

# Appendix B

## Comments Received on Draft EA

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### Appendix B Correspondence Index

<b>DOCUMENT NUMBER</b>	<b>DATE</b>	<b>FROM</b>
001	April 25, 2013	U.S. Army Corps of Engineers
002	April 26, 2013	Catawba Indian Nation
003	April 29, 2013	Bureau of Ocean Energy Management
004 <sup>1,2</sup>	May 6, 2013	Virginia Department of Environmental Quality
005	May 10, 2013	U.S. Environmental Protection Agency, Region III
006	May 14, 2013	Pocomoke Indian Nation
007	May 23, 2013	NASA, to Pocomoke Indian Nation
008	June 12, 2013	Pocomoke Indian Nation
009	May 14, 2013	The Nature Conservancy
010	May 14, 2013	U.S. Navy, Fleet Forces Command
011	May 21, 2013	Hampton Roads Military and Federal Facilities Alliance

<sup>1</sup> Comments submitted on behalf of five other Virginia agencies.

<sup>2</sup> Subsequent to submitting its comments via the Virginia Department of Environmental Quality's consolidated state agency response, the Virginia Department of Conservation and Recreation also submitted the same comments in a May 15, 2013 letter. As the comments are the same as those contained within Document 004, they are not included as a separate document in this appendix.

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**Document 001**  
**U.S. Army Corps of Engineers**  
**April 25, 2013**

Monday, April 29, 2013 8:58:21 AM ET

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**Subject:** Wallops Island Draft EA for Sandy Repairs (UNCLASSIFIED)  
**Date:** Thursday, April 25, 2013 1:18:58 PM ET  
**From:** Cole, Robert H NAO  
**To:** Bundick, Joshua A. (WFF-2500), Silbert, Shari A. (WFF-200.C)[EG&G, Inc. (WICC)], Turner, Carolyn (WFF-2500)  
**CC:** Petrow, Carol, Alaina DeGeorgio, Sheri Kattan, Gibson, Steven W NAO

Classification: UNCLASSIFIED  
Caveats: NONE

Josh,

I have reviewed the Draft EA for the beach repairs proposed for the Wallops Island Beach. I only have two questions:

1. Section 3.4 Cumulative Impacts.  
Several projects have been singled out in the draft EA. Per Norfolk District Design-Build bid solicitation, and FHA bridge replacement bid solicitation, there are additional impacts being considered that would affect the cumulative impacts presented by the draft EA. The above mentioned projects are linked to this draft EA via flight operations at Launch Pads A and B, which the proposed beach project is designed to protect. Are there any other projects, past present, or in the foreseeable future that may be affected by the proposed beach repair project? 1

2. Section 3.2 Biological Environment  
3.2.2.1 Affected Environment.  
The draft EA states that "an expansive area of tidal pools" has developed on the northern end of the project site. Since the pools now serve as an "important source of forage for avian species," how will this area be incorporated into planning for future dredging cycles? Has the development of the tidal pools significantly altered jurisdictional waters or habitats for endangered or threatened species within areas where future projects are under consideration (UAS Airstrip)? 2

Please contact me directly if you wish to discuss my questions.

Robert Cole  
Eastern Virginia Regulatory Section  
PO Box 125  
Greenbackville, VA 23355  
(757) 903- 1562

Classification: UNCLASSIFIED  
Caveats: NONE

Page 1 of 1

**Response to Comment 1:** A key aspect of considering cumulative effects under NEPA is to identify actions other than the Proposed Action affecting the same resources as the Proposed Action, therefore presenting the potential for additive effects. In doing so, both temporal and spatial analysis boundaries must be established.

**Response to Comment 1 (cont.):** Of the two projects mentioned, the first would involve construction of a new launch command center on an upland site in the central campus portion of the WFF Main Base, approximately 6 miles north of the area that would be affected by the Proposed Action. As such, there would be no spatial overlap with resources affected by the Proposed Action. The second project would involve repairs to the existing Wallops Island causeway bridge, none of which are expected to require any in-water work or measurably affect resources also affected by the Proposed Action. Consequently, neither project has been included in the Cumulative Effects section of this EA. However, a reasonably foreseeable future action, the U.S. Navy's proposed powder gun/railgun program on Wallops Island, has been added to the analysis.

**Response to Comment 2:** NASA would continue to monitor the Wallops Island beach in accordance with its Protected Species Monitoring Program. The results of these surveys would be considered when planning future beach renourishment cycles.

Consistent with its obligations under both NEPA and the Endangered Species Act, should the subject area change in a way that could substantially affect the conclusions drawn in existing environmental impact assessment documents, NASA would re-assess its operations and conduct additional resource consultations, as appropriate.

**Document 002**  
**Catawba Indian Nation**  
**April 26, 2013**

Monday, April 29, 2013 8:53:18 AM ET

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**Subject:** Post-Hurricane Sandy Shoreline Repair  
**Date:** Friday, April 26, 2013 1:28:03 PM ET  
**From:** Caitlin Haire  
**To:** Bundick, Joshua A. (WFF-2500)

Mr. Bundick,

We have no concerns with this project at this time. If you need anything else let me know. Thanks | 1

Caitlin

--

Caitlin Totherow  
Catawba Indian Nation  
Tribal Historic Preservation Office  
1536 Tom Steven Road  
Rock Hill, SC 29730

803-328-2427 ext. 226  
[Caitlinh@ccppcrafts.com](mailto:Caitlinh@ccppcrafts.com)

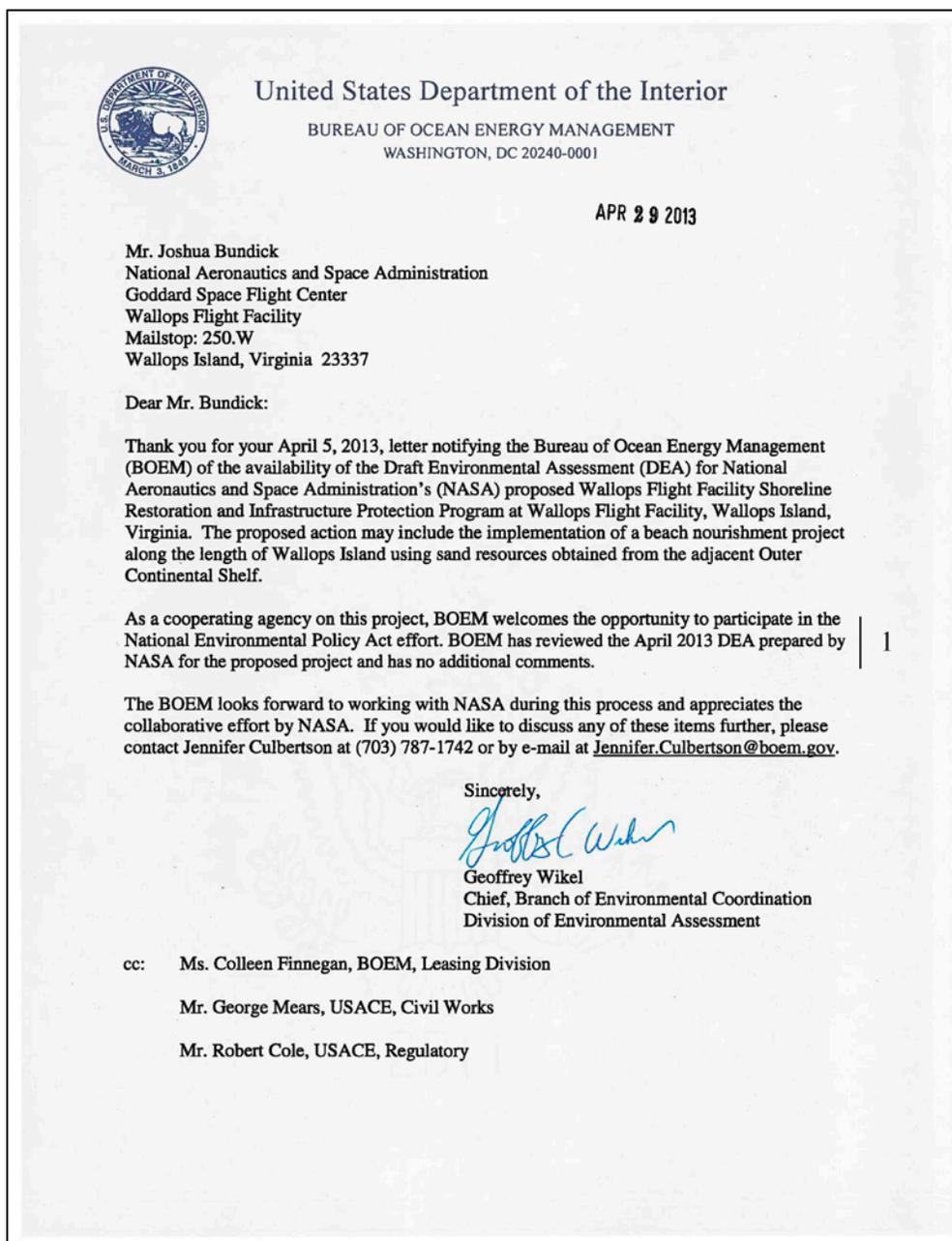
*\*Please Note: We CANNOT accept Section 106 forms via e-mail, unless requested. Please send us hard copies.  
Thank you for your understanding\**

Page 1 of 1

**Response to Comment 1:** NASA notes that the Catawba Indian Nation does not have concerns with the proposed project.

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Document 003  
Bureau of Ocean Energy Management  
April 29, 2013



**Response to Comment 1:** NASA notes that BOEM does not have additional comments on the Draft EA.

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**Document 004**  
**Virginia Department of Environmental Quality**  
**May 6, 2013**



**COMMONWEALTH of VIRGINIA**

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

Douglas W. Domenech  
Secretary of Natural Resources

David K. Paylor  
Director  
(804) 698-4000  
1-800-592-5482

May 6, 2013

Mr. Joshua A. Bundick  
WFF NEPA Manager  
Environmental Office  
NASA Wallops Flight Facility  
Wallops Island, Virginia 23337

RE: Draft Environmental Assessment and Federal Consistency Determination for the Wallops Island Post-Hurricane Sandy Beach Renourishment, Accomack County, (DEQ 13-046F).

Dear Mr. Bundick:

The Commonwealth of Virginia has completed its review of the April 3013 Draft Environmental Assessment (EA) (received April 9, 2013) and March 8, 2013 Federal Consistency Determination (FCD) (received March 12, 2013) for the Wallops Island post-hurricane Sandy beach renourishment project at the Goddard Space Flight Center, Wallops Flight Facility in Accomack County. 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 FCDs submitted pursuant to the Coastal Zone Management Act (CZMA) and providing the state's response. The following agencies participated in the review of the EA and FCD for this proposal:

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

In addition, the Department of Agriculture and Consumer Services, Department of Mines, Minerals and Energy, Virginia Institute of Marine Science, Accomack County and Accomack-Northampton Planning District Commission were invited to comment on the proposal.

