in this review did not make a recommendation for alternative selection.

### **REGULATORY AND COORDINATION NEEDS**

**1. Surface Waters and Wetlands.** A VWP Individual Permit Waiver has been issued for this project. Coordinate with the DEQ TRO VWP Permit program (Jeff Hannah, 757-518-2146) with questions regarding VWP permitting requirements and the status of the JPA review.

**2. Subaqueous Lands.** A VMRC permit is required for the impacts to State-owned subaqueous bottom. The JPA is currently under review. Coordinate with VMRC (Lyle Varnell, 804-684-7764) with questions regarding the status of the JPA review or the required permit.

Contact VIMS (Emily Hein, 804-684-7482) with questions related to their findings or recommendations.

### **3. Erosion and Sediment Control and Stormwater Management.**

**3(a) Erosion and Sediment Control and Stormwater Management.** This project must comply with Virginia's *Erosion and Sediment Control Law* (Virginia Code § 62.1-44.15:61) and *Regulations* (9 VAC 25-840-30 *et seq.*) and *Stormwater Management Law* (Virginia Code § 62.1-44.15:31) and *Regulations* (9 VAC 25-870-210 *et seq.*) as administered by DEQ. Activities that disturb equal to or greater than 10,000 square feet would be regulated by *VESCL&R* and *VSWML&R*. Erosion and sediment control, and stormwater management requirements should be coordinated with the DEQ Tidewater Regional Office, Janet Weyland (757-518-2151).

**3(b) Virginia Stormwater Management Program General Permit for Stormwater Discharges from Construction Activities (VAR10).** For projects involving land-disturbing activities of equal to or greater than one acre the project owner is required to register for coverage under the Virginia Stormwater Management Program General Permit for Discharges of Stormwater from Construction Activities (9 VAC 25-870-1 *et seq.*). Specific questions regarding the Stormwater Management Program requirements should be directed to DEQ, Holly Sepety at (804) 698-4039.

**4. Point Source Pollution Control.** The NASA must comply with its existing VPDES Individual Permit (VA0024457). Contact the DEQ TRO permit writer (Deanna Austin, 757-518-2008) as necessary for questions related to permit or map requirements as warranted due to project activities.

**5. Air Quality Regulations.** For more information, questions, and coordination related to air pollution control requirements, contact DEQ TRO, Laura Corl (757-518-2178).

**6. 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. For additional information concerning location and availability of suitable waste management facilities in the project area or if free product, discolored soils, or other evidence of contaminated soils are encountered, contact DEQ-TRO, Sean Priest at (757) 518-2141.

**7. Natural Heritage Resources.** Contact DCR-DNH, Rene Hypes at (804) 371-2708, to secure updated information on natural heritage resources if the scope of the project changes and/or six months has passed before the project is implemented, since new and updated information is continually added to the Biotics Data System.

Contact DCR (Rene Hypes, 804-371-2709) if any occurrences of Sea-beach amaranth are documented once the project commences.

Due to the legal status of some of the species found in the Wallops – Assawoman Islands Conservation Site, coordinate with the USFWS (Troy Andersen, [troy\\_andersen@fws.gov](mailto:troy_andersen@fws.gov)) to ensure compliance with protected species legislation.



**8. Wildlife Resources, Fisheries, and Protected Species.** Contact Amy Ewing (804-367-2211) with questions related to DGIF's comments and recommendations. DGIF recommends the selection of Alternative 2, Unnamed Shoal A for the sand borrow site.

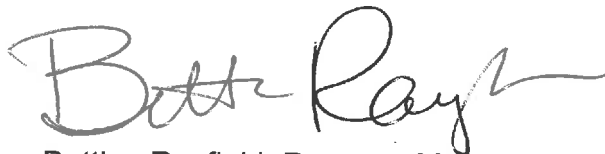
**9. Historic Resources.** If for any reason the project cannot be completed as documented in the DHR finding of No Historic Properties Affected, Section 106 coordination should be reopened. Contact Laura Lavernia (804-482-8097) with questions.

**10. Dunes Management.** A VMRC permit is required for the impacts to beaches and dunes. The JPA is currently under review. Coordinate with VMRC (Lyle Varnell, 804-684-7764) with questions regarding the status of the JPA review or the required permit.

Contact VIMS (Emily Hein, 804-684-7482) with questions related to their findings or recommendations.

Thank you for the opportunity to review and respond to the Draft Environmental Assessment and Federal Consistency Determination for the Wallops Flight Facility Shoreline Enhancement and Restoration Project in Accomack County, VA. Detailed comments of reviewing agencies are attached for your review. Please contact me at (804) 698-4204 or Janine Howard at (804) 698-4299 for clarification of these comments.

Sincerely,

A handwritten signature in dark ink, appearing to read "Bettina Rayfield". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Bettina Rayfield, Program Manager  
Environmental Impact Review

Ec: Amy Ewing, DGIF  
Robbie Rhur, DCR  
Arlene Warren, VDH  
Roger Kirchen, DHR  
Tony Watkinson, VMRC  
Emily Hein, VIMS  
Michael Mason, Accomack County  
Elaine Meil, Accomack-Northampton Planning District Commission  
Shari Miller, NASA



Howard, Janine &lt;janine.howard@deq.virginia.gov&gt;

**Re: ESSLog# 39481\_18-171F\_WallopsShoreline\_DGIF\_AME20181218**

1 message

**Ewing, Amy** <amy.ewing@dgif.virginia.gov>  
To: "Howard, Janine" <janine.howard@deq.virginia.gov>

Mon, Jan 7, 2019 at 11:53 AM

Hi Janine,

I have looked back over the project documents and offer the below comments per your questions. I thought the preferred alternative was Alt 1, but they were referring back to the SRIPP project. Confusing. Let me know if you continue to have any questions. Thanks!

1. Alternative 2 - using Unnamed Shoal Area A for sand collection: Although collection of sand from such areas is not without impacts upon benthic communities and the wildlife that rely upon them, we believe it preferable to removal from the north end of Wallops Island, assuming it is performed with BMPs in place to minimize impacts upon the oceanic environment and its inhabitants. So, if this project must move forward, we would prefer it include collection of sand from areas other than the north end of Wallops, where we know listed species nest.
2. Re-nourishment cycle of 5 years. Thanks for clearing this up. No comments.
3. Federal Consistency: We defer to VMRC as this site drains to marine waters.

