National Aeronautics and
Space Administration

Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337

Reply to Attn of: 250.W

February 12, 2010

Ms. Ellie Irons
Office of Environmental Impact Review
Virginia Department of Environmental Quality
629 East Main Street, Sixth Floor
Richmond, Virginia 23219

Dear Ms. Irons:

In accordance with the National Environmental Policy Act of 1969 (NEPA), as amended, and Section 307 (c) (1) of the Coastal Zone Management Act of 1972, the National Aeronautics and Space Administration (NASA) has prepared a Draft Programmatic Environmental Impact Statement (DPEIS) and Federal Consistency Determination (FCD) for the proposed Shoreline Restoration and Infrastructure Protection Program (SRIPP) at its Goddard Space Flight Center's Wallops Flight Facility (WFF) on Wallops Island, Virginia.

As the project sponsor, NASA is serving as the lead agency for both NEPA and Federal Consistency coordination with the Virginia Department of Environmental Quality. The U.S. Department of the Interior, Minerals Management Service (MMS) and the U.S. Army Corps of Engineers (USACE) would undertake actions connected to the SRIPP and are participating in NASA's NEPA process and Consistency coordination. The effects of their actions are considered in all project-related environmental documentation, including the enclosed DPEIS and FCD (Appendix G of the DPEIS). As such, please include all three action agencies in future correspondence regarding the SRIPP.

In cooperation with MMS and USACE, NASA has found that the proposed SRIPP would be consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Resources Management Program. NASA respectfully requests that you review the enclosed DPEIS and FCD and provide comments within 60 days of receiving this letter. Four (4) hard copies and fourteen (14) compact discs are enclosed to facilitate the consolidated state agency review process.

If you have any questions or require any additional information please contact me at (757) 824-2319, or Ms. Shari Silbert at (757) 824-2327.

Sincerely,

Joshua A. Bundick
WFF NEPA Program Manager

Enclosure

cc:
MMS/Mr. D. Herkhof
USACE /Mr. R. Cole

FEDERAL CONSISTENCY DETERMINATION FOR THE SHORELINE RESTORATION AND INFRASTRUCTURE PROTECTION PROGRAM

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GODDARD SPACE FLIGHT CENTER
WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VA 23337

Introduction

This document provides the Commonwealth of Virginia with the National Aeronautics and Space Administration's (NASA) Consistency Determination under Coastal Zone Management Act Section 307(c)(1) and Title 15 Code of Federal Regulations (CFR) Part 930, Subpart C, for implementation of the Shoreline Restoration and Infrastructure Protection Program (SRIPP) at NASA's Goddard Space Flight Center Wallops Flight Facility (WFF), Wallops Island, Virginia. The information in this Consistency Determination is provided pursuant to 15 CFR Section 930.39.

NASA has prepared a Programmatic Environmental Impact Statement (PEIS) to evaluate the potential environmental impacts from the proposed SRIPP 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).

The U.S. Department of the Interior Minerals Management Service (MMS) and the U.S. Army Corps of Engineers (USACE), Norfolk District, have served as Cooperating Agencies in preparing the PEIS and this Consistency Determination, because they possess regulatory authority and specialized expertise pertaining to the Proposed Action. The PEIS is being developed to fulfill all three Federal agencies' obligations under NEPA. 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.

The SRIPP encompasses a 50-year planning horizon and is intended to reduce storm-induced physical damage to Federal and State infrastructure on Wallops Island. The Preferred Alternative would involve extending Wallops Island's existing rock seawall a maximum of 1,400 meters (m) (4,600 feet [ft]) south of its southernmost point and placing sand dredged from Federal waters on Wallops Island along 6.0 kilometers (3.7 miles) of the shoreline. An initial sand placement of approximately 2.4 million cubic meters (m^3) (3.2 million cubic yards [yd^3]) of would occur, followed by periodic renourishments anticipated to occur every 5 years, with a total of 9 renourishment cycles over the 50-year life of the SRIPP. Each renourishment event would involve placement of approximately 616,000 m^3 (806,000 yd^3) of sand on the shoreline. The topography and bathymetry of the beach would be monitored on a regular basis to determine sand movement patterns and plan when renourishment is needed. The initial fill plus the total

fill volume over 9 renourishment events would result in approximately 8 million m^3 (10.5 million yd^3) of sand being placed on the shoreline.

The SRIPP would help reduce the risk to infrastructure on Wallops Island from storm-induced damages by restoring the beach profile in front of the present shoreline.

Effects to Resources

NASA has determined that the SRIPP would affect the land or water uses or natural resources of Virginia in the following manner:

Geology and Sediment – Beneficial long-term impacts on land use and the Wallops Island and northern Assawoman Island shorelines would occur due to creation of a beach. North Wallops Island sand removal would result in minor adverse impacts on sediments and topography. Placement of beach fill (initial and renourishment) would create and maintain a beach approximately 21 meters (70 feet) wide on Wallops Island, resulting in long-term direct beneficial impacts. The addition of sediment to the longshore transport system would offset some ongoing erosion that is occurring at the northern end of Assawoman Island. The northern end of Wallops Island would continue to accrete, and would likely accrete at a faster rate than under existing conditions due to the presence of additional sand in the longshore sediment transport system from the beach fill. The newly created beach profile would extend underwater for a maximum of 52 meters (170 feet), resulting in a new bathymetric profile within the subaqueous lands immediately east of Wallops Island.

To minimize impacts on sediments, beach nourishment would be done using a comparable sediment type (a similar percentage of sand, silt and clay), grain size and color as the existing beach material. The removal of sediments from north Wallops Island would be mitigated by the re-deposition of sediment that would come from the addition of new sand on the beach. A monitoring survey of the shoreline in the vicinity of Wallops Island would be conducted twice a year, with LiDAR (Light Acquisition, Detection, and Ranging) data obtained for the area approximately once a year. NASA would implement an adaptive management strategy to ensure that mitigation and monitoring are effective and appropriate.

Water Resources –Elevated turbidity in the nearshore marine water environment off Wallops Island would occur during and immediately after initial and renourishment beach fill. No impacts would occur on surface waters or wetlands.

Floodplains – Wallops Island is located entirely within the floodplain; therefore, all SRIPP activities on land would take place within the 100-year and 500-year floodplains. No practicable alternatives to work in the floodplain exist. The functionality of the floodplain on Wallops Island, provided both by the wetlands on the island and the area of the island itself, would not be reduced by the SRIPP.

Air Quality – Emissions from construction equipment (seawall extension, movement of sand on beach during placement, excavation of sediments on north Wallops Island beach) and barge activities (dredging and transport) are not anticipated to cause long-term adverse impacts on air quality or climate change.

Noise – Construction and transportation activities have the potential to generate temporary increases in noise levels from heavy equipment operations. Localized impacts would occur during construction of the seawall and sand placement activities, but no adverse impacts are anticipated. Temporary, localized impacts on marine mammals associated with noise related to vessel activities (dredging) and construction of the groin or breakwater.

Hazardous Materials and Hazardous Waste Management – Beneficial impacts would occur by restoring the Wallops Island shoreline and increasing the distance between breaking waves and hazardous materials storage areas and accumulation points. NASA has implemented various controls to prevent or minimize the effects of an accident involving hazardous materials on NASA property, including the following:

- Preparation of an Integrated Contingency Plan
- Preparation of emergency plans and procedures designed to minimize the effect an accident has on the environment
- Maintenance of an online database (MSDSPro) of hazardous materials and the associated buildings where they are stored or used, which would be updated to include the new facilities
- Annual training for all users of hazardous materials

Munitions and Explosives of Concern – MEC are not anticipated to be encountered in the area of seawall construction or beach fill. It is anticipated that shoreline erosion would increase to the south of the seawall extension in the first one to two years of the SRIPP; MEC may migrate to the ocean if further beach erosion occurs in this area. The beach fill (starting in year two) would reduce the potential of MEC migration into the ocean. There is a potential that MEC would be encountered during excavation of the north Wallops Island borrow site. To minimize the risk of adverse impacts from UXO in this area, an MEC Avoidance Plan that addresses the potential hazards would be prepared. A visual and magnetic survey of the area to locate MEC would be completed and potential hazards removed prior to excavation.

Vegetation – The addition of sand to the shoreline would result in beneficial impacts on existing vegetation. The presence of a beach is an important buffer for other vegetative zones on Wallops Island. The SRIPP would create beach and dune habitat along approximately 6.0 kilometers (3.7 miles) of shoreline where none currently exists, allowing grasses to repopulate the upper dune areas. Vegetative species associated with dune and swale systems would also benefit from the expanded beach habitat that would be created under the Preferred Alternative. The movement of dump trucks carrying the seawall components would likely disturb some vegetation in the upper beach zone. During renourishment cycles from the northern part of Wallops Island, vegetation is not expected to be disturbed because the equipment would travel along the unvegetated beach to reach the upland borrow site. Overall, it is anticipated that Alternative One would result in beneficial impacts on Wallops Island vegetation.

Benthic Resources –Placement of the initial fill would bury existing intertidal benthic community along an approximate 4,300-meter (14,000-foot) length of the seawall. The

mean tidal range is approximately 1.1 m (3.6 ft); therefore approximately 0.5 hectare (1.2 ac) of hard-bottom, intertidal habitat would be permanently buried. In addition, approximately 91 hectares (225 acres) of the subtidal benthic community along the existing seawall would be buried during the initial fill placement. A new beach would be formed in front of the seawall and a beach benthic community would become established.

Terrestrial Wildlife and Migratory Birds – Impacts on migratory birds are anticipated during construction of the seawall extension due to temporary noise disturbances, especially during spring and fall migrations; however, noise disturbances would be similar to existing noise from daily operations, including airplane and launch operations on Wallops Island. Temporary minor adverse impacts on beach invertebrates on existing portions of the beach like ghost crabs may occur during sand placement. Terrestrial species found inland may become startled by construction-related noises, but this would be temporary and would only last the duration of the construction.

Threatened and Endangered Species – The SRIPP may affect, but is not likely to adversely affect vegetation, whales, sea turtles (except for loggerhead), and the candidate Red Knot. The SRIPP may affect, and is likely to adversely affect the loggerhead and Kemp's ridley sea turtles, and may affect, but is not likely to adversely affect the leatherback or Atlantic green sea turtles. The SRIPP is likely to adversely affect the Piping Plover. No adverse affect to other bird species. A qualified biologist would conduct surveys and monitor the project area to ensure Red Knots and Piping Plovers are not directly affected during construction activities. Turtle deflectors would be installed on the drag heads during dredging to reduce the risk of entrainment. In addition, NASA would implement a number of other measures to minimize impacts of incidental take of sea turtles. A NMFS-approved observer would be present on board the dredging vessel for any dredging occurring between April 1 and November 30.

Marine Mammals, Fisheries, Essential Fish Habitat – NASA has determined that the proposed SRIPP would have site-specific adverse effects on Essential Fish Habitat, but the impacts would not be significant within a regional context. There would be short-term site-specific adverse effects on fish habitat within the fill placement area 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. Temporary, localized potential impacts associated with physical disturbance to habitats during dredging and fill, vessel strike, and increased noise from vessel activities (dredging). Although placement of sand on the Wallops Island shoreline might disrupt foraging habitat, no adverse impacts are anticipated to marine mammals. Because vessel activity in the project area is common, noise impacts are not expected to be significant. As suggested by NMFS in a memorandum dated June 18, 2009, the potential of marine mammal strikes would be mitigated by operating the dredge vessel at speeds below 14 knots.

Socioeconomics – Beneficial impacts on the socioeconomic environment would occur from reducing damages to infrastructure and from job creation. Minor adverse effects on commercial and recreational fisheries. Disproportionately high or adverse impacts to low-income or minority populations are not anticipated.

Commercial and Recreational Fishing - There could be temporary impacts on commercial and recreational fishing resources during the placement of beach fill material on Wallops Island due to elevated turbidity levels in the nearshore environment and disruption of the benthos, which would cause fish to avoid the disturbed areas. No impacts to commercial and recreational fishing are anticipated from construction of the seawall or use of the north Wallops Island borrow site for renourishment.

Cultural Resources – No archaeological (below ground or underwater) resources or above-ground historic properties are present within the project area; therefore no archeological resources or above-ground historic properties would be affected. In a letter dated January 5, 2009, VDHR concurred with NASA's determination "that there are no historic properties location within the project area and that no further work is needed within the area studied," and that the SRIPP "will not adversely affect any historic properties." In the event that previously unrecorded historic properties are discovered during project activities, NASA would stop work in the area and contact VDHR immediately.

Transportation – Minor construction traffic is anticipated to be associated with the SRIPP on Wallops Island and also on the ocean between the proposed offshore shoals and the pump-out station located 3 kilometers (1.9 miles) off of Wallops Island. Employees would drive to the docked dredging barges to load them with any needed equipment. However, this amount of traffic would not be a significant increase from the usual daily landside traffic on Wallops Island.

Cumulative Impacts – The area for the cumulative effects analysis covered the nearshore areas from approximately Ocean City, MD to Sandbridge, VA. The only resources that have been identified as having the potential to be adversely impacted by the cumulative effects of the SRIPP in combination with other local projects and activities are the geomorphic integrity of the offshore sand shoal environment, the loggerhead sea turtle, and the Piping Plover. Beneficial cumulative impacts are anticipated on socio-economics. No cumulative impacts are anticipated on other resources.

Consistency Determination

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

- **Fisheries Management**. Administered by VMRC, this program stresses the conservation and enhancement of shellfish and finfish resources and the promotion of commercial and recreational fisheries.
- **Subaqueous Lands Management.** Administered by VMRC, this program establishes conditions for granting permits to use State-owned bottomlands.
- **Wetlands Management.** Administered by VMRC and VDEQ, the wetlands management program preserves and protects tidal wetlands.
- **Dunes Management.** Administered by VMRC, the purpose of this program is to prevent the destruction and/or alteration of primary dunes.

- **Non-point Source Pollution Control.** Administered by the Virginia Department of Conservation and Recreation, the Virginia Erosion and Sediment Control Law is intended to minimize non-point source pollution entering Virginia's waterways.
- **Point Source Pollution Control.** Administered by the State Water Control Board, the National Pollutant Discharge Elimination System permit program regulates point source discharges to Virginia's waterways.
- **Shoreline Sanitation.** Administered by the Department of Health, this program regulates the installation of septic tanks to protect public health and the environment.
- **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 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 proposed SRIPP activities are consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Resources Management Program. The 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 area 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. Minor impacts on commercial or recreational fishing are anticipated. The proposed action would not violate the provisions outlined in Code of Virginia § 28.2-200 through 28.2-713 and Code of Virginia § 29.1-100 through 29.1-570.
Subaqueous Lands Management	Yes	The creation of a beach along Wallops Island would affect existing subaqueous areas in the nearshore ocean environment. Elevated turbidity in marine waters would occur during and immediately after beach fill. The newly created beach profile would extend approximately 21 meters (70 feet) above water from the existing shoreline and continue for a maximum of 52 meters (170 feet) underwater, resulting in a new bathymetric profile in the

Virginia Policy	Consistent?	Analysis
		subaqueous lands immediately east of Wallops Island. Any necessary VMRC permits required for work involving maintenance, repair, or emergency actions in subaqueous bottom land would be obtained by NASA prior to implementation of the SRIPP.
Wetlands Management	Yes	Project activities would not impact wetlands.
Dunes Management	Yes	Project activities would involve the creation of a beach and dunes along 6 kilometers (3 miles) of the Wallops Island shoreline over the top of the existing seawall. No destruction of existing dunes would occur. Any necessary VMRC permits would be obtained by NASA prior to implementation of the SRIPP.
Non-point Source Pollution Control	Yes	Construction activities could temporarily increase non-point source runoff to the Atlantic Ocean during the duration of the project. NASA would implement appropriate best management practices to minimize the impact. All land-disturbing activities would be conducted on the existing beach (seawall construction and use of north Wallops Island for beach renourishment) and newly created beach.
Point Source 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.
Air Pollution Control	Yes	Use of equipment for construction of the seawall extension, movement of sand placed on the newly created beach, and excavation of sand at the north end of Wallops Island along with barge operations for dredging and transport of sand would result in emissions. NASA would minimize adverse impacts to air quality by implementing best management practices. The project would not violate Federal or Virginia air quality standards.
Coastal Lands Management	Yes	The proposed project would not include land development activities that would impact the Chesapeake Bay or its tributaries.