Mr. Joshua A. Bundick  
Wallops Island Post-Hurricane Sandy Beach Renourishment

**PROJECT DESCRIPTION**

The National Aeronautics and Space Administration (NASA) proposes to renourish the beach at the Goddard Space Flight Center, Wallops Flight Facility (WFF) on Wallops Island in Accomack County. The project includes the dredging and placement of up to 800,000 cubic yards (CY) of sand from an offshore borrow area (Unnamed Shoal A) using one or more trailing suction hopper dredge(s) to obtain the material. This would require one or more anchored pumpout station(s) approximately two miles east of Wallops Island in 25-30 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, mechanized equipment (e.g., bulldozers) would grade the material to the design template. The linear extent of the proposed beach fill would be approximately 2.3 miles between the Z-100 camera stand on the south up to just beyond the Horizontal Integration Facility located mid-island. Following beach fill, NASA would re-plant the dunes with native vegetation and install sand fencing to trap windblown sand. It is expected that the dredging and beach fill work would take between 1.5-3 months to complete. Depending upon the amount of funding available for the project, NASA may further extend its rock seawall to the south.

A Programmatic Environmental Impact Statement (PEIS) for the Wallops Flight Facility Shoreline Restoration and Infrastructure Protection Program was completed in December 2010 to assess the environmental consequences from a 50-year design life storm damage reduction program at WFF. The commonwealth responded to both the draft and final PEIS in April 2010 (DEQ 10-019F) and November 2010 (DEQ 10-156F), respectively. The document describes an initial beach fill cycle followed by an estimated nine renourishment cycles to maintain a target level of storm damage reduction. Consistent with the NEPA approach outlined for the PEIS, NASA has prepared this EA as a tiered document focusing specifically on the proposed renourishment and seawall repair. As such, much of the PEIS is incorporated by reference with new information and analysis provided as appropriate.

**CONCLUSION**

Based on the information provided in the Draft Environmental Assessment and comments from reviewers, the Commonwealth of Virginia has no objections to the proposal as presented. Provided activities are performed in compliance with all applicable laws and regulations and in accordance with the recommendations which follow, this project is unlikely to have significant effects on ambient air quality, water quality, surface waters, groundwater, wetlands, fisheries, forest resources, agricultural land or historic resources. It will not affect species of animals or insects listed by state agencies as rare, threatened, or endangered.

1

**Response to Comment 1:** NASA notes that the Commonwealth of Virginia has no objections to the proposed project. NASA would ensure that all project activities are performed in compliance with applicable Federal, state, and local regulations.

Mr. Joshua A. Bundick  
Wallops Island Post-Hurricane Sandy Beach Renourishment

**ENVIRONMENTAL IMPACTS AND MITIGATION**

**1. Surface Waters and Wetlands.** According to the EA (page 3-10), dredging operations and sand placement would cause sediment to be suspended in the water column. The sediment plume from the dredge and the turbidity plume generated at the placement site would be expected to dissipate approximately 1,640-4,000 feet from the dredge and between 1,000-2,000 feet alongshore and lasting one to several hours. The document does not indicate what wetlands would be impacted by the proposed action.

2

**1(a) Agency Jurisdiction.** The State Water Control Board (SWCB) promulgates Virginia's water regulations, covering a variety of permits to include Virginia Pollutant Discharge Elimination System (VPDES) Permit, Virginia Pollution Abatement Permit, Surface and Groundwater Withdrawal Permit, and the Virginia Water Protection Permit (VWPP). The VWPP is a state permit which governs wetlands, surface water, and surface water withdrawals/impoundments. It also serves as § 401 certification of the federal *Clean Water Act* § 404 permits for dredge and fill activities in waters of the U.S. The VWPP Program is under the Office of Wetlands and Water Protection/Compliance, within the DEQ Division of Water Quality Programs. In addition to central office staff that review and issue VWPP permits for transportation and water withdrawal projects, the seven DEQ regional offices perform permit application reviews and issue permits for the covered activities.

**1(b) Agency Findings.** According to the VWPP program at the DEQ Tidewater Regional Office, the proposed beach nourishment project involves activities regulated by the VWPP program.

3

**1(c) Requirements.** A Joint Permit Application (JPA) should be submitted to the Virginia Marine Resources Commission for dissemination to the appropriate regulatory agencies.

**1(d) Recommendations.** In general, DEQ recommends that surface water and wetland impacts be avoided to the maximum extent practicable. To minimize unavoidable impacts to wetlands and waterways, DEQ recommends the following practices:

- Use directional drilling from upland locations for stream crossings, to the extent practicable. If directional drilling is not feasible, stockpile the material excavated from the trench for replacement.
- Operate machinery and construction vehicles outside of stream-beds and wetlands; use synthetic mats when in-stream work is unavoidable;

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**Response to Comment 2:** There would be no impacts to vegetated wetlands.

**Response to Comment 3:** Subsequent discussion with permitting agencies, including DEQ, VMRC, and USACE (included in Appendix A) indicate that submitting a JPA for the proposed project would not be required. Additionally, according to DEQ, its March 16, 2011 permitting waiver issued for the initial beach fill would apply to the proposed project.

**Response to Comment 4:** NASA would incorporate those recommended practices that are applicable to a beach nourishment project; specifically bullets 5, 9, and 10 in the provided list.

Mr. Joshua A. Bundick  
Wallops Island Post-Hurricane Sandy Beach Renourishment

- Construct trenches in a manner that does not drain the wetlands (for example, backfilling with extensive gravel layers thereby creating a French drain effect).
- Preserve the top 12 inches of trench material removed from wetlands for use as wetland seed and root-stock in the excavated area.
- Design erosion and sedimentation controls in accordance with the most current edition of the *Virginia Erosion and Sediment Control Handbook*. These controls should be in place prior to clearing and grading, and maintained in good working order to minimize impacts to State waters. The controls should remain in place until the area is stabilized.
- Place heavy equipment, located in temporarily impacted wetland areas, on mats, geotextile fabric, or use other suitable measures to minimize soil disturbance, to the maximum extent practicable.
- Restore all temporarily disturbed wetland areas to pre-construction conditions and plant or seed with appropriate wetlands vegetation in accordance with the cover type (emergent, scrub-shrub, or forested). The applicant should take all appropriate measures to promote re-vegetation of these areas. Stabilization and restoration efforts should occur immediately after the temporary disturbance of each wetland area instead of waiting until the entire project has been completed.
- Place all materials which are temporarily stockpiled in wetlands, designated for use for the immediate stabilization of wetlands, on mats, geotextile fabric in order to prevent entry in state waters. These materials should be managed in a manner that prevents leachates from entering state waters and must be entirely removed within thirty days following completion of that construction activity. The disturbed areas should be returned to their original contours, stabilized within thirty days following removal of the stockpile, and restored to the original vegetated state.
- Mark or flag all non-impacted surface waters within the project or right-of-way limits that are within 50 feet of any clearing, grading, or filling activities for the life of the construction activity within that area. The project proponent should notify all contractors that these marked areas are surface waters where no activities are to occur.
- Employ measures to prevent spills of fuels or lubricants into state waters.

4  
(cont.)

**1(e) Conclusion.** The VWPP program at DEQ-TRO concludes that this project will be consistent with VWPP program provided NASA obtains the appropriate VWPP authorization and complies with the conditions of the authorization.

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(cont.)

For additional information regarding the VWPP program, contact DEQ-TRO, Bert Parolari at (757) 518-2166.

**2. Subaqueous Lands, Dunes and Beaches.** According to the EA (page 3-12), impacts to state subaqueous lands and dunes (including beaches) are overseen by the Virginia Marine Resources Commission (VMRC). NASA obtained a permit from the

Mr. Joshua A. Bundick  
Wallops Island Post-Hurricane Sandy Beach Renourishment

agency prior to conducting a beach fill and seawall extension in 2011 and 2012 under the Wallops Flight Facility Shoreline Restoration and Infrastructure Protection Program. The VMRC permit (10-2003), which was issued on February 22, 2011 with an expiration date of February 22, 2016, authorizes the proposed beach renourishment activities that are the subject of this review.

**2(a) Agency Jurisdiction.** The Virginia Marine Resources Commission, pursuant to Section 28.2-1204 of the Code of Virginia, has jurisdiction over any encroachments in, on, or over any state-owned rivers, streams, or creeks in the Commonwealth. For any development that involves encroachments channelward of ordinary high water along natural rivers and streams, a permit is required from VMRC.

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

- VMRC for encroachments on or over state-owned subaqueous beds as well as tidal wetlands;
- U.S. Army Corps of Engineers (Corps) for issuing permits pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act;
- DEQ for issuance of a Virginia Water Protection Permit; and
- local wetlands board for impacts to wetlands.

**2(b) Agency Findings.** VMRC confirms that NASA's existing permit (VMRC #10-2003) gives them the authorization to place sand on the beach on an as needed basis and to install or repair the seawall until February 22, 2016, provide NASA does not exceed the permitted footprint or heights. In addition, the permit includes a renewal provision for an additional five years provided NASA requested the extension prior to February 2016.

**2(c) Requirement.** Should NASA use upland sand instead of material from the permitted dredge site, a permit modification would be required. An in-house modification could be performed provided the material used is >90% sand.

For further information, contact VMRC, George Badger at (757) 414-0710.

**3. Air Emissions.** According to the EA (page 3-13), the primary emissions from the proposed action would result from the burning of fossil fuels in mobile sources (e.g., dredges, earth moving equipment, etc.). It is not anticipated that these emissions would cause measurable long-term adverse impacts on air quality or climate change.

**3(a) Agency Jurisdiction.** DEQ's Air Quality Division, on behalf of the State Air Pollution Control Board, is responsible to develop regulations that become Virginia's *Air Pollution Control Law*. DEQ is charged to carry 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

**Response to Comment 5:** NASA notes VMRC's comment that the existing permit would authorize the Proposed Action provided that the project does not exceed the permitted footprint or heights. An upland sand source is not under consideration for the Proposed Action.

Mr. Joshua A. Bundick  
Wallops Island Post-Hurricane Sandy Beach Renourishment

life through control and mitigation of air pollution. The division ensures the safety and quality of air in Virginia by monitoring and analyzing air quality data, regulating sources of air pollution, and working with local, state and federal agencies to plan and implement strategies to protect Virginia's air quality. The appropriate regional office is directly responsible for the issue of necessary permits to construct and operate all stationary sources in the region as well as to monitor emissions from these sources for compliance. As a part of this mandate, the environmental documents of new projects to be undertaken in the state are also reviewed. In the case of certain projects, additional evaluation and demonstration must be made under the general conformity provisions of state and federal law.