Thanks, Amy

**Amy Ewing***Environmental Services Biologist**Manager, Fish and Wildlife Information Services*

P 804.367.2211

**Virginia Department of Game & Inland Fisheries***CONSERVE. CONNECT. PROTECT.*

A 7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228

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On Thu, Jan 3, 2019 at 3:18 PM Howard, Janine &lt;janine.howard@deq.virginia.gov&gt; wrote:

Thanks Amy. Tuesday morning before 11am will work for me. I probably will need something in writing eventually, particularly if we decide to issue a conditional. So with that in mind if you could plan for having something to me by Jan 11th that would be great. That gives me time to edit the report as well as the needed time for it to go through internal review.

Let me know if Tuesday AM for a chat works for you!

Janine Howard  
Environmental Impact Review Coordinator  
Virginia Department of Environmental Quality  
[1111 East Main Street, Suite 1400](http://1111EastMainStreet.com)  
[Richmond, VA 23219](http://RichmondVA.com)  
804-698-4299

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On Thu, Jan 3, 2019 at 3:13 PM Ewing, Amy &lt;amy.ewing@dgif.virginia.gov&gt; wrote:

Hi Janine,  
I'd be happy to discuss this with you. I am really busy right now....can we chat on Tuesday? If you need something sooner, that's ok too...I can get something to you via email. I guess I'm asking for your timeframe. Let me know when you need answers to your questions and then I'll figure out how to fit it in.

Amy



**Amy Ewing**

*Environmental Services Biologist*

*Manager, Fish and Wildlife Information Services*

P 804.367.2211

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On Thu, Jan 3, 2019 at 2:57 PM Howard, Janine <[janine.howard@deq.virginia.gov](mailto:janine.howard@deq.virginia.gov)> wrote:

Hello Amy,

Thank you for your comments and I hope you had a great holiday as well!

I have a few follow-up questions with regard to your comments/recommendations and it may be necessary to have a quick call about it.

1. Your comments are clear that DGIF does not support using North Wallops Island beach as a borrow area for this project (Alternative 1). However, the proposal includes Alternative 2 which would take sand from Unnamed Shoal A (offshore sand ridge located in the outer continental shelf at the southern end of the Assateague ridge field). Do you have any specific comments about that location and/or do you want to endorse that Alternative over Alternative 1? Alternative 3 involves the construction of the parallel breakwaters in addition to the beach nourishment from one of the aforementioned locations (Alt 3+1 or Alt 3+2). NASA does not identify a Preferred Alternative in the Draft Environmental Assessment.

2. With regard to the breakwaters (Alternative 3) you mention that the proposed re-nourishment frequency or type is not discussed. I believe this particular project builds on previously reviewed NEPA documents that specified renourishment cycles of every five years. Specifically I am referring to the Final Programmatic Environmental Impact Statement for the Shoreline Restoration and Infrastructure Protection Program (SRIPP) at Wallops Island (DEQ 10-156F) which was reviewed in November 2010. This project appears to be more of a one-off effort to make repairs/renourish the shoreline due to losses sustained in 2015 (Hurricane Joaquin), 2016 (Winter Storm Jonas) and 2018 (Winter Storm Riley).

3. This document includes a Federal Consistency Determination so we need to discuss how to address the fisheries management enforceable policy. Are we objecting or conditionally concurring with regarding to fisheries management and if it is conditional, what are the conditions?

I have attached VMRC's comment letter on this project for your reference. Based on the information in that letter I will conditionally concur (for subaqueous lands and dunes management), provided a VMRC permit is issued and that the included special conditions are adhered to. I mention this in case this has any bearing on how we want to proceed with regard to fisheries management.

Just FYI, I have to issue the response by January 22nd.

Thank you,

Janine

Janine Howard  
Environmental Impact Review Coordinator  
Virginia Department of Environmental Quality  
[1111 East Main Street, Suite 1400](http://1111EastMainStreet,Suite1400)  
[Richmond, VA 23219](http://Richmond,VA23219)  
804-698-4299

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On Tue, Dec 18, 2018 at 4:38 PM Ewing, Amy <[amy.ewing@dgif.virginia.gov](mailto:amy.ewing@dgif.virginia.gov)> wrote:

Janine,

Please see attached the comments we provided to MRC when they were looking for comments on the project. They constitute a valid response to your request for comments.

Thanks and happy holidays.

Amy



**Amy Ewing**

*Environmental Services Biologist*

*Manager, Fish and Wildlife Information Services*

**P** 804.367.2211

**Virginia Department of Game & Inland Fisheries**

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Ewing, Amy &lt;amy.ewing@dgif.virginia.gov&gt;

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**ESSLog# 39481\_20181590\_WallopsShoreline\_DGIF\_AME20181116**1 message

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**Ewing, Amy** <amy.ewing@dgif.virginia.gov>

Fri, Nov 16, 2018 at 2:28 PM

To: George Badger &lt;hank.badger@mrc.virginia.gov&gt;

Cc: "Boettcher, Ruth" &lt;ruth.boettcher@dgif.virginia.gov&gt;

Hank,

We have reviewed the subject project that proposes to perform shoreline stabilization along Wallops Island shoreline in Accomac County, borrowing fill from the north end shoreline, depositing it along southern shorelines, and installing parallel breakwaters.

As stated during our 2010 review of Wallops' Shoreline Restoration and Infrastructure Protection Program, similar in nature to what is currently being proposed, we are concerned about NASA using the north end of Wallops Island for sand excavation as we believe this area to support nesting federal Endangered piping plovers and American oystercatchers, designated a Tier IIa Species of Greatest Conservation Need. In addition, we believe this area provides nesting habitat for state Threatened Wilson's plovers, federal Threatened loggerhead sea turtles, diamond-backed terrapins (Tier II SGCN), and other species identified in Virginia's Wildlife Action Plan as Species of Greatest Conservation Need (SGCN). We believe that the excavation of sand from this area is likely to not only result in direct adverse impacts upon these species, but also result in long term adverse impacts upon the substrate which provides them nesting habitat. As such, we cannot support removal of sand from the proposed borrow area.