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 60th day from receipt of this determination. The State's response should be sent to:

Joshua A. Bundick
WFF NEPA Manager
Environmental Office
NASA Wallops Flight Facility
Wallops Island, VA 23337
(757) 824-2319

COMMONWEALTH of VIRGINIA

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April 14, 2010

Mr. Joshua A. Bundick
NEPA Program Manager
Code 250.W
Goddard Space Flight Center, Wallops Flight Facility
National Aeronautics and Space Administration
Wallops Island, Virginia23337

RE: Draft Programmatic Environmental Impact Statement and Federal Consistency Determination for the Shoreline Restoration and Infrastructure Protection Program at Wallops Island, Accomack County, Virginia (DEQ# 10-019F)

Dear Mr. Bundick:

The Commonwealth of Virginia has completed its review of the above-referenced draft Programmatic Environmental Impact Statement (PEIS) which includes a federal consistency determination (FCD). The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of federal environmental documents prepared pursuant to the National Environmental Policy Act and responding to appropriate federal officials on behalf of the Commonwealth. DEQ is also responsible for coordinating state reviews of federal consistency determinations submitted under the Coastal Zone Management Act of 1972, as amended. The following agencies joined in this review:

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

The Department of Agriculture and Consumer Services, the Department of Mines, Minerals and Energy, the Accomack-Northampton Planning District Commission and Accomack County were also invited to comment.

PROJECT DESCRIPTION

The National Aeronautics and Space Administration (NASA) prepared a Draft Programmatic Environmental Impact Statement for the Shoreline Restoration and Infrastructure Protection Program (SRIPP) at Wallops Flight Facility (WFF) on Wallops Island, Virginia. The U.S. Minerals Management Service (MMS) and U.S. Army Corps of Engineers (Corps) are cooperating agencies for the PEIS.

The purpose of the SRIPP is to reduce the potential for damage to, or loss of, existing NASA, U.S. Department of the Navy (Navy), and Mid-Atlantic Regional Spaceport assets on Wallops Island from wave impacts associated with storm events. Four alternatives were evaluated in the draft PEIS.

Alternative One. The preferred alternative involves an initial construction phase with follow-on renourishment cycles. The initial phase would include two distinct elements:

- Extending Wallops Island's existing rock seawall a maximum of 4,600 feet (ft) south of its southernmost point.
- Placing sand dredged from Unnamed Shoal A, located offshore in Federal waters, on the Wallops Island shoreline. An estimated 3,199,000 cubic yards (yd^3) of fill would be placed along the shoreline starting at camera stand Z-100, which is located approximately 1,500 ft north of the Wallops Island-Assawoman Island property boundary and extending north for 3.7 miles.

Each renourishment fill volume is anticipated to be approximately 806,000 yd^3. The renourishment cycles would include placing sand on the Wallops Island shoreline taken from either of three sources: the beach on the northern end of Wallops Island (Wallops Island borrow site), or from one of two sand shoals (Unnamed Shoal A or Unnamed Shoal B) located in Federal waters. The renourishment cycle is anticipated to occur every 5 years, with a total of 9 renourishment cycles over the 50-year lifespan of the SRIPP. The initial fill plus the total fill volume over nine renourishment events would result in approximately 10,453,000 yd^3 of sand being placed on the shoreline.

Alternative Two. Under Alternative Two, the seawall extension would be the same as described under the preferred alternative. In addition, a groin would be constructed at the south end of the Wallops Island shoreline and would involve the placement of rocks in a linear structure perpendicular to the shoreline at approximately 1,460 ft north of the Wallops Island-Assawoman Island border. The structure would be approximately 430 ft long and 50 ft wide. Construction of the groin would result in more sand being retained along the Wallops Island beach, so less fill would be required for both the initial nourishment and renourishment volumes as compared to the preferred alternative.

Alternative Three. Under Alternative Three, the seawall extension would be the same as described under the preferred alternative. In addition, a single nearshore breakwater would be constructed at the south end of the Wallops Island shoreline and would involve the placement of rocks in a linear structure parallel to the shoreline. The

breakwater structure would be constructed approximately 750 ft offshore. The breakwater would be approximately 90,300 ft long and 110 ft wide. Construction of the breakwater would result in more sand being retained along the Wallops Island beach, so less fill would be required for both the initial nourishment and renourishment volumes compared to the preferred alternative.

No Action Alternative. This alternative serves as a baseline against which the impacts of the three proposed action alternatives were compared. Under this alternative, the SRIPP would not be conducted on Wallops Island, but maintenance and emergency repairs to existing structures would continue. Buildings and infrastructure on the Island would continue to be at increasing risk from storm damage.

SUMMARY

Several agencies indicate that the relocation of vulnerable infrastructure to the mainland would be the best long-term solution to protect the infrastructure on Wallops Island. Some agencies also agree that irregular and unscheduled emergency protective actions have not been (and would continue not to be) an effective shoreline management strategy. However, since all of the action alternatives propose some type of permanent erosion and storm protection along the Wallops Island shoreline, adverse impacts on coastal resources, including protected species and wildlife and the resources upon which they depend, will occur.

In general, the reviewing agencies agree that Alternative One, the preferred alternative, would have the least impacts of all the action alternatives since it no longer includes the installation of a permeable groin, and provided that sand is not taken from the Wallops Island borrow site for beach replenishment and the proposed seawall extension is limited to the minimum length absolutely necessary for the protection of the facilities. The agencies believe that the construction of a groin would disrupt the southerly longshore transport of sand thereby adversely affecting the islands south of Wallops. In addition, there are several Federal Facilities Restoration Program formerly used defense sites (FUDS) located along or immediately adjacent to the shoreline and/or the Wallops Island borrow site. Therefore, use of sand from the Wallops Island borrow site could adversely affect the FUDS sites, which are currently under investigation by the Corps. Essentially, all potential sources of sand identified in the draft PEIS could contain munitions and explosives of concern (MECs).

Although each of the proposed action alternatives will have significant impacts to the environment, each alternative includes multiple mitigation measures to minimize these impacts. Monitoring project activities will be essential to validate project performance assumptions and to adapt the management strategies as needed over the life of the project. Reviewers also indicated that there are information gaps and deficiencies in the draft PEIS, which should be remedied in the final PEIS.

GENERAL COMMENTS BY AGENCY

Virginia Institute of Marine Science (VIMS).

The Virginia Institute of Marine Science has been involved with the proposed project since 2008 as one of many stakeholders. VIMS provided the following comments on the draft PEIS:

- The main findings of the draft PEIS are well supported with various models, current scientific reference data and professional expert advice. The future effects of sea level rise were accounted for within the 50-year project life. Also, proposed offshore sand mining was thoroughly evaluated and appears to be consistent with the current scientific understanding of potential impacts. Several mitigation measures are included to minimize adverse environmental effects during the dredging and transport process. However, regardless of which alternative is selected, the proposed activities will have reasonably foreseeable effects on coastal resources.

- If relocation of vulnerable infrastructure to the mainland is not a viable option, then some type of permanent erosion and storm protection is necessary for the protection of infrastructure at this facility. Irregular and unscheduled emergency protective actions would not be effective.

- Given that some type of action is necessary, VIMS generally agrees that the three shoreline restoration alternatives are appropriate and consistent with current guidelines for projects on ocean coasts, even though the proposed project will have significant impacts to the environment. However, each proposed alternative includes multiple mitigation measures to minimize these impacts.

- Monitoring programs will be essential to validate project performance assumptions and to adapt the management strategies as needed over the life of the project. Beach profiles and biological surveys at the Wallops Island borrow area will be particularly important to support using this sand source.

For more information on these comments, contact Karen Duhring of VIMS at (804) 684-7159 or karend@vims.edu.

Department of Game and Inland Fisheries (DGIF).

In general, the management of Virginia's barrier island chain is minimal and typically allows nature to take its course. This management scheme has proven, over time, to benefit the fish and wildlife that inhabit the islands. However, shoreline stabilization efforts at Wallops Island have been ongoing since the 1940's; but these efforts have not abated the shoreline retreat of the island. DGIF believes that, even with intervention, the Wallops Island shoreline is likely to continue to retreat landward and any attempts to delay or alter the shoreline retreat may be futile over the long term. Oertel *et al.* (2008) refers to the area between the southern end of Assateague Island to the northern tip of

Parramore Island as the Chincoteague Bight and proposes that the extremely rapid retreat of the barrier islands within this area is due to natural processes driven by topographic features that existed during previous ice ages. Moreover, the "Storm Damage Reduction Project Design" study (Appendix A) suggests that the growing cape of Fishing Point, located at the southern end of Assateague Island, is capturing sand that would otherwise be available to the neighboring islands to the south. This sand capture is a further indication that Wallops Island will continue to retreat, thereby necessitating continual and costly efforts to slow the natural movement of the island over the long term.

Therefore, DGIF does not fully support any of the alternatives presented in the draft PEIS. Aggressive shoreline management coupled with the scope and location of the proposed shoreline stabilization activities directly counters the minimal management typical of Virginia's barrier island shoreline. DGIF believes that all of the alternatives are likely to result in adverse impacts upon wildlife and/or the resources upon which they depend (see DGIF's attached letter for more information). However, DGIF agrees with the selection of Alternative One as the Preferred Alternative, since it no longer includes the installation of a permeable groin. The groin would reduce the southerly longshore transport of sand thereby adversely affecting the islands south of Wallops.

DGIF's concerns about the proposed activities are outlined below:

- *Alternative One.* DGIF is concerned that the extension and increase in height of the existing seawall will prevent natural island overwash processes from occurring over a large area of the island. The draft PEIS (page 195) states that the seawall extension would likely result in a greater loss of surface area on the landward side of the seawall and enhance island narrowing as sea level rises. Over the long term (i.e., beyond the 50-year life span of the project), a reduction in land mass may seriously affect the island's natural function as the first line of protection against storm surge and other weather-related events for the marshes and mainland that lie west of the island. Moreover, it will reduce the island's value to beach and marsh-dependent wildlife through the loss of beach seaward of the seawall if renourishment efforts are not able to keep up with erosion rates, and the loss of marshes behind the island should significant island narrowing occur. Lastly, the results from the models presented in Appendix A of the draft PEIS suggest that the seawall extension will have less of an impact on Assawoman Island's shoreline over the long term than the current changes in shoreline incurred by yearly variation in wave climate and storms.

  Alternative One also proposes that a portion of the renourishment fill volumes would be excavated from the Wallops Island borrow site on the northern side of the island. DGIF is strongly opposed to using the northern end of Wallops Island as a borrow site for beach fill during renourishment cycles due to the presence of the federally-listed threatened Piping Plover.

  In addition, the draft PEIS (page 48) states that the sand at the Wallops Island borrow area is not an optimal grain size for use as beach fill, but that it offers

potential renourishment material without the mobilization and operational costs associated with offshore dredging. DGIF states that the sacrifice of important and unique wildlife habitat along the only section of undeveloped beach on Wallops Island to acquire fill material at the lowest cost possible is not appropriate. Moreover, the use of sand which is not the optimal grain size is in opposition to the mitigation criteria developed by NASA for sand placement activities (page 300). The criteria states that beach nourishment will be accomplished so that the beach is restored to a comparable sediment type (a similar percentage of sand, silt and clay), grain size and color as the existing beach material.

- *Alternative Two.* DGIF is concerned about the adverse effects of Alternative Two on islands located south of Wallops Island. Alternative Two includes the placement of a groin at the southern end of Wallops Island, which could reduce the transport of sand to the areas south of Wallops Island. Although DGIF understands NASA's need to protect its assets, DGIF does not support any action that could adversely affect other barrier islands, which provide important habitat for shorebirds, sea turtle nesting areas and other wildlife.

- *Alternative Three.* This alternative includes the construction of a nearshore breakwater structure parallel to the south end of the Wallops Island shoreline. DGIF is concerned that the reduction in beach erosion resulting from wave attenuation performed by the breakwaters will be negated by the newly constructed seawall extension and that this structure may also result in shoreline erosion to its south.

In addition, DGIF has the following concerns:

- *Benthic communities.* The draft PEIS acknowledges that repeated dredging activities at intervals of three years or less, may not allow sufficient time for benthic communities to recover between dredging cycles. Studies examining the effects of sand mining on infaunal communities found that levels of abundance and diversity may recover within 1 to 3 years, but recovery of species composition may take longer (Byrnes *et al.* 2004).

- *Offshore Dredging Activities.* DGIF is concerned that the proposed project could impact sea turtles and other mammals.

- *Beach Profile Monitoring Program.* DGIF states that the beach profile monitoring program is too limited in its geographic scope and should be broadened to include islands south of Assawoman Island. Currently, NASA proposes that these efforts are to be confined to Wallops and Assawoman islands.

For more information on these comments, contact Amy Ewing at (804) 367-2211 or amy.ewing@dgif.virginia.gov.

Department of Conservation and Recreation (DCR).

- The Department of Conservation and Recreation continues to be concerned about the effects of the shoreline hardening on the islands downdrift of the project area, which includes properties owned by The Nature Conservancy and DCR.

For more information on these comments, contact Rene Hypes at (804) 371-2708 or rene.hypes@dcr.virginia.gov.

GENERAL RECOMMENDATIONS. DGIF recommends that NASA consider the following general recommendations:

- Develop a contingency plan detailing the steps to be taken if the proposed project is not undertaken. The contingency plan should be provided to all natural resource agencies for review so that agencies will have a better understanding of the long-term environmental impacts of the proposed project.

- Conduct beach profile monitoring on Metompkin and Cedar islands at a frequency that allows for an accurate assessment to be made regarding project impacts further south along the barrier island chain. Given that shoreline behavior on Wallops, Metompkin and Cedar islands is driven by the similar geologic processes (Oertel *et al.* 2008) and therefore may behave more as a unit than as independent landmasses, DGIF believes this is a necessary component of the beach profile monitoring program.

- Discuss in the final PEIS the assertion that any negative impacts from the seawall would be mitigated following beach fill placement. This statement implies that without renourishment, negative impacts are possible. The discussion should include the possible adverse impacts resulting from any of the proposed activities and how such impacts may be mitigated.

- Conduct a cost/benefit analysis which includes a threshold at which NASA considers the environmental costs of the project to outweigh the benefits to its mission and goals (for more information, see DGIF's attached letter) due to the potential impacts this project may have on wildlife resources beyond the project area. The cost/benefit analysis should not only examine monetary costs, but also take into account costs to fish and wildlife resources, the physical integrity of the barrier island chain, and other stakeholder interests. DGIF's letter also requested that the PEIS include a discussion on the availability of funding for continuous beach renourishment since it is being presented as a key element to the project's success. DGIF does not believe that either request was adequately addressed, making it far more difficult to assess the project's risk to the broader environment over the life time of the project.