**3(b) Agency Findings.** According to the DEQ Air Division, the project site is located in an ozone (O<sub>3</sub>) attainment area.

**3(c) Recommendation.** NASA should take all reasonable precautions to limit emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NO<sub>x</sub>), principally by controlling or limiting the burning of fossil fuels.

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For additional information regarding these comments, contact DEQ-Air, Kotur Narasimhan at (804) 698-4415.

**4. Solid and Hazardous Wastes and Hazardous Materials.** The EA (page 3-5) notes that the Final PEIS concluded that there would be negligible impacts with respect to hazardous materials and waste.

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

**4(b) Agency Findings.** The DEQ Division of Land Protection and Revitalization (DLPR) (formerly called the Waste Division) finds that neither solid and nor hazardous waste issues were addressed in the report. In addition, the EA did not include a search of waste-related data bases. DLPR staff performed a cursory review of DEQ data files and determined that there are several hazardous and formerly used defense sites

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**Response to Comment 6:** NASA would recommend that its contractors take all reasonable measures to limit emissions of VOCs and NO<sub>x</sub>.

**Response to Comment 7:** Sections 3.1.11, 3.1.12, 4.2.9, and 4.2.10 of the *Final PEIS* describe in detail the solid and hazardous waste issues associated with shoreline repair work, including the Proposed Action. Given that there would be negligible effects on these resource areas, a detailed discussion is not provided in this EA.

Mr. Joshua A. Bundick Wallops Island Post-Hurricane Sandy Beach Renourishment	
(FUDS) located within the same zip code, however their proximity to the subject site is unknown. A list of these sites is included in the DLPR comments attached to this response.	7 (cont.)
<b>4(c) Requirements.</b>	
<b>(i) Hazardous Waste Management</b>	
Any soil that is suspected of contamination or wastes that are generated during construction must be tested and disposed of in accordance with applicable federal, state, and local laws and regulations. Any construction or demolition debris must be characterized in accordance with the <i>Virginia Hazardous Waste Management Regulations</i> and disposed of at an appropriate facility.	
<b>(ii) Asbestos-containing Material and Lead-based Paint</b>	8
Any structures being demolished or removed should be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to demolition. If ACM or LBP are found, in addition to the federal waste-related regulations mentioned above, state regulations 9 VAC 20-80-640 for ACM and 9 VAC 20-60-261 for LBP must be followed.	
<b>4(d) Recommendations.</b>	
<b>(i) Additional Waste Site Information</b>	
The following website may be accessed to locate additional information on listed waste sites using their identification numbers:	
<a href="http://www.epa.gov/superfund/sites/cursites/index.htm">http://www.epa.gov/superfund/sites/cursites/index.htm</a> or <a href="http://www.epa.gov/enviro/html/rcris/rcris_query_java.html">http://www.epa.gov/enviro/html/rcris/rcris_query_java.html</a> .	
<b>(ii) Pollution Prevention</b>	
DEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All generation of hazardous wastes should be minimized and handled appropriately.	8 (cont.)
For additional information regarding waste comments, contact DEQ-DLPR, Steve Coe at (804) 698-4029.	
7	

**Response to Comment 7 (cont.):** Regarding the FUDS sites in the vicinity of the project area: During the initial fill cycle, Munitions and Explosives of Concern (MEC) were not encountered either at the offshore borrow area or along the Wallops Island beach. Accordingly, it is unlikely that MEC would be found while conducting the proposed repair work. However, as a best management practice and consistent with Section F.3 of its *Record of Decision* for the *Final PEIS*, NASA would ensure that its contractors performing the work are made aware of both the potential for encountering MEC and the reporting protocol should any be discovered.

**Response to Comment 8:** NASA would ensure that all project-related wastes are managed in accordance with applicable Federal, state, and local regulations.

<p>Mr. Joshua A. Bundick Wallops Island Post-Hurricane Sandy Beach Renourishment</p>	<p><b>5. Petroleum Storage Tanks.</b> If the construction of this project will include the use of portable ASTs (&gt;660 gallons) for more than 120 days, it must be registered with DEQ-TRO using AST Registration form 7540-AST. This form is available at the DEQ web site at <a href="http://www.deq.virginia.gov">www.deq.virginia.gov</a>.</p>	<p>9</p>
<p><b>6. Natural Heritage Resources.</b> The EA does not specifically discuss project impacts to natural heritage resources.</p>	<p>10</p>	
<p><b>6(a) Agency Jurisdiction.</b></p>		
<p><i>(i) Department of Conservation and Recreation</i></p>		
<p>The mission of the Virginia Department of Conservation and Recreation is to conserve Virginia's natural and recreational resources. DCR supports a variety of environmental programs organized within seven divisions including the Division of Natural Heritage. The Natural Heritage Program's (DCR-DNH) mission is conserving Virginia's biodiversity through inventory, protection, and stewardship. The <i>Virginia Natural Area Preserves Act</i>, 10.1-209 through 217 of the <i>Code of Virginia</i>, was passed in 1989 and codified DCR's powers and duties related to statewide biological inventory: maintaining a statewide database for conservation planning and project review, land protection for the conservation of biodiversity, and the protection and ecological management of natural heritage resources (the habitats of rare, threatened, and endangered species, significant natural communities, geologic sites, and other natural features).</p>		
<p><i>(ii) Department of Agriculture and Consumer Services</i></p>		
<p>The Endangered Plant and Insect Species Act of 1979, Chapter 39, §3.1-102- through 1030 of the <i>Code of Virginia</i>, as amended, authorizes the Virginia Department of Agriculture and Consumer Services (VDACS) to conserve, protect and manage endangered species of plants and insects. The VDACS Virginia Endangered Plant and Insect Species Program personnel cooperates with the U.S. Fish and Wildlife Service, DCR-DNH and other agencies and organizations on the recovery, protection or conservation of listed threatened or endangered species and designated plant and insect species that are rare throughout their worldwide ranges. In those instances where recovery plans, developed by the U.S. Fish and Wildlife Service, are available, adherence to the order and tasks outlines in the plans are followed to the extent possible.</p>		
<p><b>6(b) Agency Findings.</b></p>		
<p><i>(i) Assawoman Island Conservation Site</i></p>		
<p>According to the information currently in DCR-DNH files, the Assawoman Island</p>	<p>10</p>	<p>(cont.)</p>
<p>8</p>		

**Response to Comment 9:** NASA would require that its contractors register with DEQ portable fuel tanks with capacities greater than 660 gallons if it is likely that they would be onsite for more than 120 days.

**Response to Comment 10:** As a component of its Protected Species Monitoring Program, NASA performs regular surveys of the Wallops Island beach to identify sea turtle nesting activity. Section 3.2.5.2 of this EA describes the levels of recent loggerhead sea turtle activity within and adjacent to the project site while Section 3.2.5.3 describes potential effects of the Proposed Action.

Mr. Joshua A. Bundick  
Wallops Island Post-Hurricane Sandy Beach Renourishment

Conservation Site is located in the project vicinity. 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. Assawoman Island Conservation Site has been given a biodiversity significance ranking of B2, which represents a site of very high significance. The natural heritage resource of concern at this site is:

*Caretta caretta*                      Loggerhead sea turtle                      G3/S1B,S1N/LE/LT

The loggerhead is a cosmopolitan sea turtle which nests regularly in small numbers in Virginia. Loggerheads mate from late March to early June. From late April to early September, females make their way to shore to dig nests on ocean beaches, generally preferring high energy, relatively narrow, steeply sloped, coarse-grained beaches. Though thousands of eggs may be laid, only a few individuals are believed to survive to adulthood. This species is classified as endangered by the United States Fish and Wildlife Service (USFWS) and as threatened by the Virginia Department of Game and Inland Fisheries.

Loggerheads face threats both in the marine environment and on nesting beaches. The greatest cause of decline and the continuing primary threat to loggerhead turtle populations worldwide is incidental capture in fishing gear, primarily in longlines and gillnets, but also in trawls, traps and pots, and dredges (USFWS, 2005). On land, loggerheads face threats from habitat loss and alteration (primarily development of beaches, dredging, riprap, groins and jetties etc), increased nest predation by raccoons and feral animals, trampling by foot and vehicle traffic, and beachfront lighting which may affect hatchlings from reaching the ocean (NatureServe, 2009).

**(ii) Threatened and Endangered Plant and Insect Species**

VDACS has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act. Under a Memorandum of Agreement established between VDACS and DCR, DCR has the authority to report for VDACS on state-listed plant and insect species. According to DCR-DNH, there is the potential for the seabeach amaranth (*Amaranthus pumilus*, G2/S1/LT/LT) to occur within the project area if suitable habitat exists on site. Seabeach amaranth is a diminutive annual with green, relatively orbicular, fleshy leaves and reddish, fleshy stems. When seen in its barren beach foredune habitat, only the leafy tips of the plants project above the sand and any further growth is often prostrate,

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(cont.)

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**Response to Comment 11:** The commenter correctly notes that there is suitable habitat for seabeach amaranth within the area potentially affected by the Proposed Action. As a component of its Protected Species Monitoring Program, NASA performs annual seabeach amaranth surveys of the Wallops Island beach during the suggested late summer/early fall timeframe. Since beginning the regular surveys in 2010, no seabeach amaranth has been identified on Wallops Island. Text has been added to Section 3.2.5.2 of this EA to clarify this point, however detailed discussion of potential effects is not presented in this EA due to the documented absence of the species.

Mr. Joshua A. Bundick  
Wallops Island Post-Hurricane Sandy Beach Renourishment

leading to the formation of low mats when several plant occur. This globally rare species was originally known from maritime sand ranging from southern Massachusetts to South Carolina but is presently known from only two-thirds of its former range due to such threats as shoreline hardening, construction, and off-road vehicle traffic. It was last seen on the Virginia barrier islands in 1972 but was rediscovered during the 2004 growing season on Assateague Island by National Park Service personnel.

Seabeach amaranth habitat is fairly unusual since it is mostly found just ocean-ward of dunes, in an area nearly devoid of vegetation and subjected to violent wave action and storm overwash. This most likely indicates the species is a poor competitor, much like two of Virginia's state- and globally-rare plant species found on beaches: *Chamasesyce bombensis*, (G4G5/S2/NL/NL) and *Polygonum glaucum*, (G3/S1S2/NL/NL).