It is our understanding that erosive action along this section of the Eastern Shore is primarily due to northerly near-shore currents that continually transport sand from the southern end of the island to the northern end. As such, it is not clear how breakwaters constructed parallel to the shore will be effective in reducing sand loss from the southern end. Therefore, it is expected that future beach nourishment and associated dredging/borrow areas will be necessary for long-term infrastructure protection. However, there is no information in the application about proposed re-nourishment frequency or type. In addition, there is no information in the application about how placement of fill and installation of breakwaters in this area will impact barrier islands to the south of this site, islands populated by nesting birds and sea turtles. Without these additional details, it is difficult for us to make any determinations about regional wildlife dynamics and population effects resulting from the proposed project.

We recommend that the project area be routinely monitored and surveyed ahead of work being performed so that any new sea turtle or shorebird nesting activity and nesting locations can be protected from harm. We also recommend that a plan of action to address newly found nest sites be developed ahead of project commencement so that the plan can be enacted immediately upon documentation of a site, rather than waiting while coordination with the appropriate agencies is performed. We continue to recommend timing construction and beach fill operations to avoid avian and sea turtle nesting seasons (adherence to time of year restrictions), as indicated in the application. We note that the time of year restriction for sea turtles is from April 1 through November 30 OR until the last turtle hatches or the nest is determined to have failed. We recommend monitoring of the invertebrates at the borrow site located at the north end of Wallops Island, assuming this area used for sand excavation, so that the long-term impacts on the island's benthic invertebrate forage base can be determined and addressed, if necessary.

We recommend additional consideration about the significant impacts this project is likely to have on the local wildlife, particularly the listed and tiered species mentioned above. We recommend inclusion of greater detail within the application about the proposed actions, how they will affect nearby environs, and how imperiled wildlife and their habitats can be better protected from project activities and benefit them in the long-term. We recommend coordination with VDGIF's Eastern Shore Biologist, Ruth Boettcher, at 757-709-0766 or [Ruth.Boettcher@dgif.virginia.gov](mailto:Ruth.Boettcher@dgif.virginia.gov) to ensure appropriate consideration of wildlife and their habitats during project design and implementation.

If this project moves forward, as proposed, it is likely to result in adverse impacts upon beach nesting birds and sea turtles. As such, we cannot support the project. In addition, we may determine that mitigation to compensate for unavoidable impacts upon these species is necessary.

Thanks, Amy



## Amy Ewing

*Environmental Services Biologist*

*Manager, Fish and Wildlife Information Services*

**P** 804.367.2211

**Virginia Department of Game & Inland Fisheries**

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Howard, Janine &lt;janine.howard@deq.virginia.gov&gt;

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**Re: EXPEDITED REVIEW-NEW PROJECT NASA WFF Shoreline Restoration DEQ #18-171F**

1 message

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**Warren, Arlene** <arlene.warren@vdh.virginia.gov>  
To: Janine Howard <janine.howard@deq.virginia.gov>

Wed, Dec 19, 2018 at 3:42 PM

**Project Name: Wallops Flight Facility Shoreline Restoration and Infrastructure Protection Project**

Project #: 18-171F

UPC #: N/A

**Location: Accomack County**

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.**

There are no public groundwater wells within a 1-mile radius of the project site.

There are no surface water intakes located within a 5-mile radius of the project site.

The project is not within the watershed of any public surface water intakes.

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

*The Virginia Department of Health – Office of Drinking Water appreciates the opportunity to provide comments. If you have any questions, please let me know.*

Best Regards,

Arlene Fields Warren

**GIS Program Support Technician****Office of Drinking Water****Virginia Department of Health**

109 Governor Street

Richmond, VA 23219

(804) 864-7781

On Tue, Dec 11, 2018 at 1:35 PM Fulcher, Valerie <valerie.fulcher@deq.virginia.gov> wrote:

**Good afternoon - this is a new OEIR review request/project:**

**Document Type: Draft Environmental Assessment/Federal Consistency Determination**

**Project Sponsor: National Aeronautics and Space Administration**

**Project Title: Wallops Flight Facility Shoreline Restoration and Infrastructure Protection Project**

**Location: Accomack County**

January 8, 2019

Mr. Hank Badger  
Environmental Engineer, Sr.  
Habitat Management Division  
Virginia Marine Resources Commission  
2600 Washington Avenue  
Newport News, VA 23607

Dear Mr. Badger:

The Virginia Institute of Marine Science (VIMS) has completed its review of the proposed project on Wallops Island for the construction of six breakwaters upon state-owned subaqueous bottomlands, placement of sand landward of the breakwaters, nourishment of approximately 19,850 linear feet of beach, and removal of up to 1.3 million cubic yards of sand from a 150 acre area at the north end of the island for nourishment material. Personnel from the departments of Physical Sciences and Fisheries Science, and the Office of Research and Advisory Services contributed to these analyses.

The Virginia barrier islands are a series of dynamic geological features that function collectively as marine and coastal habitat; and also as protection for state-owned marshes and subaqueous bottomlands, public shellfish grounds, private aquaculture capital, and ultimately the oceanside uplands of the Eastern Shore. The continued integrity of the barrier islands is critical to the coastal bay ecosystem, coastal communities, and water-based economic development of the Eastern Shore. These islands are a largely integrated system connected through the flow of sand between the beaches, dunes, and shorefaces of individual islands and across islands in response to tidal currents, winds, waves, and storms (Rice *et al.*, 1976; Rice and Leatherman, 1983; McBride *et al.*, 2015). As such, shoreline modifications to one island must be analyzed for effects not only locally, but also for the potential to affect the natural processes of adjacent islands and waterways.

Wallops Island contains critical infrastructure highly vulnerable to ocean forces. Protective measures including beach nourishment and rock seawalls have been utilized in the past to address these threats, but events have shown that additional and alternative approaches are necessary. The proposed plan incorporates greater continuing control of shoreline processes than past projects, and these control elements expand the potential to alter natural barrier island processes. Ultimate outcomes of alterations to dynamic marine environments are difficult to foresee; however, elements of the project as proposed have the potential to alter local and remote marine resources beyond those resulting from natural processes.