- Perform studies prior to dredging to determine how the unnamed shoals are used by sea ducks. This data should then be used to analyze potential impacts that

the removal of the shoal material will have on these species. Based on the results of the studies, a plan to mitigate any impacts upon sea ducks should be developed.

- Coordinate with the National Marine Fisheries Service (NMFS) regarding the protection of sea turtles and sea mammals during offshore dredging operations.
- Conduct a minimum of three aerial offshore transect surveys before beginning dredging activities over the course of at least one winter season (one in mid-December, one in mid-January, and one in mid-February) along the entire barrier island chain and out to 15 nautical miles. This would establish the relative use of the two unnamed shoals by sea ducks, which would assist DGIF in assessing the impact of dredging activities on these avian species.
- Provide a more detailed explanation of the types of wildlife habitats at the northern end of the island that would be avoided during excavation activities.
- Consider conducting an analysis of the actual recovery time and the sustainability of beaches at the northern end of Wallops Island.

In addition, VIMS recommends that NASA provide a better explanation as to why multiple containment structures with less frequent and intensive beach nourishment cycles are not acceptable and why alternatives with only one structure at the southern end are acceptable.

ENVIRONMENTAL IMPACTS AND MITIGATION

1. Water Quality and Wetlands. The draft PEIS (page 220) states that the proposed construction activities would not impact wetlands.

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 (VPA) permit, Surface and Groundwater Withdrawal Permit, and the Virginia Water Protection (VWP) permit. The VWP permit is a State permit which governs wetlands, surface water, and surface water withdrawals/impoundments. It also serves as § 401 certification of the federal Clean Water Act § 404 permits for dredge and fill activities in waters of the U.S. The VWP Permit Program is under the Office of Wetlands and Water Protection/Compliance, within the DEQ Division of Water Quality Programs. In addition to central office staff who review and issue VWP permits for transportation and water withdrawal projects, the six DEQ regional offices perform permit application reviews and issue permits for the covered activities.

1(b) Findings. DEQ's Tidewater Regional Office (TRO) states that the proposed project will require a VWP permit from DEQ.

1(c) Recommendation. DEQ recommends that all efforts should be taken to ensure that surface waters, including wetlands, are not adversely affected by the proposed

activities. In general, NASA must comply with Section 404(b)(1) guidelines of the Clean Water Act and with the Commonwealth's wetland mitigation policies, if applicable. Both Federal and State guidelines recommend avoidance and minimization of wetland impacts as the first steps in the mitigation process. Any unavoidable impacts to State waters may require compensation such as wetland creation, restoration or other acceptable forms of wetland compensatory mitigation.

In general, DEQ recommends that impacts to surface waters, including wetlands, be avoided to the maximum extent practicable and encourages the following practices to minimize impacts:

- operate machinery and construction vehicles outside of wetlands and streams as no machinery may enter surface waters, unless authorized by a VWP permit;
- any temporary impacts to surface waters associated with this project shall require restoration to pre-existing conditions;
- erosion and sedimentation controls shall be designed in accordance with the Virginia Erosion and Sediment Control Handbook, Third Edition, 1992. These controls shall be placed prior to clearing and grading and maintained in good working order to minimize impacts to state waters. These controls shall remain in place until the area is stabilized and shall then be removed. All denuded areas shall be properly stabilized in accordance with the Virginia Erosion and Sediment Control Handbook, Third Edition, 1992;
- heavy equipment in temporarily impacted surface waters shall be placed on mats, geotextile fabric or other suitable material, to minimize soil disturbance to the maximum extent practicable. Equipment and materials shall be removed immediately upon completion of work;
- all construction, construction access, and demolition activities associated with this project shall be accomplished in a manner that minimizes construction materials or waste materials from entering surface waters, unless authorized by a permit; and
- herbicides used in or around any surface water shall be approved for aquatic use by the United States Environmental Protection Agency (EPA) or the U.S. Fish and Wildlife Service (FWS). These herbicides should be applied according to the label directions by a licensed herbicide applicator. A non-petroleum based surfactant shall be used in or around any surface waters.

For more information on VWP permitting, contact DEQ's Tidewater Regional Office.

1(d) Requirements. NASA should submit a Joint Permit Application (JPA) to the Virginia Marine Resources Commission (VMRC) for distribution and review by the permitting agencies.

1(e) Conclusions. Provided that all applicable VWP permits are obtained and complied with, the project will be consistent with the wetlands management and point source pollution control enforceable policies of the Virginia Coastal Zone Management

Program (VCP) (previously called the Virginia Coastal Resources Management Program).

2. Subaqueous Lands Management. The draft PEIS (page 219) states that the purpose of the proposed project is to create a new bathymetric profile along the east coast of Wallops Island. The new profile would be created by the placement of sand, which would extend approximately 70 feet above water from the existing shoreline and continue for a maximum of 170 feet underwater. Permits from the VMRC would be obtained to ensure compliance with the VCP.

2(a) Agency Jurisdiction. The Virginia Marine Resource Commission, pursuant to Virginia Code *§ 28.2-1200* through *1400*, regulates encroachments in, on or over state-owned subaqueous beds as well as tidal wetlands throughout the Commonwealth. Also, the VMRC serves as the clearinghouse for the Joint Permit Application used by the:

- U.S. Army Corps of Engineers 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;
- VMRC for encroachments on or over state-owned subaqueous beds as well as tidal wetlands; and
- local wetlands board for impacts to wetlands.

2(b) Comments. Pursuant to Section 28.2-1200 *et seq.* of the Code of Virginia, the VMRC has jurisdiction over any encroachments in, on, or over the beds of the bays, ocean, rivers, streams, or creeks which are the property of the Commonwealth. Also, VMRC supports Alternative One, as this alternative would have less impact to the existing longshore transport of sand to Assawoman Island in the event that funding for the proposed 5-year beach nourishment cycles cannot be secured.

2(c) Findings. The VMRC states that it appears that the project would require authorization from the VMRC. However, any dredging that occurs more than 3 miles offshore will not require authorization from the VMRC.

2(d) Conclusion. Provided that all VMRC regulations are complied with, the project will be consistent with the subaqueous lands management enforceable policy of the VCP.

3. Dunes Management. The draft PEIS (page 220) states that the proposed project activities are designed to create approximately 3 miles of beach and dunes along the Wallops Island shoreline. Permits from the VMRC would be obtained to ensure compliance with the VCP.

3(a) Agency Jurisdiction. The Virginia Marine Resources Commission issues permits for encroachments to coastal primary sand dunes. VMRC's authority and responsibilities emanate from Subtitle III of Title 28.2 of the Code of Virginia and specifically regulates physical encroachment into this valuable resource area. In accordance with the commonwealth's Coastal Primary Sand Dune/Reaches Guidelines:

Barrier Island Policy (4 VAC 20-440-10 B. 1), no construction or any other activity which has the potential for encroaching on or otherwise damaging coastal primary sand dunes or state-owned beaches shall occur without review and approval by VMRC or a local wetland board, or both. For any development that involves encroachments on primary sand dunes, a JPA must be submitted to VMRC for review and approval.

3(b) Comments. Since Accomack County has not yet adopted the model Coastal Primary Sand Dune Zoning Ordinance, the Commission is charged with reviewing the impacts associated with any project that may fall within the Coastal Primary Sand Dunes/Beaches of Accomack County.

VIMS states that while it recognizes the attractiveness of using a local, upland sand source for beach replenishment, it is VIMS' opinion that mining sand from the Wallops Island borrow site could adversely impact beach and dune processes in this natural area. However, VIMS' concerns have been somewhat alleviated by the following:

- the sand from the Wallops Island borrow site would not be used for the initial beach fill;
- any material excavated from the borrow site would likely originate from the initial beach fill due to the predicted sand transport pattern;
- no temporary construction access roads or other improvements will be needed to transfer the material;
- sand from the northern end of the Island would only be use as source material for a portion of renourishment events; and
- sand from the northern end of the Island would only be use if threatened and endangered species will not be adversely impacted.

VIMS defers to the DGIF and FWS to further assess the potential plant and wildlife impacts associated with mining sand from the northern end of Wallops Island.

3(c) Conclusion. Provided that NASA obtains all applicable approvals from the VMRC, the project will be consistent with the dunes management enforceable policy of the VCP.

4. Fisheries Management. The draft PEIS (page 219) states that NASA does not anticipate that the proposed project will impact commercial or recreational fisheries. There would be short-term, adverse effects on fish habitat within the fill placement area due to the temporary burial of existing benthic habitat and increased turbidity levels during and immediately after sand placement.

4(a) Jurisdiction. The Department of Game and Inland Fisheries (DGIF) and the Virginia Marine Resources Commission administer the fisheries management enforceable policy of the VCP.

4(b) Comments. According to DGIF, the project is located within a marine environment. Therefore, DGIF defers to the VMRC regarding the project's consistency

with the fisheries management enforceable policy of the VCP. The VMRC Fisheries Management Division has no comment on the proposed project.

4(c) Conclusion. Provided that NASA obtains all applicable approvals from the VMRC, the project will be consistent with the fisheries management enforceable policy of the VCP.

5. Nonpoint Source Pollution Control. The draft PEIS (page 220) states that construction activities will temporarily increase non-point source pollution. However, NASA would implement best management practices (BMPs) to minimize impacts.

5(a) Agency Jurisdiction. The Department of Conservation and Recreation's (DCR) Division of Soil and Water Conservation (DSWC) administers the Virginia Erosion and Sediment Control Law and Regulations (VESCL&R), Virginia Stormwater Management Law and Regulations (VSWML&R).

5(b) Erosion & Sediment Control and Stormwater Management Project-Specific Plans. According to the Department of Conservation and Recreation's, Division of Soil and Water Conservation, NASA and their authorized agents conducting regulated land disturbing activities on private and public lands in the state must comply with the Virginia Erosion and Sediment Control Law and Regulations (VESCL&R), Virginia Stormwater Management Law and Regulations including coverage under the general permit for stormwater discharge from construction activities, and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act-Section 313, Federal Consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbance activities that result in the land-disturbance of greater than 10,000 square feet would be regulated by VESCL&R. Accordingly, NASA must prepare and implement erosion and sediment control (ESC) plan to ensure compliance with state law and regulations. The ESC plan is submitted to DCR's Suffolk Regional Office 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.

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

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

6. Chesapeake Bay Preservation Areas. According to the draft PEIS (page 220) the proposed project does not include any land development within the Chesapeake Bay or its tributaries. Therefore, the proposed project is consistent with the coastal lands management enforceable policy of the VCP.

6(a) Agency Jurisdiction. The Department of Conservation and Recreation's Division of Chesapeake Bay Local Assistance (DCBLA) administers the coastal lands management enforceable policy of the Virginia Coastal Program which is governed by the Chesapeake Bay Preservation Act (Virginia Code §10.1-2100-10.1-2114) and Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 10-20 *et seq.*).

6(b) Findings. DCR's Division of Chesapeake Bay Local Assistance states that DCBLA recently determined that Wallops Island is in a portion of Accomack County that has not been designated as a Chesapeake Bay Preservation Area (CBPA). When Accomack County amended its ordinance to expand its CBPAs to the ocean side of the County in February 2009, the definition of these areas in the County ordinance references the official zoning map. That map, specifically excludes federal lands on the ocean side of the County, including Wallops Island.

Generally, when a locality does not map CBPAs on federal lands, they are still subject to the requirements of the Bay Act Regulations as they contain lands analogous to Resource Protection Areas and/or Resource Management Areas. However, Wallops Island is located in a part of Accomack County outside the Bay watershed and therefore, Wallops Island is not required to be included as part of a Chesapeake Bay Preservation Area and is not subject to the requirements of the Regulations.

6(c) Conclusion. Since the proposed project is not located within a CBPA, there are no CBPA requirements. Therefore, the project is consistent with the coastal lands management enforceable policy of the VCP.

7. Air Pollution Control. The draft PEIS (page 220) states that construction equipment will result in air emissions, but NASA would implement BMPs to minimize impacts. The project would not violate Federal or state air quality standards.

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

regulating sources of air pollution, and working with local, state and federal agencies to plan and implement strategies to protect Virginia's air quality. The appropriate regional office is directly responsible for the issuance of necessary permits to construct and operate all stationary sources in the region as well as monitoring emissions from these sources for compliance. As a part of this mandate, Environmental Impact Reports of 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.

7(b) Comments. The DEQ Air Division states that the proposed project is located in an ozone attainment area.

7(c) Fugitive Dust Control. During project activities, 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(d) Open Burning. If project activities include the open burning of materials on- or off-site, this activity must meet the requirements under 9 VAC 5-130 *et seq.* of the *Regulations* for open burning and it may require a permit. The *Regulations* provide for, but do not require, the local adoption of a model ordinance concerning open burning. NASA should contact Accomack County officials to determine what local requirements, if any, exist.

7(e) Fuel-Burning Equipment. Fuel-burning equipment may be subject to air permitting requirements. For more information or questions concerning requirements, contact DEQ's Tidewater Regional Office.

7(f) Conclusion. Provided that NASA complies with all applicable air regulations, the proposed project would be consistent with the air pollution control enforceable policy of the VCP.

8. Solid and Hazardous Wastes and Hazardous Materials. The draft PEIS (page 234) states that munitions and explosives of concern (MECs) are not anticipated to be encountered in the dredging of Unnamed Shoal A or B. Also, no MECs are anticipated to be encountered on the Wallops Island shoreline in the area of seawall construction or beach fill. However, it is anticipated that as shoreline erosion to the south of the seawall extension increases, MECs in this area may migrate to the ocean. NASA believes that

the proposed beach fill along the southern portion of the island should reduce potential MEC migration.

8(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 (CERCLA), 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.

8(b) Comments. DEQ's Federal Facilities Restoration (FFR) Program staff states that the proposed project is the latest in many beach replenishment projects that have occurred on Wallops Island. The history of beach replenishment at Wallops Island was provided in the draft PEIS. One potential consequence of relocating sand from borrow areas on Wallops Island or offshore dredge areas became evident during the winter storms of 2009. Wave action during those storms created breaches in the seawall. Within some of the breaches old munitions were found intermixed with seawall boulders and concrete debris (see attached Figures 1 and 2). It is believed that the munitions were transported to these areas during earlier replenishment projects as the locations where the munitions were discovered did not coincide with areas where munitions were used historically. Also, some of the munitions still contained explosive material.

The potential for munitions to be encountered during excavation of sand from other areas of Wallops Island as part of this project is clearly acknowledged within the draft PEIS. However, the draft PEIS does not address the potential for munitions to be encountered during offshore dredging activities at the Unnamed Shoal. Essentially, all potential sources for sand identified in the draft PEIS could contain MECs.

DEQ's Office of Waste Permitting and Compliance in the Tidewater Regional Office states that although the proposed project appears to enhance protection of the hazardous waste open burn/open detonation (OB/OD) Resource Conservation and Recovery Act (RCRA) permitted unit, the draft PEIS does not discuss potential alteration of and/or impacts to the existing groundwater monitoring network and potential changes to groundwater flow.

The DEQ-Waste Division states that the draft PEIS addresses both solid and hazardous waste issues, but does not include a search of waste-related databases.

8(c) Findings. The Waste Division staff reviewed its data files and conducted a search of its Geographic Information System database and determined that two hazardous

sites and one formerly used defense site (FUDS) are located within the same zip code as the proposed project; however their proximities to the subject site are unknown. These sites are as follows.