Sea-beach amaranth should be surveyed for from July 1-September 30 when the plant is flowering/fruitleting. However, weather conditions in any given year may lengthen or shorten this survey period.

**(iii) State Natural Area Preserves**

DCR files do not indicate the presence of any State Natural Area Preserves under the agency's jurisdiction in the project vicinity.

**6(c) Recommendations.**

**(i) Loggerhead Sea Turtle**

Due to the potential for this site to support populations of the loggerhead sea turtle, DCR-DNH recommends an inventory for sea turtle nests in the study area. With the survey results DCR-DNH can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources. DCR-DNH biologists are qualified and available to conduct inventories for rare, threatened, and endangered species. A list of other individuals who are qualified to conduct inventories may be obtained from the USFWS.

**(ii) Seabeach Amaranth**

Due to the potential for this site to support populations of the seabeach amaranth, DCR-DNH recommends an inventory for the plant in the study area. With the survey results DCR-DNH can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources. Survey results should be coordinated with DCR-DNH and USFWS. Upon review of the results, if it is determined the species is present, and there is a likelihood of a negative impact on the species, DCR-DNH will recommend coordination with VDACS to

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(cont.)

**Response to Comment 11 (cont.):** Should the commenter desire additional information regarding the potential effects of beach renourishment on seabeach amaranth if it were present within the action area, please see Section 4.3.10 of the *Final PEIS* and the July 2010 USFWS-issued Programmatic Biological Opinion (Appendix D of the *Final PEIS*).

Mr. Joshua A. Bundick  
Wallops Island Post-Hurricane Sandy Beach Renourishment

ensure compliance with Virginia's Endangered Plant and Insect Species Act.

**(iii) Natural Heritage Resource Information**

NASA should contact DCR-DNH to secure updated information on natural heritage resources if a significant amount of time passes before it is utilized. New and updated information is continually added to the Biotics Data System.

**7. Wildlife Resources and Protected Species.** According to the EA (page 3-21), due to the uncertainty in potential avian use (and potential effects) during the proposed repairs, 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 by a biological monitor on a daily basis. To mitigate potential impacts to the diamondback terrapin, NASA's biological monitor would report any known areas of concentrated nesting to construction personnel such that they could be avoided until the turtles have moved from the immediate area.

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

**7(b) Agency Findings.** DGIF notes that the site of beach nourishment is within the project area for the previously reviewed and approved Shoreline Restoration and Infrastructure Protection Project (SRIPP). DGIF finds that it appears the same protocols will be followed for this post-hurricane beach nourishment as for that performed during the SRIPP. As DGIF noted in its review of the SRIPP PEIS, a number of state and federal-listed wildlife and the resources upon which they depend are located from the project area.

**7(c) Conclusion.** DGIF concurs with the proposed work to be performed assuming the beach nourishment adheres to all time-of-year restrictions, monitoring requirements, required buffers, and/or other actions determined necessary for the protection of listed birds and herpetofauna known from the site and associated waters.

For additional information, contact DGIF, Amy Ewing at (804) 347-2211.

12

**Response to Comment 12:** NASA notes DGIF's concurrence with the proposed work. NASA would adhere to all biological mitigation and monitoring protocols established for the *Final SRIPP PEIS*.

Mr. Joshua A. Bundick  
Wallops Island Post-Hurricane Sandy Beach Renourishment

**8. Public Water Supply.**

**8(a) Agency Jurisdiction.** The Virginia Department of Health (VDH), Office of Drinking Water (ODW), reviews projects for the potential to impact public drinking water sources (groundwater wells and surface water intakes).

**8(b) Agency Findings.** VDH-ODW finds that there are no groundwater wells within a 1 mile radius of the project site. In addition, there are no surface water intakes in Zone 1 (within a 5 mile radius) of the project site.

**8(c) Conclusion.** VDH-ODW concludes that there are no apparent impacts and the project appears to be consistent with the Virginia *Waterworks Regulations*.

Contact VDH, Edward Albrecht at (804) 864-7495 for additional information.

**9. Historic and Archaeological Resources.** According to the EA (page 3-31), all dredging and sand placement would be conducted within areas previously surveyed for cultural resources. Given the lack of potential resources identified during the surveys, the EA concludes that no archeological resources or aboveground historic properties would be impacted.

**9(a) Agency Jurisdiction.** The Department of Historic Resources (DHR) conducts reviews of projects to determine their effect on historic structures or cultural resources under its jurisdiction. DHR, as the designated State's Historic Preservation Office (SHPO), ensures that federal actions comply with Section 106 of the *National Historic Preservation Act of 1966 (NHPA)*, as amended, and its implementing regulation at 36 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.

**9(b) Agency Comments.** According to DHR, NASA initiated direct consultation with DHR (February 25, 2013 letter attached) regarding the potential impacts of this project on historic resources. Provided that NASA requires its dredge contractor to follow the conditions detailed in the February 25, 2013 consultation letter, VDH concurs that the proposed undertaking would have no effect on National Register-eligible properties.

For additional information, contact DHR, Amanda Lee at (804) 367-2323.

13

14

**Response to Comment 13:** NASA notes VDH's comment that there would be no project-related impacts to drinking water sources.

**Response to Comment 14:** NASA would ensure that its contractors follow the protocols detailed in the February 25, 2013 consultation letter.

Mr. Joshua A. Bundick  
Wallops Island Post-Hurricane Sandy Beach Renourishment

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

Pursuant to the Coastal Zone Management Act of 1972, as amended, federal activities located inside or outside of Virginia's designated coastal management area that can have reasonably foreseeable effects on coastal resources or coastal uses must, to the maximum extent practicable, be implemented in a manner consistent with the Virginia Coastal Zone Management Program (VCP). The VCP consists of a network of programs administered by several agencies. The DEQ coordinates the review of Federal Consistency Determinations with agencies administering the Enforceable and Advisory Policies of the VCP. A FCD dated March 8, 2013 (received March 12, 2013) was submitted for the proposed renourishment project that includes an analysis of the enforceable policies of the VCP.

Pursuant to 15 CFR §930.41(a) DEQ is allowed up to sixty days to conduct a coordinated review and respond to submitted Federal Consistency Determinations. The sixty-day review period for NASA's FCD began on March 12, 2013 and ends on May 10, 2013.

**Federal Consistency Public Participation**

In accordance with 15 CFR § 930.2, public notice of the proposed action was published on DEQ's web site from March 12, 2013 to April 9, 2013. No public comments were received in response to the notice.

**Federal Consistency Analysis**

According to information in the FCD, the proposed activity would have no effect on the following enforceable policies: wetlands management; point source pollution control; shoreline sanitation; and coastal lands management. The resource agencies that are responsible for the administration of the enforceable policies of the VCP generally agree with findings of the FCD. The applicant must ensure that the proposed action is consistent with the aforementioned policies. In addition, the document includes a review of potential project impacts to the advisory policies of the VCP. The document finds the proposal consistent with the advisory policies.

**Federal Consistency Concurrence**

Based on our review of NASA's consistency determination, EA, and the comments and recommendations submitted by agencies administering the enforceable policies of the VCP, DEQ concurs that this proposal is consistent with the VCP provided NASA obtains and complies with all applicable permits or approvals. Also, other state approvals which may apply to this project are not included in this concurrence.

15

**Response to Comment 15:** NASA notes DEQ's concurrence that the proposed project would be consistent with the enforceable policies of the VCP. NASA would obtain and comply with all applicable permits and approvals prior to implementing the Proposed Action.

Mr. Joshua A. Bundick  
Wallops Island Post-Hurricane Sandy Beach Renourishment

Therefore, NASA must ensure that this project is constructed and operated in accordance with all applicable federal, state, and local laws and regulations.

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(cont.)

#### REGULATORY AND COORDINATION NEEDS

**1. Surface Waters and Wetlands.** A Virginia Water Protection Permit may be required for project impacts pursuant to Virginia Code §62.1-44.15:5. Coordination with the appropriate agencies for anticipated impacts is accomplished through the submission of a JPA to VMRC. For additional information regarding the VWPP program, contact DEQ-TRO, Bert Parolari at (757) 518-2166.

**2. Air Quality Regulations.** Guidance on minimizing the emission of volatile organic compounds (VOCs) and oxides of nitrogen (NO<sub>x</sub>) may be obtained from DEQ-TRO, Troy Breathwaite at (757) 518-2006.

**3. Solid and Hazardous Wastes.** All solid waste, hazardous waste, and hazardous materials must be characterized and managed in accordance with all applicable federal, state, and local environmental regulations. Some of the applicable state laws and regulations are:

- Virginia Waste Management Act (Code of Virginia Section 10.1-1400 *et seq.*);
- Virginia Hazardous Waste Management Regulations (VHWMR) (9 VAC 20-60);
- Virginia Solid Waste Management Regulations (VSWMR) (9 VAC 20-80); and
- Virginia Regulations for the Transportation of Hazardous Materials (9 VAC 20-110).

Applicable federal regulations are as follows:

- *Resource Conservation and Recovery Act* (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and
- *U.S. Department of Transportation Rules for Transportation of Hazardous Materials*, 49 CFR Parts 107, 171.1-172.558.

For additional information, contact DEQ-TRO, Milt Johnston at (757) 518-2151.

**3(a) Asbestos-Containing Material.** It is the responsibility of the owner or operator of a demolition activity, prior to the commencement of the demolition, to thoroughly inspect the affected part of the facility where the operation will occur for the presence of asbestos, including Category I and Category II nonfriable asbestos containing material (ACM). Upon classification as friable or non-friable, all waste ACM shall be disposed of in accordance with the Virginia Solid Waste Management Regulations (9 VAC 20-80-

Mr. Joshua A. Bundick  
Wallops Island Post-Hurricane Sandy Beach Renourishment

640), and transported in accordance with the Virginia regulations governing Transportation of Hazardous Materials (9 VAC 20-110-10 *et seq.*). Please contact the DEQ Division of Land Protection and Revitalization, Linda Richardson at (804) 698-4318, and the Department of Labor and Industry, Ronald L. Graham at (804) 371-0444.

**3(b) Lead-Based Paint.** If applicable, the proposed project must comply with the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) regulations, and with the Virginia Lead-Based Paint Activities Rules and Regulations. For additional information regarding these requirements contact the Department of Professional and Occupational Regulation, David Dick at (804) 367-8588.

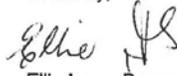
**4. Storage Tanks.** The use of portable fuel AST(s) with a capacity of greater than 660 gallons for more than 120 days will require that the tank(s) are registered with DEQ using *AST Registration Form 7540-AST*. Tank registration may be accomplished by contacting Tom Madigan, DEQ Tidewater Regional Office, at (757) 518-2115 or by e-mail at [tmadigan@deq.virginia.gov](mailto:tmadigan@deq.virginia.gov).