The proposed project will significantly increase storm protection, especially directly leeward of the breakwaters, but is unlikely to provide the level of long-term protection necessary for the Wallops Island shoreline and upland infrastructure. The placement of six stone breakwaters with sand nourishment landward of each structure will have minimal direct impacts to state-owned subaqueous resources, and the additional nourishment of 19,850 feet of shoreline will result only in temporary and minimal impacts to the littoral marine environment. Therefore, minimal adverse environmental impacts will result within the footprint of these isolated shoreline stabilization actions. However, there is potential for remote and secondary impacts to marine resources dependent upon the proposed sand source and likely disruptions of



littoral and longshore sand transport to adjacent shores due to the influences of the breakwaters. Below we discuss separate aspects of the proposed project and their likely environmental consequences, and also describe relational elements that may compound potential impacts to Wallops Island and beyond.

### Sand Mining

Previous beach nourishment relied on offshore sand resources and resulted in only temporary protection due to erosion and sand migration during both storms and quiet-water conditions. This project proposes to mine sand from a 150-acre on-island area north of the target shoreline. The sediment in this area is dominated by previous beach nourishment material displaced by longshore transport. Although northern Wallops Island has been growing wider historically in response to natural barrier island and tidal-inlet processes, the mining site developed very rapidly compared with normal barrier island processes due to the large volume of artificially supplemented sand displaced northward by significant storm forces. The combination of these manmade and natural events subsequently created the current robust beach and dune environment at this northern end of the island. It is important to note that barrier island and tidal-inlet processes will continue to affect the geomorphology of this area, and its current configuration cannot be considered stable.

There are consequences to local barrier island geology from mining or allowing the area to remain intact. Beach and dune resources will be removed within the footprint of the area proposed for mining. Removal and relocation of this magnitude of sand will instantaneously (relative to general island geological processes) destabilize adjacent beaches and dunes, and the adjacent and local nearshore. The applicant reports that mining will occur above mean low water (MLW) and that the mean low water line will remain in its current location with a wide horizontal plane extending landward at the MLW elevation. This may be difficult to achieve, but even if successful, it is highly likely that the large remaining shoreface intertidal flat and the adjacent subaqueous shore component will undergo relatively rapid and significant erosion as the beach and nearshore adjusts towards an equilibrium profile. The applicant provided modeling that demonstrated sand movement back into this area from the south; however, we are not confident in those results due to the model relying on artificial parameters, a unidirectional wave field, and the assumption that the mined area will be geologically stagnant. Additionally, should the breakwaters be constructed and nourished as planned, they will reduce the rates and volumes of northerly longshore sand transport (as they are designed to do). The transport of sand alongshore from the north, around Fishing Point (the southern tip of Assateague Island), and bypassing Chincoteague Inlet to reach Wallops Island and its nearshore (Goettle, 1981; Morang *et al.*, 2006) will surely continue, but it is highly unlikely that it will occur at rates necessary to reconstruct the mining area prior to its alteration by wind and wave forces. We have great confidence that this area will not retain its post-mining form nor naturally fill again with sand to near its current profile and volume in response to reworking by waves and tidal currents. The timing and processes necessary for this to occur cannot be accurately predetermined, but there will surely be alterations to adjacent island and nearshore geomorphology that may create vulnerabilities well beyond the mining footprint.

Should sand mining occur as planned, secondary erosional impacts to dunes and beaches adjacent to the limits of mining can be expected, but no near-term concerns for significant dune erosion are anticipated. Depending on the response of this and adjacent shoreline areas, the remaining dunes landward of the mined area may be positioned for increased vulnerability.

Another concern for geomorphic alterations beyond those associated with natural processes involves the configuration of Chincoteague Inlet. Alterations to an inlet's geometry, e.g., through growth of, re-shaping of, or mining from the northern end of Wallops Island, can result in reworking of inlet sediments in order to maintain a stable cross-sectional area. It is probable that the mining area is affecting inlet dynamics by constricting inlet width, causing it to narrow and deepen to maintain its current cross-sectional area in equilibrium with its tidal prism (O'Brien, 1967; Jarrett, 1976; FitzGerald *et al.*, 2012). Sand mining is likely to ultimately widen the inlet (particularly after the beach has returned to an equilibrium state) and may result in subsequent shoaling of the inlet to an unknown degree.

Fishing Point is a growing landmass that influences local geological processes; and this added variable cannot be ignored when attempting to determine potential effects of the proposed project beyond natural processes. Even without considering the potential impact to Chincoteague Inlet of natural or manmade changes in the width, volume, or shape of northern Wallops Island, the configuration of this dynamic inlet will surely be modified in response to geomorphic changes to Fishing Point. For example, a westward growth of Fishing Point would narrow the inlet, causing its channel to naturally shift westward or deepen in order to maintain its cross-sectional area. Given past natural changes observed within and around Chincoteague Inlet, and the relatively rapid removal of a large volume/area of sand combined with the influences of Fishing Point, some unknown degree and rate of changes to inlet geometry are expected.

We also anticipate an unknown degree of effect to Chincoteague Inlet if sand mining does not occur and sand from nourishment continues migrating north towards the inlet. The previous nourishment migrated to the north along an unobstructed linear path as demonstrated by the applicant's shoreline monitoring data. That volume of sand currently rests in a curvilinear embayment bounded to the north by a pre-existing headland spit or salient. This current shoreline configuration could modify transport processes and may provide for northerly sand transport to continue in smaller and continual volumes. If this occurs, the inlet is expected to receive migrating sand from this direction at a rate and degree more similar to natural processes.

The post-mining sand flat will create a large intertidal area that is available for exploitation by fishes and crabs endemic to the nearshore and surf zone. This abnormal habitat feature has the potential to trap species at low tide, and some level of mortality is expected. However, this shoreline configuration is relatively small in scale and is not expected to persist. Therefore, losses are likely to be minimal and generally short-term. Sea turtles and various shorebirds have been documented in the area targeted for mining, and potential impacts to these species are analyzed under authority of the Virginia Department of Game and Inland Fisheries, the United States Fish and Wildlife Service, and the National Oceanic and Atmospheric Administration's Office of Protected Resources. We recommend referencing their analyses regarding those particular species.