Hazardous waste

- NASA GSFC Wallops Flight Facility, VA8800010763 LQG (Active), VA7800020888 LQG (Active), VA7800020888 TSD (Active)

FUDS

- C03VA0301, VA9799F1697, Wallops Island

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

8(d) Federal Facilities Program. DEQ's FFR Program staff states that the Preferred Alternative may impact several Federal Facilities Restoration Program FUDS currently under investigation by the Corps. The sites in question are situated in the northern portion of Wallops Island along or immediately adjacent to the shoreline and/or the Wallops Island borrow site. Each site is in the early phases of investigation. To date only archive searches have been conducted which identified historic activities that warrant further investigation. These sites are as follows:

- Gunboat Point. This northern-most site contains a bombing area, strafing target, and explosive ordnance disposal (EOD) area. The bombing area was used by the Naval Aviation Ordnance Test Station (NAOTS) to test live high explosive bombs, aircraft parachute flares, and napalm-filled fire bombs. The strafing target was used to train naval aviators on the use of aircraft .50 caliber machine guns. The EOD area was used to dispose of ammunition and is expected to contain munitions and explosives of concern. Latitude and longitude coordinates for each area are available.

- Machine Gun and Rocket Firing Area. This site, located to the south of Gunboat Point, is an area where NAOTS statically tested aircraft machine guns and cannons at 3 ranges; a 750 yard, a 500 yard, and a 175 yard ground range each of which fired toward the dunes/ocean. Latitude and longitude coordinates are available for the firing points and target areas.

- Grebe Range, Target Center, and Facilities. This southern-most area is where a 20mm gun was used (fired out to sea) to calibrate the radar and fire control components. Kingfisher missiles, Grebe missiles, and 3.25 inch rockets were fired from this site. The Target Center is where the range was instrumented and used to various aspects of aviation ordnance. The Explosive Ammunition Test Facility established a controlled environment where aircraft guns and munitions could be test fired. Targets were located on the shoreline and guns were fired seaward from the test facility. Latitude and longitude coordinates are available for these facilities.

8(e) Recommendations. DEQ has the following recommendations:

- DEQ's FFR Program staff recommends that during removal, all borrow and dredge material should be thoroughly screened for munitions. Explosive ordnance disposal (EOD) personnel should be present at each sand removal point and each removal area should be field located (latitude and longitude) to allow for identification of areas where munitions were encountered. All munitions encountered should be managed in accordance with NASA's established munitions avoidance and disposal procedures. Under no circumstance should munitions be removed from borrow or dredge areas and disposed of in the project area.

- Prior to initiating any project activities on Wallops Island or offshore, DEQ's FFR Program recommends that the SRIPP Project Manager contact NASA's WFF Manager of Environmental Restoration for information concerning any CERCLA obligations and the Corps Remediation Project Manager for Wallops FUDS areas for information concerning CERCLA obligations at or near Wallops FUDS sites.

- All construction and demolition debris, including excess soil, must be characterized in accordance with the Virginia Hazardous Waste Management Regulations prior to disposal at an appropriate facility. Also, DEQ encourages all construction projects to implement pollution prevention principles, including:

    - the reduction, reuse, and recycling of all solid wastes generated; and
    - the minimization and proper handling of generated hazardous wastes.

For further information, contact Paul Kohler, DEQ-Waste Division (telephone, (804) 698-4208).

9. Petroleum Storage Tanks. The draft PEIS (page 233) states that there are no underground storage tanks (USTs) or aboveground storage tanks (ASTs) in the proposed project area. However, in the event of a petroleum release occurs during construction activities, NASA would notify DEQ.

9(a) Petroleum Storage Tank Cleanups. According to the DEQ-TRO, there have been multiple releases reported at the WFF. One of the closed cases (PC #1993-0913) is adjacent to the proposed shoreline restoration. Therefore, if evidence of a petroleum release is discovered during project activities, it must be reported to DEQ, as authorized by Virginia Code §62.1-44.34.8 through 9 and by the Virginia Administrate Code 9 VAC 25-580-10 *et seq.* Also, all petroleum contaminated soils and groundwater generated during construction must be characterized and disposed of properly. For more information, contact DEQ's Tidewater Regional Office.

***9(b)* Petroleum Storage Tank Compliance/Inspections.** The removal, relocation or closure of any regulated petroleum storage tank(s), including ASTs and USTs, must be conducted in accordance with the requirements of Virginia Regulations 9 VAC 25-91-10 *et seq.* and/or 9 VAC 25-580-10 *et seq.* Notification should be made to the DEQ Tidewater Regional Office.

10. Natural Heritage Resources. The draft PEIS does not address natural heritage resources.

10(a) Agency Jurisdiction. 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 (DNH). The Natural Heritage Program's (DCR-DNH) mission is conserving Virginia's biodiversity through inventory, protection, and stewardship. The Virginia Natural Area Preserves Act, 10.1-209 through 217 of the Code of Virginia, was passed in 1989 and codified DCR's powers and duties related to statewide biological inventory: maintaining a statewide database for conservation planning and project review, land protection for the conservation of biodiversity, and the protection and ecological management of natural heritage resources.

10(b) Overall Recommendation. DCR supports Alternative One as the Preferred Alternative, provided that sand is not taken from the Wallops Island borrow site and the proposed seawall extension is limited to the minimum length absolutely necessary for the protection of the facilities. DCR's selection of Alternative One as the best alternative is based on the belief that sand transport to the south of the project area will be less likely to be disrupted without the construction of a groin or breakwater. However, DCR continues to recommend exploring the feasibility of inland relocation of existing facilities.

10(c) Agency Findings. According to the information currently in DCR's files, this site is located within the North Wallops Island and the North Assawoman, South Wallops Island Conservation Site.

The North Wallops 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:

- Piping Plover *Charadrius melodus* G3/S2B, S1N/LT/LT

The North Assawoman; South Wallops Island 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:

- Piping Plover *Charadrius melodus* G3/S2B, S1N/LT/LT
- Least Tern *Sterna antillarum* G4/S2B/NL/SC
- Wilson's Plover *Charadrius wilsonia* G5/S1B/NL/LE

10(d) Additional Information on Natural Heritage Resources. Information concerning natural heritage resources is as follows:

- Conservation Sites. 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.

- Piping Plover. This species inhabits coastal areas, using flat, sandy beaches of barrier islands for breeding (Cross, 1991). Threats to this species include predation of eggs and young and the development and disturbance of barrier island breeding sites (Cross, 1991). The Piping Plover is listed as threatened by the FWS and DGIF.

- Wilson's Plover. This species is a rare, short-term summer visitor along the lower Chesapeake Bay and the Atlantic Coast south of Cape Henry. The summer males have a thick black bill and a white breast with a single band while the females, young, and winter males are grayish brown to reddish brown (Bergstrom, 1991).

  Wilson's Plover habitat consists of the upper portions of sandy beaches on barrier islands, usually within 30 m of dune vegetation. Requirements for nesting include suitable foraging sites nearby for chicks, usually mud or sand flats. Predatory threats include foxes, herring gulls, great black gulls, and fish crows who eat the eggs and young. Nesting habitats are lost to both natural processes such as erosion and coastal development, as well as human disturbance during the nesting season. Since the eggs are a pale tan or buff with irregular black specks, they blend easily into the sand which allows for them to be overlooked by unsuspecting beach visitors who crush them. Recommendations for protecting these birds consist of predator control measures involving protection from predators for nests and discouraging development on the nesting islands. Wilson's Plover is protected under the Migratory Bird Treaty Act (Bergstrom, 1991).

- Least Tern. The Least Tern nests on broad, flat beaches with minimal vegetation and forages in saltwater near the shore. Threats to this species include loss of nesting habitat due to development and disturbance of breeding colonies by human activities and high numbers of predators (Beck, 1991). The Least Tern is listed as a special concern species by the DGIF.

10(e) Threatened and Endangered Plant and Insect Species. The Endangered Plant and Insect Species Act of 1979, Chapter 39, §3.1-102- through 1030 of the Code of Virginia, as amended, authorizes the Virginia Department of Agriculture and Consumer Services (VDACS) to conserve, protect and manage endangered species of plants and insects. VDACS Virginia Endangered Plant and Insect Species Program personnel cooperates with the U.S. Fish and Wildlife Service (FWS), DCR-DNH and other agencies and organizations on the recovery, protection or conservation of listed threatened or endangered species and designated plant and insect species that are rare throughout their worldwide ranges. In those instances where recovery plans,

developed by FWS, are available, adherence to the order and tasks outlined in the plans should be followed to the extent possible.

VDACS has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act. Under a Memorandum of Agreement established between the VDACS and DCR, DCR has the authority to report for VDACS on state-listed plant and insect species. DCR found that the current activity will not affect any documented state-listed plant and insect species.

10(f) Natural Area Preserves. DCR found that there are no State Natural Area Preserves under its jurisdiction in the project vicinity.

10(g) Recommendations. DCR has the following recommendations:

- Coordinate with DGIF and the FWS to ensure compliance with protected species legislation due to the legal status of the Piping and Wilson's Plovers.
- Protect habitat for the Least tern, Wilson's Plover, and Piping Plover during the nesting season from April 15th to August 15th.
- Limit the source for beach nourishment to the sand shoals (Unnamed Shoal A or Unnamed Shoal B) located offshore in Federal waters and not from the Piping Plover habitat at the Wallops Island borrow site.
- Coordinate with DCR's Division of Natural Heritage (telephone, (804) 371-2708) if a significant amount of time passes before the project is implemented, since new and updated information is continually added to Biotics Data System.

11. Wildlife Resources. The draft PEIS (pages 235-263) addresses impacts to state- and federally-listed protected species and other wildlife species known to inhabit the proposed project areas. Protected species that could be adversely affected by the proposed project include the Piping Plover and Kemp's Ridley and Loggerhead sea turtles.

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

11(b) Comments. DGIF is strongly opposed to NASA's using the Wallops Island borrow site for beach fill during renourishment cycles due to the presence of the federally-listed threatened Piping Plover and sea turtle nesting sites.

11(c) Agency Findings. According to DGIF, the following wildlife species have been observed in the proposed project areas:

- Bald Eagle. A state-listed Threatened bald eagle nest has been documented at the northern end of Wallops Island. Eagles have high nest site fidelity and will typically return to the same nest each year to raise young, although eagle pairs also build alternate nest sites within their territory for use.

- Piping Plover. In 2009, four pairs of Piping Plovers nested in the area proposed for sand excavation. Collectively they fledged 10 young, which resulted in the highest reported fledge rate in Virginia last year, clearly indicating that the northern portion of the island provides suitable habitat for the species.

- Wilson's Plover. This plover is a state-listed threatened bird species, which is one of many avian beach nesting species in the project area.

- Red Knots. This species is a candidate for federal listing. In recent years, up to 25% of the Virginia's weekly Red Knot population occurred on Wallops Island during spring migration (Watts and Truitt, unpubl. data).

- Sea Turtles. The Loggerhead Sea Turtle is a federally-listed threatened species. Also, the Northwest Atlantic Loggerhead population, whose range includes Virginia, is currently being proposed as an endangered Distinct Population Segment (Federal Register, 2010). Also, DGIF supports the recommendations provided in the draft PEIS regarding the protection of sea turtles during offshore dredging operations.

- Sea Ducks. Various species of seaducks, including white-winged scoters, surf scoters, black scoters and long-tailed ducks, forage primarily on mollusks and crustaceans on marine wintering grounds (Bellrose 1978) in water depths ranging from 1-60 meters (Sea Duck Joint Venture, 2010). Also, Sea ducks occur in high densities within 12 nautical miles off of Virginia's coastline in areas with sandy shoals during the winter (Forsell 2003). Therefore, it is possible that the two unnamed shoals A and B are used by sea ducks as forging sites.

11(d) Recommendations. DGIF has the following recommendations to ensure protection of species under its jurisdiction:

- Bald Eagles. No large machinery should be used within 660 feet of any bald eagle nest from December 15 through July 15 of any year, to ensure protection of bald eagles during excavation activities. Also, DGIF recommends that prior to each excavation cycle, the Wallops Island borrow site should be surveyed to determine if any new nests are built within 660 feet of the excavation area and

that the same excavation time-of-year restriction should be applied to any new or alternate nest sites.

- Shorebirds (Piping and Wilson's plovers and Red Knots). The removal of any sand from the Wallops Island borrow site should occur outside of the breeding and nesting seasons for shorebirds (work should occur from November-March of any year), to prevent potential adverse impacts upon these species as a result of habitat impacts and possible direct impacts associated with construction activities. Conducting construction activities, including extension of the seawall outside of the shorebird nesting season is the best way to minimize impacts and not through on-site monitoring as NASA has proposed. Also, NASA should consider indirect and cumulative impacts of project activities on these species.

- Sea Turtles. The removal of any sand from the Wallops Island borrow site should occur outside of the sea turtle nesting season (work should occur from November-March of any year). Although no species of sea turtles are currently known to nest along this section of beach, the placement of beach fill may attract sea turtles to the beach for nesting.

- Sea Ducks. A minimum of three aerial offshore transect surveys should be conducted over the course of at least one winter season (one in mid-December, one in mid-January, and one in mid-February) along the entire barrier island chain and out to 15 nautical miles, prior to commencing dredging activities. The survey will help to establish the relative use of the two unnamed shoals by sea ducks, which can be used by NASA to assess the impact of dredging activity on these species.

For more information on these comments, contact DGIF.

12. Historic Structures and Archaeological Resources. The draft PEIS (page 270) states that proposed construction activities will not affect aboveground historic properties within the project area. In addition, the additional of beach fill at Wallops Island would not impact archaeological resources as the fill activity is only a surface disturbance. Finally, the proposed Wallops Island borrow site was surveyed and no archaeological resources were discovered.

12(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 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. DHR also provides comments to DEQ through the state EIR review process.

12(b) Finding. The DHR concurs that none of the alternatives will adversely affect any historic properties.

12(c) Recommendation. If any previously unrecorded historic properties are discovered during construction activities, DHR recommends that NASA stop work immediately and contact DHR.

13. Public Water Supply.

13(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).

13(b) Agency Findings. The VDH-OWD states that there are no apparent impacts to public drinking water sources due to the proposed project. There are no groundwater wells within a 1-mile radius and no surface water intakes located within a 5-mile radius of the project site. The project site is not located within Zone 1 or Zone 2 of any public surface water sources.

13(c) Requirement. The VDH-OWD states that potential impacts to public water distribution systems or sanitary sewage collection systems must be verified by the local utility.

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

14. Pesticides and Herbicides. The use of herbicides or pesticides for 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. Please contact the Department of Agriculture and Consumer Services at (804) 786-3501 for more information.

15. Pollution Prevention.

15(a) Comments. DEQ advocates that principles of pollution prevention be used in all construction projects as well as in facility operations. Effective siting, planning, and on-site Best Management Practices (BMPs) will help to ensure that environmental impacts are minimized. However, pollution prevention techniques also include decisions related to construction materials, design, and operational procedures that will facilitate the reduction of wastes at the source.

15(b) Recommendations. We have several pollution prevention recommendations that may be helpful in constructing or operating this project:

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

improvements in its environmental performance. DEQ offers EMS development assistance and it recognizes facilities with effective Environmental Management Systems through its Virginia Environmental Excellence Program.

- Consider environmental attributes when purchasing materials. For example, the extent of recycled material content, toxicity level, and amount of packaging should be considered and can be specified in purchasing contracts.
- Consider contractors' commitment to the environment (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 and building 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. Maintenance facilities should be designed with sufficient and suitable space to allow for effective inventory control and preventative 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, Sharon Baxter at (804) 698-4344.

16. Regional and Local Comments. Accomack County and the Accomack-Northampton Planning District Commission were invited to comment on the proposed project.

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

16(b) Regional Comments. The Accomack-Northampton Planning District Commission did not respond to our request for comments.