**5. Natural Heritage Resources.** Contact DCR-DNH Natural Heritage Inventory Manager, J. Christopher Ludwig at [chris.ludwig@dcr.virginia.gov](mailto:chris.ludwig@dcr.virginia.gov) or (804) 371-6206 to discuss arrangements to conduct an inventory of the loggerhead sea turtle and the seabeach amaranth. A list of other individuals who are qualified to conduct inventories may be obtained by contacting the USFWS Virginia Field Office at (804) 693-6694.

Contact DCR-DNH, Rene Hypes at (804) 371-2708, to secure updated information on natural heritage resources if a significant amount of time passes before the project is implemented, since new and updated information is continually added to the Biotics Data System.

Thank you for the opportunity to review the Draft Environmental Assessment and Federal Consistency Determination for the North Wallops Island Post-Hurricane Sandy Beach Renourishment in Accomack County. Detailed comments of reviewing agencies are attached for your review. Please contact me at (804) 698-4325 or John Fisher at (804) 698-4339 for clarification of these comments.

Sincerely,



Ellie Irons, Program Manager  
Environmental Impact Review

Enclosures

Mr. Joshua A. Bundick  
Wallops Island Post-Hurricane Sandy Beach Renourishment

Ec: Cindy Keltner, DEQ-TRO  
Steve Coe, DEQ-DLPR  
Kotur Narasimhan, DEQ-Air  
Tony Watkinson, VMRC  
Amy Ewing, DGIF  
Robbie Rhur, DCR  
Keith Tignor, VDACS  
Barry Matthews, VDH  
Roger Kirchen, DHR  
David Spears, DMME  
Pam Mason, VIMS

Cc: Steven Minor, Accomack County  
Elaine Meil, Accomack-Northampton PDC

**Document 005**  
**U.S. Environmental Protection Agency Region III**  
**May 10, 2013**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029

MAY 10 2013

Joshua Bundick  
WFF NEPA Manager  
National Aeronautics and Space Administration  
Goddard Space Flight Center  
Wallops Flight Facility  
Wallops Island, VA 23337

Re: Draft Environmental Assessment (DEA) - Wallops Island Post-Hurricane Sandy  
Shoreline Repair, Wallops Island, Virginia, April 2013

Dear Mr. Bundick:

In accordance with the National Environmental Policy Act (NEPA) of 1969, the U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Assessment (DEA) for the Wallops Island Post-Hurricane Sandy Shoreline Repair located at the Wallops Flight Facility (WFF), Wallops Island, Virginia. The proposed action evaluated in this EA is the placement of approximately 1 million cubic yards (CY) on the beach shoreline of Wallops Island and complete the seawall extension. The purpose and need of the proposed project is to repair the southern two-thirds of the nourished beach due to sand losses sustained during the October 2012 storm- Hurricane Sandy. The post-storm condition of the beach does not provide the same level of storm damage protection for which it was originally designed.

This EA is a follow up NEPA document to NASA's 2010 Programmatic Environmental Impact Statement (PEIS) for the WFF Shoreline Restoration and Infrastructure Protection Program. The Final PEIS selected Alternative 1, which included the placement of 3.2 million CY dredged from offshore shoal A, as well as an approximately 1,400 feet extension of a rock seawall. Dredging for this activity began in the summer of 2012. The Final PEIS evaluated shoreline nourishment and sea wall extension storm damage reduction project with a 50-year design life. The Final PEIS did not evaluate the potential adverse environmental impacts associated with future renourishment cycles, as future cycles would be evaluated in separate NEPA documents, which were anticipated to occur approximately every five years. EPA provided comments on the 2010 Shoreline Draft PEIS and Final PEIS, expressing concerns about future renourishment cycles, impact and recovery of beach and shoal habitats, potential impacts to rare, threatened or endangered species, and secondary and cumulative impacts. EPA, as well as other interested stakeholders, was concerned about the placement and use of hard structures and the use of north Wallops Island as a potential borrow area, and supported the selection of the beach replenishment only alternative.

We understand that coordination has taken place between NASA WFF and permitting agencies to verify that the currently proposed nourishment cycle of approximately 1 million CY

fits under permits originally issued for the project and does not require new permits. The timing of this action so close to the original work completed in 2012, increasing the frequency of adverse impacts to resources, is of concern to EPA. Upon review of the Draft EA, we remain concerned about the potential impact of future renourishment, impact and recovery of beach and shoal habitats, rare, threatened or endangered species, and cumulative impacts. It may be appropriate to consider if, as was noted in our comment letters on the PEIS, future NEPA study, analysis and documentation of environmental consequences and alternatives for additional shoreline nourishment phases warrants more in-depth assessment, possibly through a Supplemental EIS. This is particularly apparent in light of the unanticipated frequency that may be required to maintain the desired level of storm damage protection.

1

We continue to encourage NASA to receive input from interagency teams and public stakeholders throughout the NEPA process. Thank you for allowing EPA with the opportunity to review and comment on the Draft EA. If you have questions regarding these comments, the staff contact for this project is Alaina McCurdy, at (215) 814-2741.

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Sincerely,

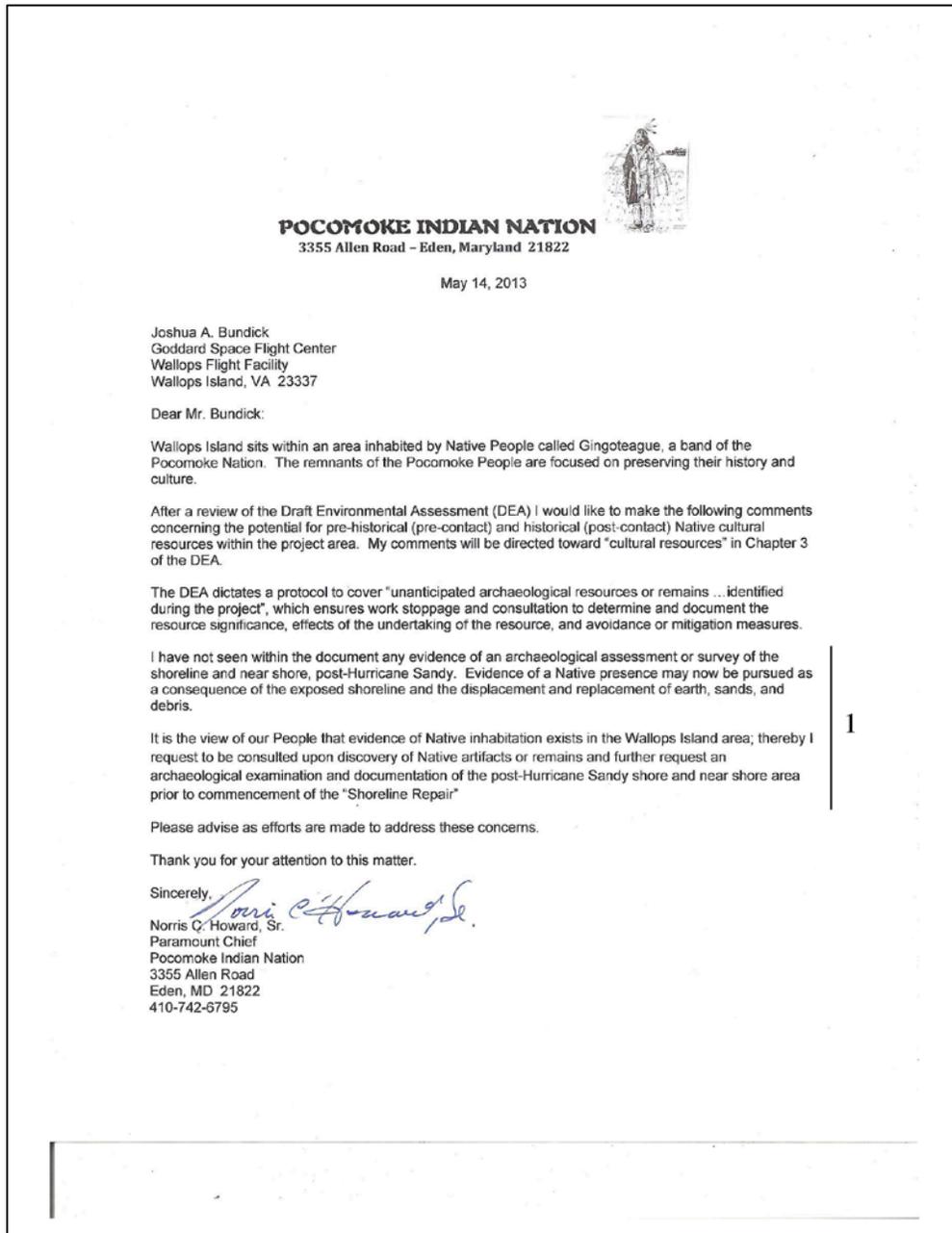


Barbara Rudnick  
NEPA Team Leader  
Office of Environmental Programs

**Response to Comment 1:** NASA notes EPA’s concerns regarding the effects of future renourishment cycles. As discussed in the *Final PEIS*, NASA would prepare NEPA documentation for future renourishment actions commensurate with their expected environmental effects, taking into consideration the scope of the proposed project and the extent of resources potentially affected.

**Response to Comment 2:** NASA will continue to seek input from interagency teams and public stakeholders throughout its NEPA process.

**Document 006**  
**Pocomoke Indian Nation**  
**May 14, 2013**



**Response to Comment 1:** NASA responded directly to the commenter, indicating that it did not feel that additional cultural resources surveys of the beach/nearshore zone would be warranted. NASA's May 23, 2013 response is provided in this appendix as Document 007. The commenter's subsequent June 12, 2013 response is provided as Document 008.