### Breakwaters and Longshore Sand Transport

Regionally the dominant longshore sediment transport along the Eastern Shore barrier islands is to the south (Finkelstein and Ferland, 1987; Fenster *et al.*, 2016). However, reversals of regional longshore transport are common at the downdrift side of inlets and shorelines influenced by wave fields created by remote offshore spits such as Fishing Point (Hayes *et al.*, 1970; Hayes, 1980; Hayes, 1991). Such a

scenario controls local sediment transport along northern Wallops Island, driving sediment to the north from a dynamic, migrating nodal zone located centrally along the length of the island; dominant sand transport south of this nodal point remains to the south (King *et al.*, 2011). The opportunity for the breakwaters to disrupt natural and large-scale sand transport is dependent upon the path of sand migrating around Fishing Point and across Chincoteague Inlet (a primary source of sand for the barrier island system), whether or not the breakwaters are within the path of the migrating sand, and the sand-capturing capacity of the breakwaters. Sand supply and transport dynamics are critical to the entire barrier island system (McBride *et al.*, 2015; Fenster *et al.*, 2016), and disruption of natural processes is expected from the placement of breakwaters; indeed, it is the inherent strategy for breakwater design and application. It is reasonable to conclude that some scale of change to adjacent shoreline dynamics upon and beyond Wallops Island will occur, with the northern area of Assawoman Island particularly vulnerable to these influences.

The shoreline stabilization plan appears to reflect a minimalist approach designed to protect the most sensitive and vulnerable upland infrastructure. The sand nourishment between the breakwaters will rework beyond and within the footprint of the design shoreline in response to local wind and wave energy, with the breakwaters influencing rates and volumes of sand transport in the vicinity of the structures. The disruption of longshore transport by the breakwaters will affect the sand supply to areas north and south of the project footprint at an unknown distance. Disruption of northward longshore transport is expected to alter sand migration rates and the volume of sand available for the mined area, which has the added potential to contribute to long-term effects to northern Wallops Island. Whether or not this may directly contribute to eventual added erosion and an increased vulnerability to Commonwealth natural resources behind and adjacent to the northern end of Wallops Island cannot be interpreted from the available information.

A characteristic of breakwaters that can eventually self-mitigate potential adverse effects to barrier island sand supplies is their sand storage capacity, which is related to breakwater length and distance offshore (Chasten *et al.* 1993). Once maximum capacity is reached and the breakwaters are fully connected to shore, longshore sand transport by wind and waves has the potential to occur at rates and volumes more similar to natural processes. However, facilitation of this process depends heavily on breakwater design and the integration of the breakwaters into local shoreline processes. Furthermore, storm events can reduce sand volumes landward of the breakwaters to below maximum capacity, thus initiating a new cycle of sand transport disruption. Providing guidance on if, and when, these situations develop and establish as normal shoreline processes is infeasible. We assume and strongly recommend continuation of the shoreline monitoring program to continue providing an empirical basis for future adaptive management.

### Conclusions and Recommendations

The continued and integrated geological and marine processes indigenous to the Virginia barrier islands creates challenging shoreline management problems and complicated scenarios from which to assess potential benefits or detriments to local natural resources. Accounting for these difficulties, we have confidence that (1) the breakwaters and beach nourishment will provide protection to Wallops Island, but for an unknown period of time; (2) the post-mining footprint and adjacent areas of northern Wallops Island will undergo relatively rapid changes that could affect the island and adjacent inlet beyond natural

processes; and (3) the breakwaters will have some unknown degree of effect on longshore sand transport rates and volumes, both north and south of their locations.

To reduce uncertainties and potential adverse environmental impacts, strong consideration should be given to again utilizing offshore sand for nourishment. This would eliminate direct impacts to beaches and dunes on northern Wallops Island and significantly decrease likelihoods of rapid geological alterations and responses of the affected and adjacent beach, dunes, and shoreface. If offshore sand is used, we further recommend consideration of management strategies and structures that semi-contain the sand within and around the proposed beach mining location at the north end of the island to prevent the possibility of an abnormally large volume of sand moving into Chincoteague Inlet.

Some concerning environmental effects could be addressed by applying an additional number of breakwaters designed to contain all sand nourishment, and nourished to maximum capacity. This would stabilize the shoreline to the maximum extent possible while providing added protection for the Wallops Island shoreline and infrastructure. Until a full build-out scenario such as this occurs, frequent and unknown degrees of impact to natural shoreline and island processes should be expected. Continued protection of Wallops Island will undoubtedly require future beach nourishment that will introduce other large sand volumes to this environment, with related unknown concerns and consequences.

Please contact me if you have questions or require additional information.

Sincerely,



Lyle Varnell  
Associate Director for Advisory Services

## **Literature Cited**

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Howard, Janine <[janine.howard@deq.virginia.gov](mailto:janine.howard@deq.virginia.gov)>

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**RE: EXPEDITED REVIEW-NEW PROJECT NASA WFF Shoreline Restoration  
DEQ #18-171F**

1 message

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**Emily A. Hein** <[eahein@vims.edu](mailto:eahein@vims.edu)>  
To: "Howard, Janine" <[janine.howard@deq.virginia.gov](mailto:janine.howard@deq.virginia.gov)>

Thu, Jan 10, 2019 at 9:26 AM

Good morning, Janine,

Our report recommends using an offshore source for the sand nourishment material. The source can be any approved offshore site, including Unnamed Shoal A referenced in the EA.

Please let me know if you have any additional questions.

Best,

Emily

**Emily Hein**

Assistant Director

Research & Advisory Services

[eahein@vims.edu](mailto:eahein@vims.edu), 804-684-7482



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**From:** Emily A. Hein  
**Sent:** Tuesday, January 08, 2019 3:15 PM  
**To:** 'Howard, Janine' <[janine.howard@deq.virginia.gov](mailto:janine.howard@deq.virginia.gov)>  
**Subject:** RE: EXPEDITED REVIEW-NEW PROJECT NASA WFF Shoreline Restoration DEQ #18-171F



## COMMONWEALTH of VIRGINIA

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

Matthew J. Strickler  
Secretary of Natural Resources

Steven G. Bowman  
Commissioner

January 2, 2019

Department of Environmental Quality  
Attn: Janine Howard  
1111 East Main St.  
Richmond, VA 23219

Re: Federal Consistency Determination and  
Draft Environmental Assessment  
Wallops Flight Facility Project

Dear Ms. Howard:

This will respond to the request for comments regarding the Federal Consistency Determination and Draft Environmental Assessment for the Wallops Flight Facility Shoreline Restoration and Infrastructure Protection project (DEQ #18-171F). Specifically, the National Aeronautics and Space Administration (NASA) has proposed to construct six approximately 150-foot long offshore breakwaters and place approximately 1.3 million cubic yards of sandy beach nourishment material landward of the breakwaters along approximately 19,850 feet of shoreline. The project is located at the Wallops Island facility in Accomack County, Virginia.