16(c) Local Comments. Accomack County did not respond to our request for comments.

DOCUMENT DEFICIENCIES. Reviewing agencies indicated that the draft PEIS was deficient in its analysis concerning alternative selection, impacts to wildlife resources and physical processes in the project area. The final PEIS should address the following deficiencies:

- The draft PEIS (Section 2.3.3.4) is unclear why multiple off-shore breakwaters with beach fill is not an acceptable alternative at the southern end of the project area. During the planning stages of the proposed project, NASA and the Corps considered offshore containment structures and although not clearly explained in the draft PEIS, this alternative was discounted. VIMS wonders if the alternative was discounted due to excessive initial cost, the level of protection needed, a preference for the on-shore seawall extension, the expected downdrift impacts, a combination of these factors or other reasons.

- The draft PEIS is unclear as to why the selected alternatives with only one containment structure at the south end (either groin or breakwater) qualified for the secondary screening of alternatives.

- The draft PEIS does not include a plan of action should the SRIPP fail within the project's life time (i.e. it does not adequately protect the physical assets on the beach and/or it significantly interrupts the natural geologic processes on the islands to the south of the project area). According to the draft PEIS, the project's success is highly dependent on regular beach renourishment, which is expensive and its required frequency unpredictable. The draft PEIS does not explain what actions would be taken if future funding for renourishment activities are significantly reduced or withdrawn and/or if the availability of beach compatible sand from offshore sources becomes depleted. Without adequate renourishment, the seawall would serve as the last line of defense against storms, a strategy that has previously failed on Wallops Island.

- While the draft PEIS acknowledges that the shoreline at Wallops Island will certainly experience the effects of future sea level rise, sea level rise was not included as a variable in the models used to design SRIPP. Moreover, the Storm Damage Reduction Project Design for Wallops Island, Virginia report (Appendix A) offered a very limited discussion on climate change and sea level rise and the only concession it made to address the problem is to follow current Corps' policy. Current policy is to include an additional amount of material during each renourishment event that would raise the entire profile by an amount equal to the projected amount of sea level rise. However, there was no discussion about what steps would be taken to account for sea level rise within the project's lifetime if renourishment at the required volume and frequency is no longer possible due to lack of funding or availability of beach compatible sand. This omission in the draft PEIS makes it difficult to fully assess the scope and breadth of the project's risk to the environment over the next 50 years.

- The proposed mitigation measures for sand removal at the Wallops Island borrow site listed in Table 11 (PEIS, pages 73-74) state that a qualified biologist would closely monitor excavation activities to ensure that impacts to any listed species and their nests would be avoided or minimized. This statement appears to imply that the work would be conducted during the breeding season. However, the draft PEIS also states (page 302) that work in the proposed Wallops Island borrow site would be limited to the non-nesting season for the

Piping Plover (September-March). This contradiction in the draft PEIS needs to be addressed. Also, DGIF notes that if the work is timed to be completed outside of the nesting season, then an on-site biologist would not be necessary.

- The final PEIS should include a cost/benefit analysis. The analysis should examine both the monetary and natural resource costs, including the cost to fish and wildlife resources, the physical integrity of the barrier island chain, and other stakeholder interests (see section "Recommendations," pages 7-8 for more details).

- The draft PEIS states that the Wallops Island borrow area was developed in consideration of "wildlife habitat constraints," but this statement is not further explained. DGIF believes that any excavation at the northern end of the island will likely result in the direct loss of an appreciable amount of nesting habitat for Piping Plovers, Wilson's Plovers and other avian beach nesting species, many of which have been identified as Species of Greatest Conservation Need (SGCN) in Virginia's Wildlife Action Plan (DGIF 2005). Sand excavation activities may also result in the loss of nesting habitat for Diamondback Terrapins, a Tier II SGCN, as well as federally-listed threatened Loggerhead Sea Turtles (it should be noted that the Northwest Atlantic Loggerhead population, whose range includes Virginia, is currently being proposed as an endangered Distinct Population Segment (FR 2010)). Although this loss may not be permanent as indicated by the northern end's current accretion rates, the excavated areas will likely remain unsuitable for beach nesting species until the beach returns to its original elevation. The draft PEIS predicts the recovery period may range from a few months to a few years following excavation activities (PEIS, page 203).

  However, it appears that NASA did not consider the possibility that excavated sites may not have the opportunity to fully recover between renourishment cycles. The inability to recover stems from the fact that the 1 meter reduction in elevation will allow a greater volume of water to come ashore, which could hinder sand deposition through frequent flooding and scouring of artificially created low areas on the beach. Even if excavated areas on the north end are able to recover within several years, it is possible that adequate recovery time will not be provided if the renourishment cycle occurs every two to three years rather than every five years as currently predicted.

- DGIF states that the draft PEIS does not include any measurement of the density, abundance or species composition of benthic invertebrates in the proposed sand excavation area. The draft PEIS also does not address the potential effects that sand removal to a depth of 1 meter will have on the benthic community and the species that forage on these organisms, such as Piping Plovers, Red Knots (a candidate species for federal listing; in recent years, up to 25% of the Virginia's weekly Red Knot population occurred on Wallops Island during spring migration; Watts and Truitt, unpubl. data), and other migrant and breeding shorebirds. DGIF believes that the omission in analysis of environmental consequences represents a serious oversight and a discussion of

such analysis should be included in future iterations of the document. The draft PEIS (pages 242-243) briefly discusses biological impacts to the benthic community from beach fill deposition, which may last as long as eight months or more (Bishop *et al.* 2006). DGIF believes that the combination of sand excavation on the northern end of the island and beach renourishment activities to the south may substantially reduce the benthic invertebrate prey base at Wallops Island for unknown periods of time, which will diminish the quality of the island's shorebird foraging (and breeding) habitat.

- While the draft PEIS mentions that reductions in benthic fauna could negatively affect the fish that forage on these organisms, no consideration was given to potential impacts on sea ducks that could result from reductions in the abundance and species composition of infaunal organisms. Based on the information included in the draft PEIS (Appendix B), it appears that no effort was made to measure the density, abundance and species composition of infaunal organisms at the two offshore borrow sites during the benthic habitat survey. Instead the final report for the benthic survey cites two studies conducted offshore of northern Maryland and southern Delaware (Cutter and Diaz 2000 and Diaz *et al.* 2004), which found that infaunal communities were dominated by annelid worms, followed by mollusks and crustaceans and that mollusks accounted for over 85 percent of the biomass. Various species of seaducks including white-winged scoters, surf scoters, black scoters and long-tailed ducks forage primarily on mollusks and crustaceans on marine wintering grounds (Bellrose 1978) in water depths ranging from 1-60 meters (Sea Duck Joint Venture, 2010). Sea ducks occur in high densities within 12 nautical miles off of Virginia's coastline in areas with sandy shoals during the winter (Forsell 2003). Therefore, it is possible that the two unnamed shoals A and B, proposed for sand mining, are used by sea ducks as forging sites.

- DGIF recommends that the 'Mitigation and Monitoring' section of the draft PEIS address mitigation measures for potential impacts to sea turtles.

- The draft PEIS should consider cumulative effects upon wildlife, not just direct effects resulting from specific construction activities.

- DEQ recommends that the final PEIS address the potential for munitions to be encountered during offshore dredging activities at the Unnamed Shoals as all potential sources for sand identified in the draft PEIS could contain MECs.

- The draft PEIS does not discuss potential alteration of and/or impacts to the existing groundwater monitoring network and potential changes to groundwater flow.

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 to the maximum extent practicable with the 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.

The draft PEIS includes a federal consistency determination and accompanying analysis of the enforceable policies of the VCP (page 219). The consistency determination states that the proposed project would have no effect on the wetlands management, point source pollution control, coastal lands management and shoreline sanitation management enforceable policies of the VCP. The reviewing agencies that are responsible for the administration of the enforceable policies generally agree with NASA's determination. However, NASA must ensure that the proposed action is also consistent with the aforementioned policies. Also, DEQ recommends that NASA consider the advisory policies of the VCP (see Attachment 2).

PUBLIC PARTICIPATION

In accordance with 15 CFR §930.2, the public was invited to participate in the Commonwealth's review of the FCD. A public notice of this proposal was published on the DEQ web site from February 19, 2010 to March 19, 2010. No comments were received in response to the public notice.

CONSISTENCY CONCURRENCE

Based on our review of the draft PEIS and the FCD and the comments submitted by agencies administering the enforceable policies of the VCP, DEQ concurs that the proposal is consistent to the maximum extent practicable with the VCP provided all applicable permits and approvals are obtained. However, other State approvals which may apply to this project are not included in this consistency concurrence. Therefore, NASA must ensure that this project is implemented in accordance with all applicable Federal, State, and local laws and regulations.

REGULATORY AND COORDINATION NEEDS

1. Water Quality and Wetlands. NASA must continue to coordinate with the DEQ to obtain a VWP permit prior to project commencement. For additional information regarding VWP permit regulations (9 VAC 25-210 *et seq.*), contact Bert Parolari of DEQ's Tidewater Regional Office at (757) 518-2166.

2. Subaqueous Lands Impacts. Pursuant to Section 28.2-1204 of the Code of Virginia the VMRC requires a permit for any activities that encroach on or over or take use of materials from the beds, bays, ocean, rivers and streams, or creeks, which are the

property of the Commonwealth. NASA should work with the VMRC to obtain any applicable permits. For additional information, contact George Badger of the VMRC at (757) 414-0710.

3. Erosion and Sediment Control and Stormwater Management. Since the project disturbs more than 10,000 square feet, an erosion and sediment control (ESC) plan should be prepared and implemented to ensure compliance with state law and regulations (VESCL §10.1-560, §10.1-564; VESCR §4VAC50-30-30). The ESC plan should be submitted to DCR's Suffolk Regional Office at (757) 925-2468 for review for compliance.

As with the ESC Plan, NASA is required to prepare a project-specific Stormwater Management Plan for all projects involving a regulated activity. All specifications and plans must be prepared in accordance with the current versions of the Virginia Stormwater Management Law and the Virginia Stormwater Management Program (VSMP) Regulations (4 VAC 50-60 *et seq.*).

4. VSMP General Permit. NASA is required to apply to the Department of Conservation and Recreation for registration coverage under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Construction Activities. This permit requires NASA to develop a project specific stormwater pollution prevention plan (SWPPP) (Virginia Stormwater Management Law Act §10.1-603.1 *et seq.*; VSMP Permit Regulations §4 VAC 40-50 *et seq.*). Specific questions regarding the VSMP General Permit for Construction Activities requirements should be directed to the Department of Conservation and Recreation's Division of Soil and Water Conservation (Holly Sepety, telephone, (804) 225-2613).

5. Air Quality Regulations. This project may be subject to air regulations administered by the Department of Environmental Quality. The following sections of Virginia Administrative Code are applicable:

- fugitive dust and emissions control (9 VAC 5-50-60 *et seq.*); and
- open burning (9 VAC 5-130 *et seq.*).

For information regarding air quality standards and air permits related to fuel burning equipment, contact Jane Workman of DEQ's Tidewater Regional Office at (757) 518-2112.

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.

Some of the applicable state laws and regulations are:

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

- Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110).

Some of the applicable Federal laws and regulations are:

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

For more information, contact DEQ-Tidewater Regional Office at (757) 518-2000.

7. Federal Facilities. DEQ's Federal Facilities Restoration Program recommends that prior to initiating any project activities, NASA should contact T.J. Meyer, NASA's WFF Manager of Environmental Restoration, at (757) 824-1987 for information concerning CERCLA obligations at or near areas adjacent to WFF's CERCLA sites. For information concerning CERCLA obligations at or near WFF's FUDS areas, NASA should contact Sher Zaman, Corps Remediation Project Manager, at (410) 962-3134. For questions concerning these comments, contact Paul Herman of DEQ's FFR Program at (804) 698-4464 or paul.herman@deq.virginia.gov.

8. Petroleum Storage Tanks. If evidence of a petroleum release is discovered during construction of this project, it must be reported to DEQ. For more information, contact the Lynne Smith of DEQ at (757) 518-2055 or Gene Siudyla of DEQ at (757) 518-2117.

Also, the removal, closure, or relocation of any underground or aboveground petroleum storage tank(s) must be must be conducted in accordance with the requirements of the Virginia Tank Regulations (9 VAC 25-91-10 *et seq.* (AST) and/or 9 VAC 25-580-10 *et seq.* (UST)). Questions should be directed to Tom Madigan of DEQ's Tidewater Regional Office at (757) 518-2115 or 5636 Southern Boulevard, Virginia Beach, Virginia 23462.

9. Protected Species. To ensure protection of bald eagles and to determine if any new bald eagle nests were detected during the 2009 survey season, NASA should contact the Center for Conservation Biology (telephone, (757) 221-2247). To ensure protection of all other wildlife species, contact Amy Ewing of DGIF at (804) 367-2211 or amy.ewing@dgif.virginia.gov.

10. Historic Resources. To ensure continued compliance with *Section 106 of the National Historic Preservation Act*, if any previously unrecorded historic properties are discovered during construction activities, NASA should stop work immediately and contact Roger Kirchen of DHR at (804) 367-2323, ext. 153.

Thank you for the opportunity to review the draft Programmatic Environmental Impact Statement and federal consistency determination. Detailed comments of reviewing agencies are attached for your review. Please contact me at (804) 698-4325 or Anne Pinion at (804) 698-4488 for clarification of these comments.

Sincerely,

Ellie L. Irons, Manager
Office of Environmental Impact Review

Enclosures

cc: Elaine Meil, Accomack-Northampton PDC
Steven Miner, Accomack County

ec: Paul Kohler, DEQ-ORP
Kotur Narasimhan, DEQ
Laure McKay, DEQ
Tony Watkinson, VMRC
Cindy Keltner, DEQ-TRO
Amy Ewing, DGIF
Robbie Rhur, DCR
Keith Tignor, VDACS
Karen Duhring, VIMS
Roger Kirchen, DHR
David Spears, DMME
Barry Matthews, VDH

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 VCRMP 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 VCRMP 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 VCRMP to enhance the protection of buildings, structures, and sites of historical, architectural, and archaeological significance from damage or destruction when practicable.

DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
ENVIRONMENTAL IMPACT REVIEW COMMENTS

March 18, 2010

PROJECT NUMBER: 10-019F

PROJECT TITLE: NASA-Shoreline Restoration and Infrastructure Protection Program

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

Petroleum Storage Tank Cleanups:
My comments are similar to the review completed for this project on 6/13/07. There has been multiple petroleum releases reported at the Wallops Flight Facility. One of the closed cases is adjacent to the proposed shoreline restoration, PC# 1993-0913. This release, associated with regulated USTs and ASTs at Buildings X-5 and X-15, should not impact the proposed restoration project. If evidence of a petroleum release is discovered during construction of this project, it must be reported to DEQ. Contact Ms. Lynne Smith at (757) 518-2055 or Mr. Gene Siudyla at (757) 518-2117. Petroleum contaminated soils or ground water generated during construction of this project must be properly characterized and disposed of properly.

Petroleum Storage Tank Compliance/Inspections:
The removal, relocation or closure of any regulated petroleum storage tank – aboveground storage tank (AST); underground storage tank (UST) must be conducted in accordance with the requirements of the Virginia Storage Tank Regulations 9 VAC 25-91-10 et seq (AST) and / or 9 VAC 25-580-10 et seq (UST). Questions and / or documentation submittal may be directed to Tom Madigan – DEQ Tidewater Regional Office – 5636 Southern Blvd., Virginia Beach, VA 23462. Phone (757) 518-2115.