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**Document 007**  
**NASA Response to Pocomoke Indian Nation**  
**May 23, 2013**

National Aeronautics and  
Space Administration  
**Goddard Space Flight Center**  
**Wallops Flight Facility**  
**Wallops Island, VA 23337**



Reply to Attn of: 228

May 23, 2013

Mr. Norris C. Howard, Sr.  
Paramount Chief  
Pocomoke Indian Nation  
3355 Allen Road  
Eden, MD 21822

Dear Chief Howard:

Thank you for the May 14, 2013 letter regarding the proposed Wallops Island Post-Hurricane Sandy Shoreline Repair project. As stated in your letter, you have concerns that artifacts of cultural significance may have been exposed by October 2012's Hurricane Sandy, and that additional archaeological survey of the project area should be undertaken prior to conducting the proposed renourishment. While we appreciate the concerns you have raised, we feel that in consideration of both the physical context of the proposed project area and the level of survey effort NASA has already undertaken, additional archaeological survey of the Wallops Island beach is not necessary. Following is our supporting rationale:

Physical Context of the Project Area

The area proposed for repair is approximately 12,000 feet of shoreline along southern Wallops Island. For most of its history, the project area has been in a state of constant erosion, losing shoreline in some places at a rate of more than 10 feet per year. However, with the installation of the approximately 3-mile-long rock seawall in the 1990s, over half of the shoreline's position within the project area has been fixed for more than 15 years, leading to complete erosion of the seaward beach and substantial scouring at the seawall's base. In summary, much of the proposed project area was open water prior to completing the initial beach fill (see Figure 1). The remaining mile of project area, a remnant of a large dredge-fill construction project to repair the beach following storm damage in 1962 (see Figure 2), continued to erode to the point that temporary geotextile tubes (shown on Figure 1) were installed until the beach fill was completed.

Also of note is that due to the continued erosion within the southernmost area of the project site, this area became a debris dumping area (to provide erosion protection) in the 1960s. The contents of the site included large pieces of concrete rubble, metal debris, soils, and munitions and explosives of concern (MEC). NASA conducted an MEC clearance and removal in October-November 2010. All MEC was removed; concrete and metal were recycled. During the removal, an intrusive clearance was conducted to an estimated depth of 1-2 feet below ground surface. The average elevation of the area was approximately 5 feet above grade, making the total clearance depth approximately 6-7 feet from the top of the berm.

NASA Response to Pocomoke Indian Nation (cont.)  
May 23, 2013

2



Figure 1. Wallops Island Shoreline Prior to 2012 Initial Beach Fill



Figure 2. 1966 Image Showing Large Fill Area on South Wallops Island

**NASA Response to Pocomoke Indian Nation (cont.)**  
**May 23, 2013**

3

Past Archaeological Investigation

**Predictive Modeling:** During the early stages of preparing a comprehensive shoreline management strategy for Wallops Island, in November 2003, NASA prepared a Cultural Resources Assessment (CRA) that examined each of the three land areas of the facility within WFF's property boundaries: Wallops Main Base, Wallops Mainland, and Wallops Island. The study was completed to assist NASA in meeting its obligations under Sections 106 and 110 of the National Historic Preservation Act and established a predictive model for understanding the archaeological potential over the entire WFF property. Since its approval by the Virginia Department of Historic Resources (VDHR) in 2003, WFF has utilized its results to determine when archaeological investigation is needed prior to undertaking an earth-moving activity. The model predicted that a small section of the southernmost end of the Wallops Island shoreline could have moderate sensitivity for both pre-historic and historic resources, therefore NASA planned to survey the area should future ground disturbing activities be needed within the area.

**2006 Shoreline Field Survey:** In anticipation of the need for shoreline restoration measures, NASA conducted an archaeological survey of 3.85 miles of the Wallops Island shoreline on September 18, 2006. During the survey, field archaeologists searched for all significant cultural materials within the project area. *No significant cultural remains or archaeological sites were discovered during this evaluation.*

**2007 Shoreline Field Survey:** In anticipation of the need for slurry pits for installation of geotextile tubes, NASA conducted a limited cultural resources survey along 1.85 miles of beach on January 22, 2007. This survey included a portion of beachfront that was revealed by the predictive model to have moderate potential for the presence of historic archaeological sites. During the survey, field archaeologists searched for all significant cultural materials within the geotextile tubes project area. *No significant cultural remains or archaeological sites were discovered during this evaluation.*

**2009 Borrow Area Field Survey:** Between March and September 2009, NASA conducted a cultural resources study within a 2-square-mile block on each of the two proposed offshore borrow areas (see Figure 3). The primary objective of this study, which included archival research and a remote sensing survey, was to identify maritime related cultural resources, particularly submerged watercraft, and buried prehistoric sites within the two survey areas.

Magnetic and acoustic (side scan sonar, sub bottom profiler, and echo sounder) bathymetric data were reviewed during data collection for anomalies, and reviewed a second time during post-processing. The greatest amount of ferrous material was detected in Unnamed Shoal A, which is located approximately 1.5 miles east of Blackfish Bank Shoal. The acoustic and magnetic anomalies on Unnamed Shoal A are consistent with debris that originated from two sources: (1) sport and commercial fishermen, who often lose anchors, chains, wire rope sections, trawls and general flotsam, and (2) barges that have transported and dropped a variety of ferrous debris to create an artificial reef on Blackfish Bank Shoal.

Data analysis, when coupled with the commercial and recreational fishing that takes place at or near Unnamed Shoal A and Unnamed Shoal B, indicated that *none of the detected anomalies have potential to represent significant submerged cultural resources.*

**NASA Response to Pocomoke Indian Nation (cont.)  
May 23, 2013**



**Figure 3. Offshore Sources of Beach Fill Material; Both Unnamed Shoals A and B were Surveyed in 2009 for Cultural Resources**

**2009 Nearshore Field Survey:** A cultural resources study was conducted in August 2009 to identify maritime related cultural resources, particularly submerged watercraft, and buried archaeological sites within the nearshore area proposed for a sand retention structure (breakwater or groin). The survey consisted of four tasks: remote sensing of the proposed breakwater location, a scientific diving survey of the proposed structure location, a pedestrian survey of the Wallops Island shoreline, and archaeological monitoring of geotextile tube installation on the shoreline. A total of 92 acres was evaluated during the survey efforts.

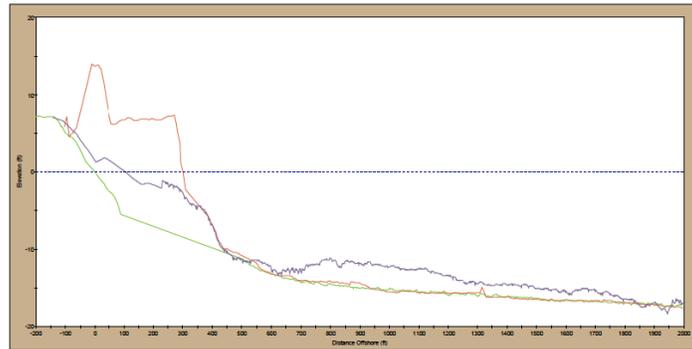
Analysis of the target groups indicated that none of the target groups had the potential to represent significant submerged cultural resources. They instead represent debris associated with the previous structure (evidenced by wooden piling and steel cable) that was demolished or debris that was dumped within the survey area. In summary, *the archaeological studies undertaken for the shoreline program did not identify any significant cultural resources.*

**Initial Beach Fill Induced Shoreline Changes**

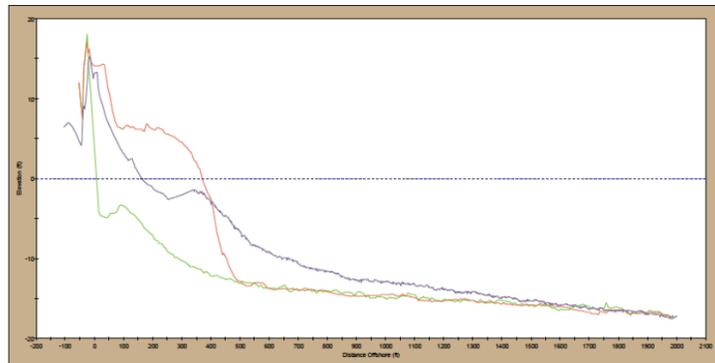
The initial beach fill placed in spring and summer 2012 filled the substantial void east of the seawall with sand dredged from Shoal A approximately 7 miles east of Assateague Island; approximately 12 miles northeast of the project site. Along most of this approximately 4 mile length of shoreline, up to 10 feet of “new” sand was placed (see Figure 4). Along the southernmost portion of the project area, which consisted primarily of intertidal beach, approximately 6-8 feet of “new” sand was placed on top of the existing bottom (see Figure 5). In both Figures, the green line is prior to initial beach fill; the red line post-beach fill; and purple line is post-Hurricane Sandy. As shown in these figures, the primary movement of sediment within the project area was in the cross-shore (easterly) direction and there was not notable erosion of the pre-existing bottom. In summary, we are confident that the majority of sand movement that occurred as a result of Hurricane Sandy was the “new” sand from the offshore borrow area, a location that was subjected to rigorous archaeological investigation as summarized above.

**NASA Response to Pocomoke Indian Nation (cont.)**  
**May 23, 2013**

5



**Figure 4. Beach Profiles at Southernmost Area of Project**



**Figure 5. Beach Profiles at Middle Area of Project**

Conclusion

In consideration of the facts that: (1) the entire project area has been subjected to a multitude of both natural (erosion) and manmade (filling, excavation) disturbances prior to the spring/summer 2012 initial beach fill, (2) a very limited portion of the project area has been modeled to have the potential for cultural resources, (3) the subject area has been investigated multiple times prior to the initial beach fill, and that (4) a majority of the Hurricane Sandy-induced sediment movement within the project area was "new sand" from the previously surveyed offshore borrow area, we do not plan to conduct additional archaeological investigations at this time. This conclusion is also supported by the multiple project-related consultations with the VDHR, which have

**NASA Response to Pocomoke Indian Nation (cont.)**

**May 23, 2013**

6

concluded that no additional survey work is needed on the Wallops Island shoreline; rather survey work would only be required in an area several miles east in the ocean if the dredging contractor proposes additional anchorages for pump-out equipment.

However, during the course of this or any other project undertaken at WFF, if an unexpected discovery of cultural resources occurs, we will immediately stop work and consult with the VDHR and potentially interested tribes, including the Pocomoke Indian Nation, to determine the significance of the resource, potential effects on it, and any necessary mitigation that could be taken.

Thank you for your interest in this project. Please do not hesitate to contact me to if you would like to discuss our response further. You can either reach me at 757-824-1309, or at [Randall.M.Stanley@nasa.gov](mailto:Randall.M.Stanley@nasa.gov). Alternately, you may contact Mr. Josh Bundick at 757-824-2319, or at [Joshua.A.Bundick@nasa.gov](mailto:Joshua.A.Bundick@nasa.gov).