Please be advised that the Commission pursuant to Chapter 12, 13, & 14 of Title 28.2 of the Code of Virginia administers permits required for submerged lands, tidal wetlands, and beaches and dunes. As such, the Commission administers the enforceable policies of fisheries management, subaqueous lands, tidal wetlands, and coastal primary sand dunes and beaches which comprise some of Virginia's Coastal Zone Management Program.

We received the applicant's information on October 9, 2018, JPA #18-1590. This project is in the JPA review process and will require a permit from this agency for submerged land and coastal primary sand dune/beach encroachments. Our final consistency recommendation cannot be reached until completion of our permit review process. Once the applicant has received a permit specifying any necessary special conditions from the Commission, the project will be consistent with our enforceable policies. Conditioned on the issuance of the VMRC permit, the Commission has no objection to the consistency findings provided by the applicant.

*An Agency of the Natural Resources Secretariat*

[www.mrc.virginia.gov](http://www.mrc.virginia.gov)

Telephone (757) 247-2200 (757) 247-2292 V/TDD Information and Emergency Hotline 1-800-541-4646 V/TDD

Department of Environmental Quality  
January 2, 2019  
Page Two

Should you have any questions please contact me at (757) 414-0710 or by email at [hank.badger@mrc.virginia.gov](mailto:hank.badger@mrc.virginia.gov). Thank you for the opportunity to comment.

Sincerely,

A handwritten signature in blue ink, appearing to read 'G. Badger, III', with a stylized, cursive script.

George H. Badger, III  
Environmental Engineer, Habitat Management

GHB/lrp  
HM



Howard, Janine <[janine.howard@deq.virginia.gov](mailto:janine.howard@deq.virginia.gov)>

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**Re: Wallops Flight Facility Shoreline Restoration and Infrastructure Protection Project**

1 message

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**Pudvah, Lauren** <[lauren.pudvah@mrc.virginia.gov](mailto:lauren.pudvah@mrc.virginia.gov)>  
To: "Howard, Janine" <[janine.howard@deq.virginia.gov](mailto:janine.howard@deq.virginia.gov)>  
Cc: George Badger <[hank.badger@mrc.virginia.gov](mailto:hank.badger@mrc.virginia.gov)>

Tue, Jan 15, 2019 at 4:15 PM

Hi Janine,

This language looks good. Thank you!

Best,

Lauren Pudvah

On Tue, Jan 15, 2019 at 12:02 PM Howard, Janine <[janine.howard@deq.virginia.gov](mailto:janine.howard@deq.virginia.gov)> wrote:  
Hi Lauren,

Thanks for submitting VMRC's comments on this project. Below is the draft conditional concurrence language that I proposed to use in our response to NASA. Please take a look and let me know that you concur and that the citations are correct. Thanks for your help!

**Condition of Concurrence with the FCD**

The condition of the Commonwealth's concurrence includes the following authorization under the Virginia CZM Program:

- a permit issued by VMRC for encroachments on or over state-owned subaqueous beds authorized under § 28.2-1200 to §28.2-1213 of the Virginia Code.
- a permit issued by VMRC for encroachments on or over state-owned coastal primary sand dunes and beaches authorized under §28.2-1400 through §28.2-1420 of the Virginia Code.

In accordance with the *Federal Consistency Regulations* 15 CFR Part 930, section 930.4, this conditional concurrence is based on NASA obtaining the necessary authorizations prior to initiating project activities. If the requirements of section 930.4, sub-paragraphs (a)(1) through (a)(3) are not met, this conditional concurrence becomes an objection under 15 CFR Part 930, section 930.63.

Janine Howard  
Environmental Impact Review Coordinator  
Virginia Department of Environmental Quality  
[1111 East Main Street, Suite 1400](#)  
[Richmond, VA 23219](#)  
804-698-4299

For program updates and public notices please subscribe to the [OEIR News Feed](#)

On Wed, Jan 2, 2019 at 11:07 AM Pudvah, Lauren <[lauren.pudvah@mrc.virginia.gov](mailto:lauren.pudvah@mrc.virginia.gov)> wrote:  
Ms. Howard,

Please find attached the VMRC's comments on the above referenced project. Thank you for the opportunity to comment.

Best,

Lauren Pudvah

--

**Lauren Pudvah**

Comments Coordinator

VA Sea Grant Fellow

Marine Resources Commission

2600 Washington Ave., 3rd Floor

Newport News, VA 23607

[lauren.pudvah@mrc.virginia.gov](mailto:lauren.pudvah@mrc.virginia.gov)

**\*\*We're moving! On January 28th, 2019** we will open our doors at our new location at **380 Fenwick Road, Bldg. 96, Fort Monroe, VA**. To prepare for the move, our current main office **will be closed January 24-25, 2019**. Should you have any communications, permits, reports, etc. that need to be attended to the week of January 21 – 25, we ask that you try and have them delivered no later than January 17, 2019. We will make every effort to avoid any interruptions in service and should you have any questions or concerns please call 757-247-2200.\*\*

--

**Lauren Pudvah**

Comments Coordinator

VA Sea Grant Fellow

Marine Resources Commission

2600 Washington Ave., 3rd Floor

Newport News, VA 23607

[lauren.pudvah@mrc.virginia.gov](mailto:lauren.pudvah@mrc.virginia.gov)

**\*\*We're moving! On January 28th, 2019** we will open our doors at our new location at **380 Fenwick Road, Bldg. 96, Fort Monroe, VA**. To prepare for the move, our current main office **will be closed January 24-25, 2019**. Should you have any communications, permits, reports, etc. that need to be attended to the week of January 21 – 25, we ask that you try and have them delivered no later than January 17, 2019. We will make every effort to avoid any interruptions in service and should you have any questions or concerns please call 757-247-2200.\*\*

**DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF AIR PROGRAM COORDINATION**

**ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY**

TO: Janine L. Howard

DEQ - OEIR PROJECT NUMBER: **DEQ #18-171F**

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

**X CONSISTENCY DETERMINATION**

PROJECT TITLE: **Wallops Flight Facility Shoreline Restoration and Infrastructure Protection Project**