Virginia Water Protection Permit Program (VWPP):
This project will require a permit from the VWPP program. As such, a joint permit application should be submitted to VMRC for distribution and review by interested regulatory parties, including DEQ. Provided that all necessary permits are obtained and complied with, the project should be considered consistent with the requirements of the program.

Air Permit Program :
No comments.

Water Permit Program :
VPDES Permit Section - No Comment. The construction activities considered for this project do not involve permits under our purview.

Ground Water – No comment

DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
ENVIRONMENTAL IMPACT REVIEW COMMENTS

March 18, 2010

PROJECT NUMBER: 10-019F

PROJECT TITLE: NASA-Shoreline Restoration and Infrastructure Protection Program

Waste Permit Program :
Although the proposed project appears to enhance protection of the hazardous waste open burn/open detonation (OB/OD) RCRA permitted unit the draft EIS does not discuss potential alteration/impacts to the existing groundwater monitoring network and potential changes to ground water flow. Prior to implementation coordination with DEQ's Office of Waste Permitting and Compliance is requested. All construction and demolition debris, including excess soil, must be characterized in accordance with the Virginia Hazardous Waste Management Regulations prior to disposal at an appropriate facility.

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

Sincerely,

Cindy Keltner
Environmental Specialist II
5636 Southern Blvd.
VA Beach, VA 23462
(757) 518-2146
Cindy.Keltner@deq.virginia.gov

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR PROGRAM COORDINATION

ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY

TO: Anne N. Pinion **DEQ - OEIA PROJECT NUMBER: 10 – 019F**

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

X CONSISTENCY DETERMINATION

PROJECT TITLE: SHORELINE RESTORATION AND INFRASTRUCTURE PROTECTION PROGRAM

PROJECT SPONSOR: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

PROJECT LOCATION: X OZONE ATTAINMENT AREA

REGULATORY REQUIREMENTS MAY BE APPLICABLE TO: **X 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 5-40-5200 C & 9 VAC 5-40-5220 F – STAGE II Vapor Recovery
3. ☐ 9 VAC 5-40-5490 et seq. – Asphalt Paving operations
4. **X 9 VAC 5-130 et seq. – Open Burning**
5. **X 9 VAC 5-50-60 et seq. Fugitive Dust Emissions**
6. ☐ 9 VAC 5-50-130 et seq. - Odorous Emissions; Applicable to_____
7. ☐ 9 VAC 5-50-160 et seq. – Standards of Performance for Toxic Pollutants
8. ☐ 9 VAC 5-50-400 Subpart_____, Standards of Performance for New Stationary Sources, designates standards of performance for the_____
9. ☐ 9 VAC 5-80-10 et seq. of the regulations – Permits for Stationary Sources
10. ☐ 9 VAC 5-80-1700 et seq. Of the regulations – Major or Modified Sources located in PSD areas. This rule may be applicable to the _____
11. ☐ 9 VAC 5-80-2000 et seq. of the regulations – New and modified sources located in non-attainment areas
12. ☐ 9 VAC 5-80-800 et seq. Of the regulations – Operating Permits and exemptions. This rule may be applicable to _____

COMMENTS SPECIFIC TO THE PROJECT:

K. S. Narasimhan

(Kotur S. Narasimhan)
Office of Air Data Analysis **Date: February 19, 2010**

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

MEMORANDUM

TO: Anne Pinion, Environmental Program Planner

FROM: Paul Kohler, Waste Division Environmental Review Coordinator

DATE: March 24, 2010

COPIES: Sanjay Thirunagari, Waste Division Environmental Review Manager; file

SUBJECT: Environmental Impact Report: Shoreline Restoration and Infrastructure Protection; 10-019F

The Waste Division has completed its review of the Environmental Impact report for the Shoreline Restoration and Infrastructure Protection project in Wallops Island, Virginia. We have the following comments concerning the waste issues associated with this project:

Both solid and hazardous waste issues were addressed in the report. The report did not include a search of waste-related data bases. A GIS database search did not reveal any waste sites within a half mile radius that would impact or be impacted by the subject site. The Waste Division staff performed a cursory review of its data files and determined that there are two hazardous waste sites (NASA GSFC Wallops Flight Facility, VA8800010763 LQG (Active) & VA7800020888 LQG (Active), VA7800020888 TSD (Active), and one formerly used defense site (C03VA0301, VA9799F1697, WALLOPS ISL) located within the same zip code, however their proximity to the subject site is unknown.

The following websites may prove helpful in locating additional information for these identification numbers: http://www.epa.gov/superfund/sites/cursites/index.htm or http://www.epa.gov/enviro/html/rcris/rcris_query_java.html. Paul Herman of DEQ's Federal Facilities Program has been contacted for his review of this determination and his response is attached.

Any soil 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. Some of the applicable state laws and regulations are: Virginia Waste Management Act, Code of Virginia Section 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60); Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-80); Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal laws and regulations are: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous materials, 49 CFR Part 107.

Also, all structures being demolished/renovated/ removed should be checked for asbestos-containing materials (ACM) and lead-based paint prior to demolition. If ACM or LBP are found, in addition to the federal waste-related regulations mentioned above, State regulations 9VAC 20-80-640 for ACM and 9VAC 20-60-261 for LBP must be followed.

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

If you have any questions or need further information, please contact Paul Kohler at (804) 698-4208.

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WASTE DIVISION
Federal Facilities Restoration Program
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Draft Programmatic Environmental Impact Statement - Wallops Flight Facility -Shoreline Restoration and Infrastructure Protection Program

TO: Anne Pinion, OEIR

FROM: Paul E. Herman, P.E., FFR

DATE: March 9, 2010

COPIES: Paul Kohler, File

The *Draft Programmatic Environmental Impact Statement - Wallops Flight Facility - Shoreline Restoration and Infrastructure Protection Program* dated February 2010 has been reviewed as requested by Paul Kohler, Waste Division Environmental Review Manager. The Draft PEIS identified several alternatives and the preferred alternative for addressing shoreline restoration/protection on Wallops Island. The restoration/protection project will have a direct impact on the shoreline, as intended, but also impacts the excavation and dredge areas from which sand will taken to replenish the shoreline.

Focusing on the Preferred Alternative, the proposed project may impact several Federal Facilities Restoration Program Formerly Used Defense Sites currently under investigation by the U.S. Army Corps of Engineers. The sites in question are situated in the northern potion of Wallops Island along or immediately adjacent to the shoreline and/or areas proposed for use as borrow pits for sand replenishment. Each site is in the early phases of investigation. To date only archive searches have been conducted which identified historic activities that warrant further investigation.

The northern-most site is Gunboat Point. The Gunboat Point site contains a bombing area, strafing target, and explosive ordnance disposal (EOD) area. The bombing area was used by the Naval Aviation Ordnance Test Station (NAOTS) to test live high explosive bombs, aircraft parachute flares, and napalm-filled fire bombs. The strafing target was used to train naval aviators on the use of aircraft .50 caliber machine guns. The EOD area was used to dispose of ammunition and is expected to contain munitions and explosives of concern. Latitude and longitude coordinates for each area are available.

Moving south along the shoreline, the next site is the Machine Gun and Rocket Firing Area. Here NAOTS statically tested aircraft machine guns and cannons at 3 ranges; a 750 yard, a 500 yard, and a 175 yard ground range each of which fired toward the dunes/ocean. Lat/long coordinates are available for the firing points and target areas.

The last site along the shoreline is the Grebe Range, Target Center, and Facilities. The Grebe Range is where a 20mm gun was used (fired out to sea) to calibrate the radar and fire control components. Kingfisher missiles, Grebe missiles, and 3.25 inch rockets were fired from this site. The Target Center is where the range was instrumented and used to various aspects of aviation ordnance. The Explosive Ammunition Test Facility established a controlled environment where aircraft guns and munitions could be test fired. Targets were located on the shoreline and guns were fired seaward from the test facility. Lat/long coordinates are available for these facilities as well.

The proposed project is the latest in many beach replenishment projects that Wallops Island has seen over the years the history of which was provided in the Draft PEIS. One potential consequence of relocating sand from borrow areas on Wallops Island or offshore dredge areas became evident during the storms of November and December 2009. Wave action during those storms created breaches in the seawall. Within some of the breaches old munitions were found intermixed with seawall boulders and concrete debris (Figure 1 and 2). It has been surmised the munitions were transported to these areas during earlier replenishment projects as the locations where the munitions

were discovered did not coincide with areas where munitions were used historically. Some of the munitions still contained explosive material.

The potential for munitions to be encountered during excavation of sand from other areas of Wallops Island as part of this project is clearly acknowledged within the Draft PEIS. What is not addressed is the potential for munitions to be encountered during offshore dredging activities at the Unnamed Shoal. Essentially, all potential sources for replenishment sand identified in the Draft PEIS could contain munitions and explosives of concern. The borrow and dredge material should be thoroughly screened during removal. EOD personnel should be present at each sand removal point and each removal area should be GPS-ed to allow identification of areas where munitions were encountered. All munitions encountered should be managed in accordance with NASA's established munitions avoidance and disposal procedures. Under no circumstance should munitions be removed from a borrow or dredge area and disposed in the project area.

Prior to initiating any construction, excavation or dredging activities on Wallops Island or offshore, the Federal Facilities Restoration Program recommends the Shoreline Restoration and Infrastructure Protection Program Project Manager contact Mr. T.J. Meyer, NASA WFF Manager of Environmental Restoration at (757) 824-1987, for information concerning any CERCLA obligations at or near areas adjacent to Facility CERCLA sites and Mr. Sher Zaman, U.S. Army Corps of Engineers Remediation Project Manager, Wallops FUDS at (410) 962-3134 for information concerning CERCLA obligations at or near Wallops FUDS sites.

Figure 1

Figure 2

COMMONWEALTH of VIRGINIA

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

Douglas W. Domenech
Secretary of Natural Resources

Steven G. Bowman
Commissioner

February 17, 2010

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

Re: 10-019F (Shoreline Restoration Wallops Island)

Dear Ms. Pinion:

You have inquired regarding the permitting requirements for Shoreline Restoration on Wallops Island. The Marine Resources Commission requires a permit for any activities that encroach upon or over, or take use of materials from the beds of the bays, ocean, rivers and streams, or creeks, which are the property of the Commonwealth.

In addition, since Accomack County has not yet adopted the model Coastal Primary Sand Dune Zoning Ordinance, the Commission is charged with reviewing the impacts associated with any project that may fall within the Coastal Primary Sand Dunes/Beaches of Accomack County.

Based upon my review of the reference maps and drawings, it appears that alternatives 1 through 3 will require authorization from the Marine Resources Commission. (The proposed dredged sits appear to be greater than 3 miles offshore, therefore, that portion of the project will not require a permit from our agency.)

Alternative 1. (NASA's Preferred Alternative) Proposes to extend the existing stone riprap an additional 4,600 feet south and place 3,199,000 cubic yard of sandy dredged material along the Wallops Island shoreline. **This alternative would help alleviate some of our concerns with the anticipated 5 year nourishment cycles long term funding. If funding was not secured the existing longshore transport of sand to Assawoman Island would have less impact than in the proposed Alternative 2 (jetty).**

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

Sincerely,

George H. Badger, III
Environmental Engineer

Pinion, Anne (DEQ)

From: O'Reilly, Rob (MRC)
Sent: Monday, April 12, 2010 9:24 AM
To: Pinion, Anne (DEQ); Badger, Hank (MRC); Travelstead, Jack (MRC)
Cc: Watkinson, Tony (MRC)
Subject: RE: Draft Programmatic EIS - NASA-Shoreline Restoration and Infrastructure Protection Program

Anne: Hope you are well, now. Hank Badger discussed the project with me. Fisheries Management does not have any comments. Thanks again. Rob

WILLIAM & MARY
VIMS
VIRGINIA INSTITUTE OF MARINE SCIENCE
SCHOOL OF MARINE SCIENCE

Center for Coastal Resources Management
Virginia Institute of Marine Science

March 25, 2010

Ms. Anne N. Pinion
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219

Subject: DEQ #10-019F
NASA Shoreline Restoration and Infrastructure Protection Program (SRIPP)

Dear Anne:

The preliminary Environmental Impact Statement for the NASA Wallops Flight Facility Shoreline Restoration and Infrastructure Protection Program was reviewed as requested. In addition to the review of the PEIS, VIMS has been involved with this project since 2008 as one of many state, federal and NGO stakeholders. The following comments are provided by VIMS:

1. This PEIS thoroughly examines potential shoreline protection alternatives and various environmental and other impacts associated with these alternatives. The main findings and selected alternatives are well supported with various models, current scientific reference data and professional expert advice.

2. If relocation of vulnerable infrastructure to the mainland is not a viable option, then we agree that the No Action Alternative is not acceptable. Irregular and unscheduled emergency protection actions are not effective. Some type of additional action is necessary to provide erosion and storm protection for the valuable infrastructure at this facility.

3. Even though the scope of the project will have significant impacts in federal offshore waters and along the coastline, we generally agree that the three selected shoreline restoration alternatives are appropriate. Each one includes multiple mitigation measures to minimize unavoidable impacts. The future effects of sea level rise were also accounted for within the 50-year project life.

4. It is not clearly explained in the Description and Comparison of Alternatives (Section 2.3.3.4) why multiple off-shore breakwaters with beach fill is not an acceptable alternative at the southern end of the project area. We know that offshore containment structures were seriously considered by NASA and the US Army Corps of Engineers. We also realize that several factors may have discounted this alternative, such as excessive initial cost, the level of protection needed, a preference for the on-shore seawall extension, the expected downdrift impacts, a combination of these factors or other reasons.

5. It is also not clear how the selected alternatives with only one containment structure at the south end (either groin or breakwater) qualified for the secondary screening of alternatives. We suggest a stronger explanation for the record why multiple containment structures are not acceptable and why alternatives with only one structure at the south end are acceptable.

6. The proposed offshore sand mining was thoroughly evaluated and appears to be consistent with the current scientific understanding of potential impacts. Several mitigation measures are included to minimize adverse environmental effects during the dredging and transport process.

7. While we recognize the attractiveness of a local, upland sand source, it is our opinion that mining sand from the north end of Wallops Island could have adverse impacts on the beach and dune processes in this natural area. Our concerns were alleviated somewhat by the supporting information that this source will not be used for the initial beach fill, the material to be excavated will likely originate from the initial beach fill due to the predicted sand transport pattern, and that no temporary construction access roads or other improvements will be needed to transfer the material. Other mitigating factors include only using this source material for a portion of the re-nourishment events and only if threatened and endangered species will not be adversely impacted. We defer to the VA Department of Game and Inland Fisheries and U.S. Fish and Wildlife Service to further assess the potential plant and wildlife impacts associated with mining sand from the north end of Wallops Island.

8. The proposed monitoring programs will be essential to validate project performance assumptions and to adapt the management strategies as needed over the life of the project. Beach profiles and biological surveys at the north island sand removal area will be particularly important to support using this sand source.

9. Regardless of which alternative is selected, the proposed activities will have reasonably foreseeable effects on coastal resources. It is our opinion that the proposed SRIPP activities are consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Resources Management Program, as stated in Section 4.2.6, CZM Federal Consistency Determination. Additional and more specific avoidance, minimization, and mitigation measures will be addressed during the anticipated permit process for various stages of the project.

Please contact me if you have any questions about these comments (804-684-7159; karend@vims.edu).