Sincerely,

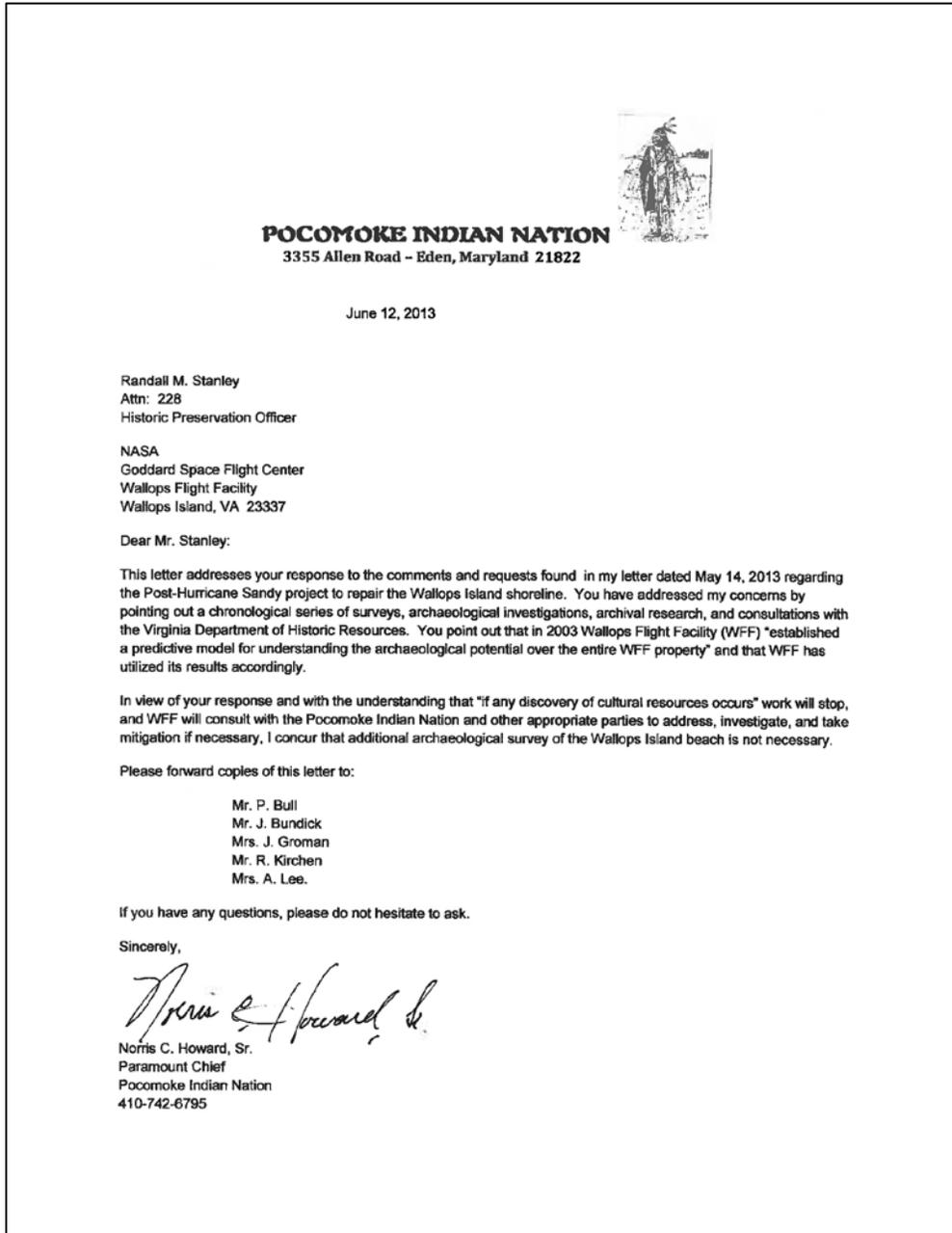


Randall M. Stanley  
Historic Preservation Officer

Enclosure

cc:  
228/Mr. P. Bull  
250/Mr. J. Bundick  
EMD/Ms. J. Groman  
VDHR/Mr. R. Kirchen  
VHDR/Ms. A. Lee

**Document 008**  
**Pocomoke Indian Nation Response to NASA's May 23, 2013 Letter**  
**June 12, 2013**



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Document 009  
The Nature Conservancy  
May 14, 2013

 <p>The Nature Conservancy Protecting nature. Preserving life.™</p>	<p>The Nature Conservancy in Virginia 490 Westfield Road Charlottesville, VA 22902</p>	<p>tel (434) 295-6106 fax (434) 979-0370 nature.org</p>
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TNC Comments on NASA-WFF Post Sandy DEA Page 1 of 4

**Response to Comment 1:** NASA notes The Nature Conservancy's comment that it has no objections or serious concerns with the Proposed Action.

<p>Alternative 1 “will provide short-term protective benefits to [Wallops Flight Facility] without creating significant deleterious impacts to the barrier islands owned by the Conservancy and other conservation partners to the north and south of Wallops Island.” We are not aware of any conditions or additional information that would alter this previous assessment.</p>	<p>1 (cont.)</p>
<p>At the same time, NASA’s proposed action in this DEA provides us with an opportunity to raise the same basic issues that we raised in our April 19, 2010 letter and in many subsequent conversations with NASA and other stakeholders. To summarize briefly, those issues are as follows:</p>	
<p>1. While the SRIPP work did appear to provide some protection during Hurricane Sandy, the loss of so much sand from a relatively moderate storm emphasizes that maintaining even this level of protection will likely require frequent and costly maintenance and reconstruction. While it is too early to state definitively whether the renourishment anticipated in the Final PEIS (9 renourishment cycles over the anticipated 50-year life of the project) understated the true maintenance requirements, the need for significant renourishment so soon after project completion does seem to suggest that need may be higher than originally projected.</p>	<p>2</p>
<p>2. In many ways the higher cost of ongoing maintenance pales in comparison to whether the SRIPP – or any engineered solution – can provide adequate protection to NASA’s infrastructure on Wallops Island, especially given rising sea levels and increasingly frequent and more powerful coastal storms. As we stated at the very start of these discussions, we are concerned that NASA’s infrastructure remains extremely vulnerable and, in its current location, will become far more so over time.</p>	<p>3</p>
<p>3. We have and continue to advocate that NASA consider strategic relocation of its critical infrastructure off of Wallops Island and on to the mainland. We acknowledge that such a move is costly and presents its own series of safety, engineering, and technical challenges, but again submit that those are likely more malleable problems that the threats facing NASA WFF’s infrastructure in its current location.</p>	<p>4</p>
<p>4. We remain concerned that NASA lacks some of the fundamental science on the barrier island system and the associated geology and sediment dynamics to inform management decisions that will best protect the shoreline of Wallops Island while avoiding any deleterious impacts to the larger surrounding system. As we stressed in our earlier comments on the SRIPP, our consultant on that project, Dr. Robert S. Young, strongly questioned the utility of the GENESIS model used by USACE to produce detailed volume data for beach renourishment and estimates of beach fill durability, since the calibrated model was not successfully verified and does not account for the influence of antecedent geology on the sediment budget at Wallops. The Conservancy submits that there are at least two ways to begin to improve our collective understanding of this complex system and to make better management decisions in the future.</p>	<p>5</p>
<p>First, we want to reiterate our earlier request that NASA-WFF expand the scope of its ongoing efforts to monitor beach volume and profile and determine the precise fate of sand as it erodes from the renourished beach. As we stated in our April 19, 2010 letter, “to produce credible</p>	<p>6</p>
<p>TNC Comments on NASA-WFF Post Sandy DEA</p>	<p>Page 2 of 4</p>

**Response to Comment 2:** NASA acknowledges that the long-term estimates of sand presented in the *Final PEIS* could be less than that actually needed to afford the design level of storm damage reduction to its Wallops Island facilities. To this end, NASA is committed to conducting long-term monitoring of the project area to identify erosional hotspots and make adjustments to projected sand volumes over the life of the project. Should the actual volumes needed differ substantially from those presented in the *Final PEIS*, NASA would prepare additional engineering and environmental analysis, as appropriate.

**Response to Comment 3:** NASA acknowledges that implementing a storm damage reduction strategy in the face of climate change will become an increasingly difficult task. However, as summarized in Section 2.3.5 of this EA, for each renourishment cycle, NASA will employ the results of its monitoring program to determine the appropriate volume of sand necessary to compensate for sea level rise. While Appendix A of the *Final PEIS* does present specific volumes of sand necessary to elevate the beach profile by an approximate height of 11 millimeters per year, these volumes are presented only for planning purposes. The actual amount employed would be determined by the results of the monitoring program.

**Response to Comment 4:** NASA appreciates the Nature Conservancy's recommendation to strategically relocate critical infrastructure to areas less susceptible to storm damage. As discussed in Sections 2.2.1 and 2.3.3 of the *Final PEIS*, due to the hazardous nature of operations on Wallops Island, many of NASA's facilities (e.g., launch pads, spacecraft fueling facilities) must remain at a substantial distance from the general public. Their relocation would require major disruption to neighboring property owners. In summary, planning for this type of relocation is outside the temporal boundary of actions considered in this EA.

However, for those facilities that are not subject to such hazardous operations, NASA already considers the potential for storm damage in its planning process. As such, it would construct such future facilities in areas in less damage-prone areas, as practicable.

**Response to Comment 5:** NASA is aware that there are those within the scientific community who have concerns regarding the ability of the GENESIS model to accurately reflect sediment transport dynamics. However, it should be noted that all mathematical models have limitations and can not exactly mimic nature. While they do provide valuable insights, the fact that they have inherent limitations is one of the principle reasons for NASA's adoption of an adaptive management strategy for planning future renourishment cycles.

As such, the renourishment volumes presented in the *Final PEIS* should be interpreted as estimates that will be validated by long-term shoreline monitoring. Should observed shoreline performance differ substantially from the estimates produced by GENESIS, NASA would reassess its storm damage reduction strategy for Wallops Island.

**Response to Comment 6:** NASA appreciates The Nature Conservancy's request for a "landscape level" monitoring effort. However, the objectives of NASA's shoreline monitoring program are twofold: (1) to track sediment movement such that renourishment cycles can be planned; and (2) to determine the extent to which the project may be impacting adjacent properties.

Accordingly, NASA has established the geographic extent of the monitoring area to include not only its shoreline but also the entire length of neighboring Assawoman Island and the southern 0.5 miles of Assateague Island to the north, a total distance of approximately 14 miles. NASA is confident that this geographic extent will provide the information necessary to identify the need to renourish the beach, therefore fulfilling Objective 1.

**Response to Comment 6 (cont.):** Regarding Objective 2, the largest project-induced shoreline changes would be expected to occur immediately adjacent to the project, decreasing exponentially with distance from the project. To this end, the coastline of the Virginia portion of the Delmarva Peninsula has been experiencing chronic and severe erosion for at least the last 150 years. This shoreline erosion is the primary reason for the need for shoreline protection at Wallops Island. It is also one of the chief causes driving the evolution of the other barrier islands and inlets along Virginia's Eastern Shore.