PROJECT SPONSOR: **National Aeronautics and Space Administration**

PROJECT LOCATION: ☐ OZONE ATTAINMENT AREA

REGULATORY REQUIREMENTS MAY BE APPLICABLE TO: ☒ **CONSTRUCTION**  
☐ **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 5-45-760 et seq. – Asphalt Paving operations
3. ☒ **9 VAC 5-130 et seq. – Open Burning**
4. ☒ **9 VAC 5-50-60 et seq. Fugitive Dust Emissions**
5. ☐ 9 VAC 5-50-130 et seq. - Odorous Emissions; Applicable to \_\_\_\_\_
6. ☐ 9 VAC 5-60-300 et seq. – Standards of Performance for Toxic Pollutants
7. ☐ 9 VAC 5-50-400 Subpart\_\_\_\_\_, Standards of Performance for New Stationary Sources, designates standards of performance for the \_\_\_\_\_
8. ☐ 9 VAC 5-80-1100 et seq. of the regulations – Permits for Stationary Sources
9. ☐ 9 VAC 5-80-1605 et seq. Of the regulations – Major or Modified Sources located in PSD areas. This rule may be applicable to the \_\_\_\_\_
10. ☐ 9 VAC 5-80-2000 et seq. of the regulations – New and modified sources located in non-attainment areas
11. ☐ 9 VAC 5-80-800 et seq. Of the regulations – State Operating Permits. This rule may be applicable to \_\_\_\_\_

**COMMENTS SPECIFIC TO THE PROJECT:**



(Kotur S. Narasimhan)  
Office of Air Data Analysis

DATE: December 12, 2018

Matthew J. Strickler  
Secretary of Natural Resources

Clyde E. Cristman  
Director



Rochelle Altholz  
Deputy Director of  
Administration and Finance

Russell W. Baxter  
Deputy Director of  
Dam Safety & Floodplain  
Management and Soil & Water  
Conservation

Thomas L. Smith  
Deputy Director of Operations

**COMMONWEALTH of VIRGINIA**  
DEPARTMENT OF CONSERVATION AND RECREATION

**MEMORANDUM**

DATE: January 7, 2019

TO: Janine Howard, DEQ

FROM: Roberta Rhur, Environmental Impact Review Coordinator

SUBJECT: DEQ 18-171F, WFF Shoreline Restoration and Infrastructure Protection Project Draft EA

**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.

According to the information currently in our files, the Wallops – Assawoman Islands Conservation Site is located within the project site. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. Wallops – Assawoman Islands Conservation Site has been given a biodiversity significance ranking of B2, which represents a site of very high significance. The natural heritage resources of concern at this site are:

<i>Eupatorium maritimum</i>	A Eupatorium	G2?/S1/NL/NL
<i>Charadrius melodus</i>	Piping plover	G3/S2B,S1/LT/LT
<i>Caretta caretta</i>	Loggerhead (Sea Turtle)	G3/S1B,S1/LT/LT
<i>Papaipema araliae</i>	Aralia Shoot Borer Moth	G3G4/S2S3/NL/NL
<i>Juncus megacephalus</i>	Big-headed rush	G4G5/S2/NL/NL
<i>Ammodramus caudacutus</i>	Saltmarsh sparrow	G4/S2B,S3/NL/NL
<i>Euphorbia bombensis</i>	Southern seaside spurge	G4G5/S2/NL/NL
<i>Falco peregrinus</i>	Peregrine falcon	G4/S1B,S2/NL/LT
<i>Papaipema duovata</i>	Seaside Goldenrod Stem Borer	G4/S1S3/NL/NL
<i>Sternula antillarum</i>	Least tern	G4/S2B/NL/NL
<i>Charadrius wilsonia</i>	Wilson's plover	G5/S1B/NL/LE
<i>Circus hudsonius</i>	Northern harrier	G5/S1S2B,S3N/NL/NL
<i>Rynchops niger</i>	Black skimmer	G5/S2B,S1/NL/NL
<i>Plantago maritima</i> var. <i>juncoides</i>	Seaside plantain	G5T5/S1/NL/NL
Tidal Herbaceous Vegetation Low Salt Marsh (Salt Panne Type)		GNR/S3/NL/NL
Bird Nesting Colony		G5/SNR/NL/NL

Wax Myrtle Interdune Shrubland	G3G4/S2S3/NL/NL
Interdune Swale / Pond	G2/S2/NL/NL
Interdune Swale (Northern Mixed Grassland Type)	G1G2/S1? /NL/NL
Woodland Black Cherry Xeric Dune Woodland	G1G2/S1/NL/NL
Shrub Herbaceous Vegetation Xeric Backdune Grassland	G2/S2/NL/NL

Due to the legal status of some of the species listed above, DCR recommends continued coordination with the US Fish and Wildlife Service (USFWS) and the Virginia Department of Game and Inland Fisheries (VDGIF), Virginia's regulatory authority for the management and protection of these species to ensure compliance with protected species legislation. DCR supports the planned mitigation measures to reduce the probability and intensity of potential effects to protected species.

Please note according to DCR's species distribution model, Sea-beach amaranth (*Amaranthus pumilus*, G2/S1/LT/LT) may exist within the project site. Please coordinate with DCR if any occurrences of Sea-beach amaranth are documented.

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 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 Ernie Aschenbach at 804-367-2733 or [Ernie.Aschenbach@dgif.virginia.gov](mailto:Ernie.Aschenbach@dgif.virginia.gov).

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

CC: Troy Andersen, USFWS  
Amy Ewing, VDGIF



# *COMMONWEALTH of VIRGINIA*

## *DEPARTMENT OF ENVIRONMENTAL QUALITY*

*Street address:* 1111 East Main Street, Suite 1400, Richmond, VA 23219

*Mailing address:* P.O. Box 1105, Richmond, Virginia 23218

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Matthew J. Strickler  
Secretary of Natural Resources

David K. Paylor  
Director

(804) 698-4000  
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## **MEMORANDUM**

**TO:** Janine Howard, DEQ Office of Environmental Impact Review

**FROM:** Rachel Hamm, DEQ Principal Environmental Planner

**DATE:** December 18, 2018

**SUBJECT:** DEQ #18-171F: NASA Wallops Flight Facility Shoreline Restoration and Infrastructure Protection Project– Accomack County

We have reviewed the Federal Consistency Determination submittal for the proposed project and offer the following comments regarding consistency with the provisions of the Chesapeake Bay Preservation Area Designation and Management Regulations.