Sincerely,

Karen A. Duhring

Karen A. Duhring
Marine Scientist

Center for Coastal Resources Management
Virginia Institute of Marine Science
College of William and Mary

Pinion, Anne (DEQ)

From: Ewing, Amy (DGIF)
Sent: Thursday, April 01, 2010 9:29 AM
To: Pinion, Anne (DEQ)
Cc: Boettcher, Ruth (DGIF)
Subject: ESSLog# 23888_ 10-019F_Wallops Flight Facility_Shoreline Restoration and Infrastructure Protection Program
Attachments: 23888_Wallops Island SRIPP_EIS Scoping_final_05072009.pdf

Good morning Anne,
As promised, our comments on the subject project are below. We also plan to follow up with NASA directly with a letter. Thanks and let me know if you have any questions. Amy

We have reviewed the Draft Programmatic Environmental Impact Statement (draft PEIS) for the Wallops Flight Facility (WFF) Shoreline Restoration and Infrastructure Protection Program (SRIPP) that proposes three alternative projects to restore the shoreline along Wallops Island for the purpose of securing the flight facility's infrastructure. During scoping for the PEIS, we provided the attached letter to NASA and offer that here for reference.

Shoreline stabilization efforts have been ongoing at Wallops Island since the 1940's and yet the island continues to experience shoreline retreat; thus placing the increasing number of expensive assets on the beach at risk. Oertel *et al.* (2008) refers to the area between the southern end of Assateague Island to the north tip of Parramore Island as the Chincoteague Bight and proposes that the extremely rapid retreat of the barrier islands within this major offset along the barrier island chain is due to natural processes driven by topographic features that existed during previous ice ages. Moreover, the "Storm Damage Reduction Project Design" study (Appendix A) suggests the growing cape of Fishing Point, located at the southern end of Assateague Island is capturing sand that would otherwise be available to the neighboring islands to the south, a further indication that much of Wallops Island will continue to retreat thereby necessitating continual and costly efforts to slow the natural movement of the island over the long term. In light of this information, we caution that the shoreline along Wallops Island is likely to continue to shift under natural conditions and that attempts to delay or alter these natural fluctuations in shoreline may be futile over the long term.

Currently, management of Virginia's barrier island chain is minimal and basically allows nature to take its course. This management scheme has proven, over time, to benefit the fish and wildlife that inhabit these areas. All of the alternatives presented in the draft PEIS directly counter this management scheme. Based on this and the scope and location of the activities proposed to stabilize the shoreline at WFF, we cannot fully support any of the alternatives presented in the draft PEIS as they are all likely to result in adverse impacts upon wildlife under our jurisdiction and/or impact the resources upon which they depend (as described in the attached letter). However, of the alternatives presented in the draft PEIS, VDGIF agrees with the decision to designate Alternative 1 as the Preferred Alternative since it no longer includes the installation of a permeable groin, which would reduce the southerly longshore transport of sand thereby adversely affecting the islands south of Wallops. However, we do continue to have concerns about several aspects of the activities proposed in the Preferred Alternative. We offer the following comments and recommendations about the three alternatives presented in the draft PEIS.

Alternative 1 (Preferred Alternative): Full Beach Fill, Seawall Extension
Alternative 1, the Preferred Alternative, proposes to, during the initial construction phase, extend Wallops Island's existing rock seawall a maximum of 1,400 meters south of its currently existing southernmost point. We are concerned that extension and increase in height of the existing seawall will prevent natural island overwash processes from occurring over a large area of the island. As mentioned in the draft PEIS (chapter 4, page 195, third paragraph), this would likely result in a greater loss of surface area on the landward side of the seawall and enhance island narrowing with the rise of sea level. Over the long term (i.e., beyond the 50-year life span of the project), a reduction in land mass may seriously affect the island's natural function as the first line of protection against storm surge and other weather-related events for the marshes and mainland that lie west of the island. Moreover, it will reduce the island's value to beach and marsh-dependent wildlife through the loss of beach seaward to the seawall if renourishment efforts are not be able to keep up with beach fill erosion rates, and the loss of marshes behind the island should significant island narrowing occur. Lastly, the results from the models presented in Appendix A of the draft PEIS suggest that the seawall extension will have less of impact on Assawoman Island's shoreline over the long term than the current changes in shoreline incurred by yearly variation in wave climate and storms. The draft PEIS goes on to say that any negative impacts from the

seawall would be mitigated following beach fill placement, implying that without renournishment negative impacts are possible. We recommend further explanation of the possible adverse impacts resulting from any of the proposed activities and how such impacts may be mitigated.

Because of these and other potential impacts this project may have on wildlife resources beyond the project area, we requested that the PEIS present a threshold at which WFF considers the environmental cost of the project to outweigh the benefits to its mission and goals as detailed in the attached letter. We recommend that the cost/benefit analysis not only examine monetary costs, but also take into account costs to fish and wildlife resources, the physical integrity of the barrier island chain, and other stakeholder interests. We also requested that the PEIS include a discussion on the availability of funding for continuous beach renourishment since it is being presented as a key element to the project's success. We do not believe that either request was adequately addressed, making it far more difficult to assess the project's risk to the broader environment over the life time of the project.

The project's predicted success is the main theme presented throughout the draft PEIS. What it does not include is a plan of action should SRIPP fail within the project's life time (i.e., it does not adequately protect the physical assets on the beach and/or it significantly interrupts the natural geologic processes on the islands to the south of the project area). According to the draft PEIS, the project's success is highly dependent on regular beach renourishment, which is expensive and its required frequency unpredictable. The PEIS did not explain what actions would be taken should future funding for renourishment activities be significantly reduced or withdrawn and/or should the availability of beach compatible sand from offshore sources become depleted. Without adequate renourishment, the seawall would serve as the last line of defense against storms; a strategy that has been recently tried and failed on Wallops Island. We recommend that a contingency plan that details the steps to be taken if the proposed project fails be developed and provided to us for review so that we may better understand the long term environmental impacts of the proposed project.

The Preferred Alternative also proposes placing sand dredged from Unnamed Shoal A, located offshore in federal waters, on the Wallops Island shoreline from 460 meters north of the Wallops Island-Assawoman Island property boundary north for 6 kilometers. NASA proposes that sand for the initial fill be dredged from Unnamed Shoal A and that a portion of the renourishment fill volumes would be excavated from the north Wallops Island borrow site and the remaining portion would be dredged from either Unnamed Shoal A or Unnamed Shoal B. We are strongly opposed to using the north end of Wallops Island as a borrow site for beach fill during renourishment cycles. In 2009, four pairs of federally-threatened Piping Plovers nested in the area proposed for sand excavation. Collectively they fledged 10 young, which resulted in the highest reported fledge rate in Virginia last year, clearly indicating this portion of the island provides suitable habitat for the species.

The total potential area for sand excavation at the north end of Wallops Island encompasses 150 acres and the proposed excavation depth is 1 meter. The draft PEIS states that the area proposed for excavation was developed in consideration of "wildlife habitat constraints", but this is not further explained. We recommend a detailed explanation of what wildlife habitats at this end of the island are being avoided during excavation. While only a portion of the proposed area will be excavated during each renourishment cycle, this will likely result in the direct loss of an appreciable amount of nesting habitat for Piping Plovers, state-threatened Wilson's Plovers and other avian beach nesting species, many of which have been identified as Species of Greatest Conservation Need (SGCN) in Virginia's Wildlife Action Plan (VDGIF 2005). Sand excavation activities may also result in the loss nesting habitat for Diamondback Terrapins, a Tier II SGCN, as well as federally-threatened Loggerhead Sea Turtles (it should be noted that the Northwest Atlantic Loggerhead population, whose range includes Virginia, is currently being proposed as an endangered Distinct Population Segment (FR 2010)). Although this loss may not be permanent as indicated by the north end's current accretion rates, the excavated areas will likely remain unsuitable for beach nesting species they until build back up to their original elevations. The draft PEIS predicts the recovery period may range from a few months to a few years following excavation activities (page 203, last paragraph). What it appears the draft PEIS did not consider is the possibility that excavated sites may not have the opportunity to fully recover because the 1 meter reduction in elevation will allow a greater volume of water to come ashore, which may hinder sand deposition through frequent flooding and scouring of artificially created low areas on the beach. Even if excavated areas on the north end are able to recover within several years, it is possible that adequate recovery time will not be provided if renourishment occurs every two – three years rather than every five years as currently predicted. We recommend consideration of the actual recovery time and analysis of the sustainability of beaches at the north end of Wallops Island.

The draft PEIS does not include any measurement of the density, abundance or species composition of benthic invertebrates in the proposed sand excavation area. Nor does it address potential effects sand removal to a depth of 1 meter will have on the benthic community and the species that forage on these organisms, such as Piping Plovers, Red Knots, a candidate species for federal listing (in recent years, up to 25% of the Virginia's weekly Red Knot population occurred on Wallops Island during spring migration;Watts and Truitt, unpubl. data), and other migrant and breeding shorebirds. In our opinion, the omission in analysis of environmental consequences represents a serious oversight and a discussion of such analysis should be included in future iterations of the document. The draft PEIS does briefly discuss biological impacts to the benthic community from beach fill deposition (chapter 4, page 242 – 243), which may last as long as eight months or more (Bishop *et al.* 2006). We believe the combination of sand excavation on the north end and beach renourishment activities to the south may substantially reduce the benthic invertebrate prey base at Wallops Island for unknown periods of time, which will diminish the quality of the island's shorebird foraging (and breeding) habitat.

The draft PEIS reports that the sand on the north end of Wallops Island is not an optimal grain size for use as beach fill, but that it offers potential renourishment material without the mobilization and operational costs associated with offshore dredging (chapter 2, page 48, first paragraph). We are concerned that the sacrifice of important and unique wildlife habitat in the only section of undeveloped beach on Wallops Island to acquire fill material at the lowest cost possible is not appropriate. Moreover, this counters the mitigation measure developed for sand placement activities (chapter 5, page 300), which states that beach nourishment will be done so that the beach is restored to a comparable sediment type (a similar percentage of sand, silt and clay), grain size and color as the existing beach material.

The proposed mitigation measures for sand removal on the north end of Wallops Island listed in Table 11 (Chapter 2, page 73-74) state that a qualified biologist would closely monitor the area during excavation activities to ensure that impacts to any listed species and their nests would be avoided or minimized, thereby implying the work would be conducted during the breeding season. However, in Chapter 5, page 302, Section 5.1.5.2, it states that work in the proposed north Wallops Island borrow site area would be limited to the non-nesting season for the Piping Plover (September-March). This contradiction in the draft PEIS needs to be addressed. We want to re-iterate that we are opposed to using the north end of Wallops Island as a borrow site. However, if it is used for this purpose, we recommend that all excavation and related activities on the beach at the north end occur outside of the breeding and nesting seasons for Piping Plover and sea turtles. Therefore, we recommend that all work at the site occur from November – March of any year.

In addition, we note that a State Threatened bald eagle nest has been documented on the north end of Wallops Island. To ensure protection of this species from harm during excavation activities, we recommend that no large machinery be used within 660 feet of the bald eagle nest from December 15 through July 15 of any year. We note that eagles have high nest site fidelity and will typically return to the same nest each year to raise young. However, we do see eagle pairs also build alternate nest sites within their territory for use. We recommend that prior to each excavation cycle, the north end of Wallops be surveyed to determine if any new nests are built within 660 feet of the excavation area and that the same excavation time of year restriction be applied to any new or alternate nest sites.

Based on the information included in the draft PEIS, it appears that no effort was made to measure the density, abundance and species composition of infaunal organisms at the two offshore borrow sites during the benthic habitat survey (Appendix B). Instead the final report for the benthic survey cites two studies conducted offshore of northern Maryland and southern Delaware (Cutter and Diaz 2000 and Diaz *et al.* 2004) which found that infaunal communities were dominated by annelid worms, followed by mollusks and crustaceans and that mollusks accounted for over 85 percent of the biomass. Various species of seaducks including white-winged scoters, surf scoters, black scoters and long-tailed ducks forage primarily on mollusks and crustaceans on marine wintering grounds (Bellrose 1978) in water depths ranging from 1 – 60 meters (SDJV 2010). Sea ducks occur in high densities within 12 nautical miles off of Virginia's coastline in areas with sandy shoals during the winter (Forsell 2003). Therefore, it is possible that the two unnamed shoals A and B, proposed for sand mining, are utilized by these birds as forging sites.

The draft PEIS acknowledges that repeated dredging activities at intervals of three years or less, may not allow sufficient time for benthic communities to recover between dredging cycles. Studies examining the effects of sand mining on infaunal communities found that levels of abundance and diversity may recover within 1 to 3 years, but recovery of species composition may take longer (Byrnes *et al.* 2004). While the draft PEIS mentions that reductions in benthic fauna could negatively affect the fish that forage on these organisms, no consideration was given to potential impacts on sea ducks that could result from reductions in the abundance and species composition of infaunal organisms. We strongly recommend before the commencement of any dredging activities, that a minimum of three aerial offshore transect surveys be conducted over the course of at least one winter season (one in mid-December, one in mid-January, and one in mid-February) along the entire barrier island chain and out to 15 nautical miles to establish relative use of the two unnamed shoals by sea ducks. This information will assist efforts to assess the impact dredging activities will have on these avian species.

Alternative 2: Full Beach Fill, Groin, Seawall Extension
In addition to the extension of the seawall and beach fill as described in Alternative 1 (differences in beach fill amount between Alternatives 1 and 2), Alternative 2 includes the construction of a groin at the south end of the Wallops Island shoreline and perpendicular to the shoreline. We are concerned about the adverse affects placement of a groin at the south end of Wallops may have on islands south of Wallops as it may reduce the naturally occurring transport of sands to those areas. Although we recognize NASA's need to protect its assets, we do not support any action to do so that adversely affect other barrier islands that provide important shorebird and sea turtle nesting areas and other wildlife habitats.

Alternative 3: Dull Beach Fill, Breakwater, Seawall Extension
In addition to the extension of the seawall and beach fill as described in Alternative 1 (differences in beach fill amount between Alternatives 1 and 3), Alternative 3 includes the construction of a nearshore breakwater structure parallel to the south end of the Wallops Island shoreline. We are concerned that the reduction in beach erosion resulting from wave attenuation performed by the breakwaters will be negated by the newly constructed seawall extension. We are also concerned that this structure may also result in shoreline erosion to its south.

Sea Level Rise:

While the draft PEIS acknowledges that the shoreline at Wallops Island will certainly experience the effects of future sea level rise, it was not included as a variable in the models used to design SRIPP. Moreover, the Storm Damage Reduction Project Design for Wallops Island, VA report (Appendix A) offered a very limited discussion on climate change and sea level rise and the only concession it made to address the problem is to follow current US Army Corps of Engineers policy which is to include an additional amount of material during each renourishment event that would raise the entire profile by an amount equal to the projected amount of sea level rise. There was no discussion about what steps would be taken to account for sea level rise within the project's lifetime if renourishment at the required volume and frequency is no longer possible due to lack of funding or availability of beach compatible sand. This omission in the PEIS makes it difficult to fully assess the scope and breadth of the project's risk to the environment over the next 50 years.

Mitigation and Monitoring Plan:
Seawall Extension - According to the draft PEIS, impacts upon wildlife associated the extension of the seawall would be avoided through on site monitoring to ensure that Red Knots and Piping Plovers are not directly affected during the construction of the wall. We contend that avoidance could better be achieved by timing construction activities outside of shorebird nesting season. In addition, we recommend some mention in this section about mitigation for possible impacts upon sea turtles. Although none are known to nest along this section of beach, it is always possible, especially with the placement of beach fill. In addition, we recommend consideration of cumulative effects upon wildlife resulting from the project, not only direct affects resulting from specific construction activities.