It is important to note that these coastal features have changed in shape and location in the past and will continue to do so in the future regardless of whether modifications are made to the Wallops Island shoreline. This is especially true when considering potential future shoreline changes driven by rising sea levels.

While a substantial expansion of the study area would be a commendable academic endeavor, NASA expects that the added tangible benefits to meeting Objective 2 from such a study would be limited. Within the the context of a very dynamic system driven by a myriad of complex processes, attempting to effectively separate natural variability, sea level rise, and other complicating factors from the equation to derive a meaningful cause and effect relationship between NASA's project and changes within a larger study area would be impractical. Therefore, NASA intends to maintain its current 14-mile-long study area.

<p>results and conclusions about onshore-offshore sediment transport, the geographic extent of the shoreline and beach volume monitoring must extend well beyond the four-meter closure depth and include a significant buffer to the north and south of Wallops—essentially a landscape-scale monitoring effort.” Given the recent damage to the SRIPP from Hurricane Sandy, we believe such an expanded monitoring effort is more important now than ever.</p>	6 (cont.)
<p>Second, we want to make sure that NASA-WFF is aware and supportive of a project proposal that the Conservancy and academic partners have submitted a to Region V of U.S. Fish and Wildlife Service for Hurricane Sandy Supplemental funding, entitled “Investigating the Impacts of Climate Change on the Chincoteague Inlet- Barrier Island System and Developing Collaborative Stakeholder Adaptation Strategies in the Chincoteague National Wildlife Refuge Area.” A copy of the proposal is attached. In short, the study will examine the impacts of climate change and coastal management strategies on the Chincoteague Inlet-barrier island system. The overarching goal of the study is to determine which management approaches will allow the inlet and barrier island system to adjust gradually to changing climate, thereby avoiding the impact of catastrophic change and providing the greatest possible benefit to all stakeholders in the region. We know that NASA-WFF has already supported the need for this sort of study, and we hope to work with you on this effort and associated projects in the future.</p>	7
<p>While we continue to stress these issues, we must acknowledge and praise NASA for the significant and concrete steps it has taken over the last few years, and especially the last several months, on these fronts. First and foremost, NASA convened a highly successful <i>Resilience and Adaptation to Climate Risks Workshop for the Eastern Shore of Virginia</i> in November, which is a significant step forward in your efforts to understand with more accuracy and precision how a changing climate will impact your operations at Wallops Flight Facility.</p>	
<p>We are also excited about the prospect of establishing a Mid-Atlantic Coastal Research Institute and appreciate the initiative and leadership taken by Caroline Massey to move this from a concept to a reality. This effort has the real potential to help ensure that NASA and the leading academic institutions in the region, including the University of Virginia’s Long Term Ecological Research Project and the Marine Science Consortium among others, better coordinate, collaborate, and synthesize data and information necessary to understand the regional coastal ecosystem and quantify associated critical ecosystem services on which people and economies depend. The Conservancy hopes to work with stakeholders to apply the research produced from the institute to inform various adaptive management responses to climate change that enhance the resilience of both the natural and built environments along the Eastern Shore and the greater Mid-Atlantic. Ideally, the Chincoteague Inlet – barrier island system project outlined above and associated subsequent research efforts could be some of the headlining projects at the Coastal Research Institute when it is formally established.</p>	8
<p>We are also very appreciative of NASA’s work with the Navy and Accomack County to initiate the Joint Land Use Study. We believe this study will be very valuable to identify how land use surrounding the facility has the potential to impact both existing operations and NASA’s flexibility to expand and/or modify those operations in the future, especially preserving</p>	
<p>TNC Comments on NASA-WFF Post Sandy DEA</p>	<p>Page 3 of 4</p>

**Response to Comment 7:** NASA is aware of the subject proposal and is very supportive of the study’s goals and objectives. Should the project receive funding, NASA would gladly share its data with the study team. *Please note that the referenced proposal is not included here in Appendix B; rather it is available upon request.*

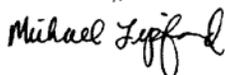
**Response to Comment 8:** NASA is also excited about the larger-scale collaborative planning efforts that are underway, and looks forward to continued fruitful partnerships with The Nature Conservancy.

alternatives for relocation of facilities. The JLUS should also identify a number of ways that NASA, the Navy, Accomack County, and other stakeholders, including The Nature Conservancy, can work together to address these issues in a proactive, collaborative, and coordinated fashion. Again, The Nature Conservancy appreciates NASA's leadership on this front.

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(cont.)

In conclusion, The Nature Conservancy recognizes the very real challenges NASA faces as it seeks to protect the sizeable investments and important operations at the Wallops Flight Facility. We appreciate the necessity of continued investments in the SRIPP, and the increasing attention NASA is devoting to wrestling with longer term solutions, especially related to addressing climate changes impacts in a real and comprehensive fashion. As always, we value our partnership and look forward to continuing to work with NASA on these important issues. Please contact Gwynn Crichton, Senior Project Scientist at 434-951-0571 or [gcrichton@tnc.org](mailto:gcrichton@tnc.org) with any questions or request for additional information.

Most sincerely,



Michael Lipford  
Virginia Director

Cc (via email):

Cindy Schulz, Field Supervisor, Ecological Services, Virginia Field Office, USFWS  
Lou Hinds, Superintendent, Chincoteague National Wildlife Refuge, USFWS  
Trish Kicklighter, Superintendent, Assateague Island National Seashore, NPS  
Laura McKay, Director, Virginia Coastal Zone Management Program, DEQ  
Karen McGlathery, Director, Virginia Coast Reserve Long-Term Ecological Research, UVA  
Tom Smith, Director, Division of Natural Heritage, DCR  
Tony Watkinson, Chief, Habitat Management Division, VMRC  
David Whitehurst, Director, Wildlife Resources, DGIF

**Document 010**  
**U.S. Navy Fleet Forces Command**  
**May 14, 2013**

Tuesday, May 14, 2013 1:43:16 PM ET

**Subject:** WFF shoreline EA  
**Date:** Tuesday, May 14, 2013 1:40:04 PM ET  
**From:** Kerr, Patricia k CIV USFF, N46  
**To:** Bundick, Joshua A. (WFF-2500)  
**CC:** Silbert, Shari A. (WFF-200.C)[EG&G, Inc. (WICC)]

Josh, we have reviewed the WFF Shoreline Repair EA and have no comments to provide you at this time. We applaud your effort of a 104 page document! Thanks for including us in the review and we look forward to our continued partnership. v/r, Patsy

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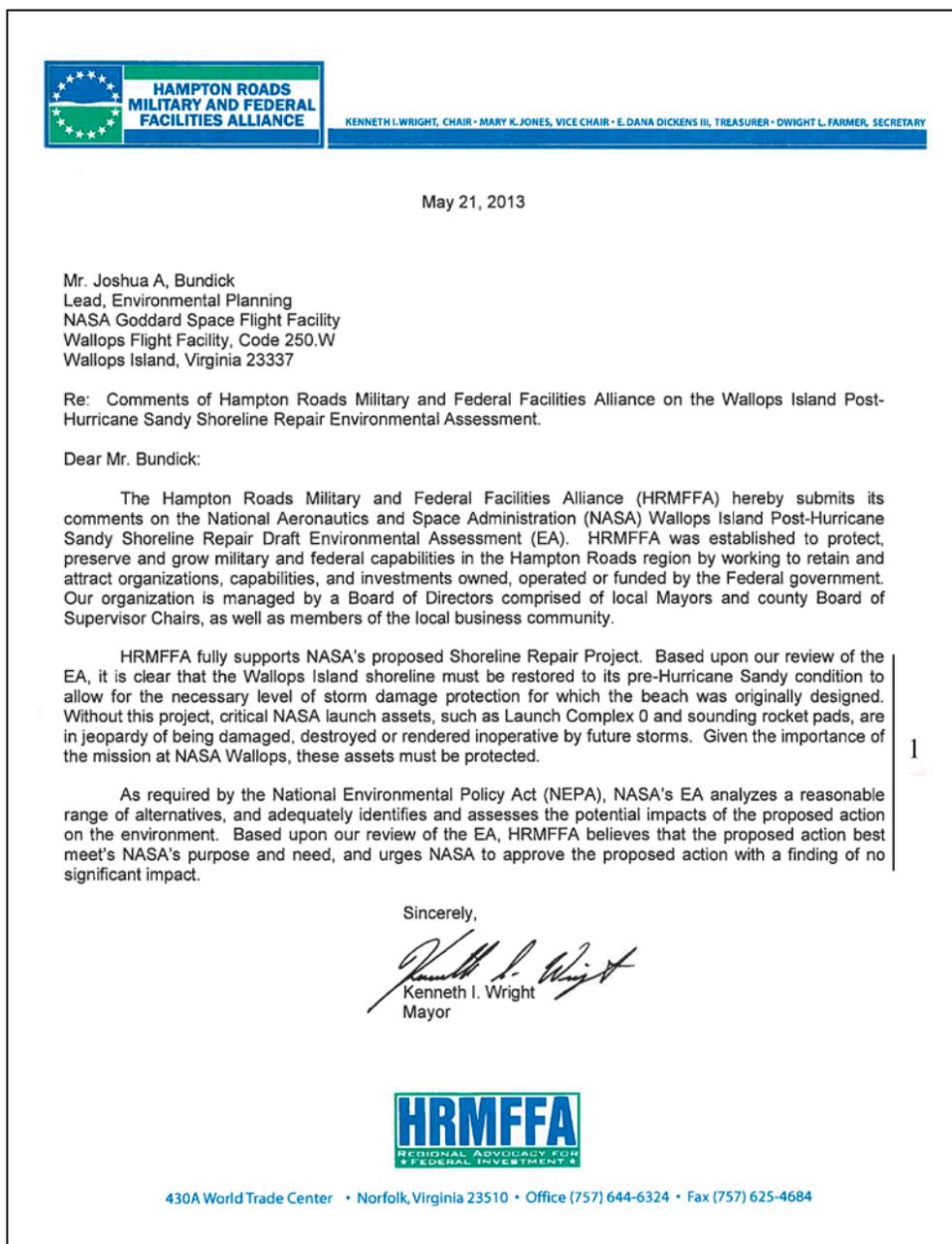
Patsy Kerr  
U.S. Fleet Forces Command  
Natural Resources Support/Encroachment  
Homebasing/Homeporting  
757-836-6336  
Fax 757-836-7439

Page 1 of 1

**Response to Comment 1:** NASA notes that the Fleet Forces Command does not have comments to provide on the Draft EA.

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**Document 011**  
**Hampton Roads Military and Federal Facilities Alliance**  
**May 21, 2013**



**Response to Comment 1:** NASA notes HRMFFA's support of the proposed project.