The proposed project is located in the Atlantic Ocean watershed and is outside of the Chesapeake Bay watershed; thus there are no comments or requirements under the Chesapeake Bay Preservation Area Designation and Management Regulations or the *Chesapeake Bay Preservation Act*.



DEPARTMENT OF ENVIRONMENTAL QUALITY  
TIDEWATER REGIONAL OFFICE  
ENVIRONMENTAL IMPACT REVIEW COMMENTS

January 17, 2019

**PROJECT NUMBER:** 18-171F

**PROJECT TITLE:** Wallops Flight Facility Shoreline Restoration and Infrastructure Protection Project

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

**Petroleum Storage Tank Cleanups:**

No comments.

**Petroleum Storage Tank Compliance/Inspections:**

No comments.

**Virginia Water Protection Permit Program (VWPP):**

On October 9, 2018, the VWP program received a joint permit application for the proposed activities and on December 12, 2018, we waived the requirement for a VWP permit pursuant to 9 VAC 25-210-220.B. Provided the applicant complies with the VWP waiver, the project will be consistent with the VWP program.

**Air Permit Program :**

The following air regulations of the Virginia Administrative Code may be applicable: 9VAC5-50-60 *et seq.* which addresses the abatement of visible emissions and fugitive dust emissions, and 9VAC5-130-10 *et seq.* which addresses open burning. For additional information, contact Laura Corl at (757) 518-2178.

**Water Permit Program :**

The Wallops Flight Facility is covered under a VPDES individual permit (VA0024457). If there are any industrially related activities that will discharge pollutants to surface waters or facility changes that may require map or permit revisions, please contact the permit writer, Deanna Austin, at (757) 518-2008 or [deanna.austin@deq.virginia.gov](mailto:deanna.austin@deq.virginia.gov).

**Waste Permit Program :**

No Comment.

**Storm Water Program:**

No comments.

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



DEPARTMENT OF ENVIRONMENTAL QUALITY  
TIDEWATER REGIONAL OFFICE  
ENVIRONMENTAL IMPACT REVIEW COMMENTS

January 17, 2019

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**PROJECT TITLE:** Wallops Flight Facility Shoreline Restoration and Infrastructure Protection Project

Sincerely,

Cindy Robinson  
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# *COMMONWEALTH of VIRGINIA*

## *DEPARTMENT OF ENVIRONMENTAL QUALITY*

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## Attachment 2

### **Advisory Policies for Geographic Areas of Particular Concern**

- a. Coastal Natural Resource Areas - These areas are vital to estuarine and marine ecosystems and/or are of great importance to areas immediately inland of the shoreline. Such areas receive special attention from the Commonwealth because of their conservation, recreational, ecological, and aesthetic values. These areas are worthy of special consideration in any planning or resources management process and include the following resources:
  - a) Wetlands
  - b) Aquatic Spawning, Nursery, and Feeding Grounds
  - c) Coastal Primary Sand Dunes
  - d) Barrier Islands
  - e) Significant Wildlife Habitat Areas
  - f) Public Recreation Areas
  - g) Sand and Gravel Resources
  - h) Underwater Historic Sites
- b. Coastal Natural Hazard Areas - This policy covers areas vulnerable to continuing and severe erosion and areas susceptible to potential damage from wind, tidal, and storm related events including flooding. New buildings and other structures should be designed and sited to minimize the potential for property damage due to storms or shoreline erosion. The areas of concern are as follows:
  - i) Highly Erodible Areas
  - ii) Coastal High Hazard Areas, including flood plains.
- c. Waterfront Development Areas - These areas are vital to the Commonwealth because of the limited number of areas suitable for waterfront activities. The areas of concern are as follows:
  - i) Commercial Ports
  - ii) Commercial Fishing Piers
  - iii) Community Waterfronts

Although the management of such areas is the responsibility of local government and some regional authorities, designation of these areas as Waterfront Development Areas of Particular Concern (APC) under the VCP is encouraged.

Designation will allow the use of federal CZMA funds to be used to assist planning for such areas and the implementation of such plans. The VCP recognizes two broad classes of priority uses for waterfront development APC:

- i) water access dependent activities;
- ii) activities significantly enhanced by the waterfront location and complementary to other existing and/or planned activities in a given waterfront area.

### **Advisory Policies for Shorefront Access Planning and Protection**

- a. Virginia Public Beaches - Approximately 25 miles of public beaches are located in the cities, counties, and towns of Virginia exclusive of public beaches on state and federal land. These public shoreline areas will be maintained to allow public access to recreational resources.
- b. Virginia Outdoors Plan - Planning for coastal access is provided by the Department of Conservation and Recreation in cooperation with other state and local government agencies. The Virginia Outdoors Plan (VOP), which is published by the Department, identifies recreational facilities in the Commonwealth that provide recreational access. The VOP also serves to identify future needs of the Commonwealth in relation to the provision of recreational opportunities and shoreline access. Prior to initiating any project, consideration should be given to the proximity of the project site to recreational resources identified in the VOP.
- c. Parks, Natural Areas, and Wildlife Management Areas - Parks, Wildlife Management Areas, and Natural Areas are provided for the recreational pleasure of the citizens of the Commonwealth and the nation by local, state, and federal agencies. The recreational values of these areas should be protected and maintained.
- d. Waterfront Recreational Land Acquisition - It is the policy of the Commonwealth to protect areas, properties, lands, or any estate or interest therein, of scenic beauty, recreational utility, historical interest, or unusual features which may be acquired, preserved, and maintained for the citizens of the Commonwealth.
- e. Waterfront Recreational Facilities - This policy applies to the provision of boat ramps, public landings, and bridges which provide water access to the citizens of the Commonwealth. These facilities shall be designed, constructed, and maintained to provide points of water access when and where practicable.
- f. Waterfront Historic Properties - The Commonwealth has a long history of settlement and development, and much of that history has involved both shorelines and near-shore areas. The protection and preservation of historic shorefront properties is primarily the responsibility of the Department of Historic Resources. Buildings, structures, and sites of historical, architectural, and/or archaeological interest are significant resources for the citizens of the Commonwealth. It is the policy of the Commonwealth and the VCP to enhance the protection of buildings, structures, and sites of historical, architectural, and archaeological significance from damage or destruction when practicable.