Offshore Dredging Activities - We support the recommendations provided in this section regarding the protection of sea turtles and recommend continued coordination with the NMFS regarding their protection and the protection of sea mammals. As stated above, we recommend that studies be performed ahead of dredging to determine how the unnamed shoals are utilized by sea ducks and that those data be used to analyze what, if any, impacts upon sea ducks the removal of much of the shoal material will have on these species. We further recommend that based on the results of the studies, a plan to mitigate any impacts upon sea ducks be developed.

North Wallops Island Sediment Removal - As previously stated, we recommend that all sand removal, if performed, occur outside of the nesting season for Piping Plover and sea turtles. Statements that indicate that a biologist would be on site during excavation to ensure avoidance of direct impacts upon these species may not be necessary if the work is timed correctly. We recommend clarification of this point. Adverse impacts upon the listed species may occur as a result of habitat impacts in addition to possible direct impacts associated with construction activities. We recommend consideration of indirect and cumulative impacts.

Beach Profile Monitoring Program - The beach profile monitoring program discussed in Appendix A will be conducted throughout the lifetime of the project. Analysis of these data will also be used to determine when renourishment should take place and the amount of material needed from all three borrow sites. Moreover, the information collected will be the primary tool used to monitor the behavior of the project and identify any negative impacts. As this effort is currently proposed, it is confined to Wallops and Assawoman islands. We strongly recommend that the beach profile monitoring also be conducted on Metompkin and Cedar islands at a frequency that allows for an accurate assessment to be made regarding project impacts further south along the island chain. We feel this is a necessary component in the beach profile monitoring program given that shoreline behavior on Wallops, Metompkin and Cedar islands is driven by the similar geologic processes (Oertel *et al.* 2008) and therefore may behave more as a unit than as independent landmasses.

Coastal Consistency:
As this project is located within a marine environment, we defer to VMRC regarding whether this project is consistent with the Fisheries Management Section of the CZMA.

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COMMONWEALTH of VIRGINIA

L. Preston Bryant, Jr.
Secretary of Natural Resources

Department of Game and Inland Fisheries

Robert W. Duncan
Executive Director

May 7, 2009

Mr. Joshua A. Bundick
Wallops Flight Facility NEPA Program Manager
c/o National Aeronautics and Space Administration
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, Virginia 23337

RE: EIS Scoping – NASA Wallops
Flight Facility SRIPP
ESSLog # 23888

Dear Mr. Bundick:

This letter is in response to your notice of scoping for the Environmental Impact Statement (EIS) for the Shoreline Restoration and Infrastructure Protection Program (SRIPP) at NASA Wallops Flight Facility (WFF). The Virginia Department of Game and Inland Fisheries (VDGIF), as the Commonwealth's wildlife and freshwater fish management agency, exercises full law enforcement and regulatory jurisdiction over those resources, inclusive of State or Federally *Endangered* or *Threatened* species, but excluding listed insects. We are a consulting agency under the U. S. Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et *seq.*), and we provide environmental analysis of projects or permit applications coordinated through the Virginia Department of Environmental Quality, the Virginia Marine Resources Commission, the Virginia Department of Transportation, the U. S. Army Corps of Engineers, and other state or federal agencies. Our role in these procedures is to determine likely impacts upon fish and wildlife resources and habitats, and to recommend appropriate measures to avoid, reduce, or compensate for those impacts.

Virginia's Barrier Islands

Virginia's barrier islands represent a critically important breeding area for a number of beach nesting shorebirds and seabirds that are of high conservation concern, including the federally Threatened piping plover *(Charadrius melodus)*, the state Endangered Wilson's plover (*C. wilsonia*), the American oystercatcher (*Haematopus palliatus*), which is ranked nationally as a high conservation priority species in the US Shorebird Conservation Plan (Brown *et al.* 2001), the state Threatened gull-billed tern (*Sterna nilotica*), and the least tern (*S. antillarum*), which is

a state species of special concern. The Commonwealth's northern barrier islands that extend from Assateague Island south to Cedar Island typically support over 75% of Virginia's piping plover breeding population and in some years over 90% of the Commonwealth's breeding pairs have occurred on the northern islands (Boettcher *et al.* 2007). Since 2000, Virginia's Wilson's plover breeding population has been confined to Assawoman, Metompkin and Cedar islands with the exception of 2008 when one pair was discovered nesting on Assateague Island (Wilke *et al.* 2009). The barrier islands support over 50% of Virginia's American oystercatcher breeding population with a significant proportion occurring on Metompkin and Cedar islands (Wilke *et al.* 2005; Wilke *et al.* 2009). Moreover, oystercatcher productivity rates along the barrier island chain are some of the highest reported on the US the Atlantic coast, suggesting that the islands may serve as important population sources for the east coast population (Wilke 2008). The barrier islands also provide critical breeding habitat for least terns; since 1975 35% – 67% of the Commonwealth's population has been documented on the barrier island chain (VDGIF, unpubl. data). Virginia's statewide gull-billed tern breeding population has declined from approximately 2,000 pairs in the mid-1970's (Erwin *et al.* 1998) to fewer than 300 pairs in the last three years with the majority of nesting occurring on Virginia's seaside marshes and barrier islands (VDGIF, unpubl. data). While gull-billed terns are able to exploit barrier island and marsh habitats with equal success in response to rapidly changing conditions (Boettcher and Wilke 2009), the barrier islands remain important habitat for the declining species in Virginia. Other barrier island nesting species of greatest conservation need (as defined in Virginia's Wildlife Action Plan, available at www.bewildva.com) include black skimmer (*Rynchops niger*), common tern (*S. hirundo*), royal tern (*S. maxima*) and sandwich tern (*S. sandvicensis*) (VDGIF 2005).

Collectively, the aforementioned avian species' habitat requirements include broad beaches with low discontinuous dunes and expansive sand-shell flats. In addition, piping plover broods require unimpeded access from beach nest sites to the moist-soil ecotones of backside marshes and mudflats for forage and cover (Boettcher *et al.* 2007). These areas are highly susceptible to storm-generated disturbances, which serve to maintain the open active sand zones favored by these species. Any beach restoration activities that attempt to stop the natural movement of an island, counter storm-generated disturbances, or disrupt the longshore transport of sand may result in widespread loss of suitable nesting habitat for avian beach nesting species.

Over the past 20 years, the red knot (*Calidris canutus rufa*) population has declined by over 80% (Morrison *et al.* 2004) and this species is currently a candidate for federal listing under the Endangered Species Act. A significant portion of the population that migrates north along the US Atlantic coast in the spring uses the barrier islands as stopover sites (Smith *et al.* 2008). This includes Wallops Island where more than 1,000 birds have been recorded during a single survey (Center for Conservation Biology, The Nature Conservancy, and VDGIF, unpubl. data). Typical beach renourishment may impact long-distance migrant shorebirds that forage on sand-dwelling invertebrates, such as red knot, by reducing the availability of prey within reach of the birds' bills for a period of time following sand deposition (Bishop *et al.* 2006). Moreover, beach armouring and the installation of groins may result in significant loss of suitable shorebird foraging habitat in the intertidal zone seaward and south of these structures, respectively. These effects are likely to become even more pronounced in the face of sea level rise (Galbraith *et al.* 2002).

Virginia is the northern extreme of the federally Threatened loggerhead sea turtle (*Caretta caretta*) nesting range. While the majority of the Commonwealth's nesting activity has been confined to southern mainland beaches (Fort Story - NC/VA border), nesting activity on the northern barrier islands, including Wallops Island, has increased slightly in recent years (VDGIF, unpubl. data). Nesting sea turtles typically nest on dynamic ocean beaches that have a wide berm and a relatively intact natural dune system. This species typically avoids or has poor nesting success on armoured beaches, which over time, become devoid of dry beaches and natural primary dune systems. Moreover, there is concern that beach renourishment may affect the quality of turtle nesting habitat (Crain *et al.* 1995). For example, the deposition of sand could change beach sand color thereby affecting sand temperature. Because the sex of sea turtles is determined by the temperature of sand surrounding the nest cavity, beach renourishment could alter sex ratios. Beach renourishment also may influence other physical characteristics of beaches such as sand-grain size and shape, silt-clay content, sand compaction, moisture content, porosity/water retention and gas diffusion rates. The altering of one or more of these physical characteristics may not necessarily impact beach selection by nesting females (Crain *et al.* 1995), but may reduce reproductive success of nests laid in these renourished areas (Ackerman 1996).

Alternatives Analysis

- Alternative 1 (the preferred alternative) proposes to extend the existing seawall an additional 4,500 feet south, enlarge the beach with offshore dredged sand, and construct a rock jetty near the southern WFF property line. The proposed groin would allow some fill to pass through and, according to the description of the SRIPP, the net sand transport to Assawoman Island would be equal to or exceed pre-construction conditions. We are concerned that the proposed jetty may impede existing longshore transport of sand to Assawoman, Metompkin and Cedar islands, especially if funding can not be secured for the anticipated 5 – 7 year renourishment cycle. In addition, we are concerned that the extension of the seawall will further accelerate sand loss seaward of the seawall, particularly during periods of frequent storm events. Lastly, regular beach renourishment is very costly and may negatively affect local wildlife habitats in the short term, especially if non-compatible sand is used. This practice also may threaten the biological integrity of the two shoals from where sand will be obtained and may reduce the overall sand budget in the nearshore system, accelerating erosion of nearby beaches.

- We have similar concerns with Alternative 4 as we do with Alternative 1 because it involves the same actions, only less beach fill will be used. The reduced beach fill will likely require more frequent beach renourishment; therefore Alternative 4 does not appear to offer any cost benefits or reduce barrier island ecosystem impacts over the long term.

- We have concerns with Alternatives 2 and 5, which involve beach fill, detached breakwaters, and seawall extension mainly due to issues surrounding the seawall extension as discussed above. While the breakwaters may attenuate wave action and thereby reduce beach erosion to some degree, the stable seawall, which will inhibit the natural movement of sand and water, will likely negate any benefits the breakwaters may provide.

- We do not consider Alternatives 3 and 6, which are limited to beach fill, to be viable options since both will likely result in the rapid loss of sand placed on the beach.

- We recommend a thorough analysis and discussion of a seventh alternative that involves the installation of detached breakwaters to attenuate wave action, but excludes the seawall extension and beach fill options, and considers limited retreat or removal of infrastructure that does not require a beachfront location.

Recommended items for discussion in the EIS:

- The impacts of sand mining at Blackfish Bank Shoal and unnamed shoal on erosion rates at Assateague Island and islands to the south including results from studies on this topic.

- All potential sand mining impacts on the aforementioned shoals' avifauna and to fishes and other wildlife species that forage on the shoals' benthos.

- Results from a compatibility analysis that examine how well the sand on the two offshore shoals matches the existing sand on the barrier islands (i.e., grain size, color, etc.).

- What level of protection each alternative will realistically offer and a full presentation of the analyses conducted to determine these protection levels. We recommend the analyses take into account sea level rise and the potential for future increases in storm activity and intensity.

- A detailed description of the beach fill design (i.e., targeted beach slope, elevation and width to be maintained over the long term).

- A thorough analysis and discussion of potential impacts each alternative poses on the islands to the south of the project area, with a special focus on Assawoman, Metompkin and Cedar islands.

- A detailed description of a post-construction beach monitoring plan. This plan should present methods for measuring changes to island shorelines over time. We strongly recommend that the monitoring plan not be confined to Assawoman Island, but that it also include, at a minimum, Metompkin and Cedar islands.

- A threshold at which NASA considers the cost of the project to outweigh the benefits to NASA's mission and goals. The cost/benefit analysis should not only examine monetary costs, but should also take into account costs to fish and wildlife resources, the physical integrity of the barrier island chain, and other stakeholder interests.

- The availability of funding for typical renourishment in the long term since, according to the SRIPP scoping document, beach renourishment is key to the project's success.

- Consultations with National Marine Fisheries Service regarding potential impacts of hopper dredging on sea turtles.

We appreciate the opportunity to provide comments regarding the development of the EIS for the SRPP at NASA Wallops Flight Facility. Please contact me or Amy Ewing at 804-367-6913 if we can be of further assistance.

Sincerely,

Raymond Fernald, Manager
Nongame and Environmental Programs

Encl: Literature Cited

Cc: David Whitehurst, VDGIF Wildlife Bureau Director

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COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

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(804) 786-2556 FAX (804) 371-7899

MEMORANDUM

DATE: March 19, 2010

TO: Anne Pinion, DEQ

FROM: Roberta Rhur, Environmental Impact Review Coordinator *for* John Davy, Division Director, Planning and Recreational Resources

SUBJECT: DEQ 10-019F Wallops Island Shoreline Protection, Accomack CO

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, this site is located within the North Wallops Island Conservation 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. North Wallops Island 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 is:

Piping Plover	Charadrius melodus	G3/S2B, S1N/LT/LT

The Piping Plover inhabits coastal areas, utilizing the flat, sandy beaches of barrier islands for breeding (Cross, 1991). Threats to this species include predation of eggs and young and the development and disturbance of barrier island breeding sites (Cross, 1991). Please note that this species is listed as threatened by the United States Fish and Wildlife Service (USFWS) and the Virginia Department of Game and Inland Fisheries (VDGIF).

Additionally the site is also within the North Assawoman; South Wallops Island Conservation Site. The North Assawoman; South Wallops Island 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:

Piping Plover	Charadrius melodus	G3/S2B, S1N/LT/LT
Least Tern	Sterna antillarum	G4/S2B/NL/SC
Wilson's Plover	Charadrius wilsonia	G5/S1B/NL/LE

Wilson's Plover is a rare, short-term summer visitor along the lower Chesapeake Bay and the Atlantic Coast south of Cape Henry. The summer males have a thick black bill and a white breast with a single band while the females, young, and winter males are grayish brown to reddish brown (Bergstrom, 1991).

Wilson's Plover habitat consists of the upper portions of sandy beaches on barrier islands, usually within 30 m of dune vegetation. Requirements for nesting include suitable foraging sites nearby for chicks, usually mud or sand flats. Predatory threats include foxes, herring gulls, great black gulls, and fish crows who eat the eggs and young. Nesting habitats are lost to both natural processes such as erosion and coastal development, as well as human disturbance during the nesting season. Since the eggs are a pale tan or buff with irregular black specks, they blend easily into the sand which allows for them to be overlooked by unsuspecting beach visitors who crush them. Recommendations for protecting these birds consist of predator control measures involving protection from predators for nests and discouraging development on the nesting islands. Wilson's Plover is protected under the Migratory Bird Treaty Act (Bergstrom, 1991).

The Least Tern nests on broad, flat beaches with minimal vegetation and forages in saltwater near the shore. Threats to this species include loss of nesting habitat due to development and disturbance of breeding colonies by human activities and high numbers of predators (Beck, 1991). Please note that the Least Tern is listed as a special concern species by the Virginia Department of Game and Inland Fisheries (VDGIF).

Due to the legal status of the Piping Plover and Wilson's Plover,DCR recommends coordination with the VDGIF and USFWS to ensure compliance with protected species legislation. DCR also recommends the protection of rare bird habitat (Least tern, Wilson's plover, and Piping plover) during the nesting season from April 15th to August 15th. Additionally, the source for beach nourishment should be limited to the sand shoals (Unnamed Shoal A or Unnamed Shoal B) located offshore in Federal waters and not from the Piping plover habitat on the north end of Wallops Island. Please note, DCR continues to be concerned in regards to the effects of the shoreline hardening on the islands downdrift of the project area including The Nature Conservancy and DCR properties.

Alternative One (Preferred Alternative) would be DCR's preferred alternative provided sand is not taken from the beach on the north end of Wallops Island and the proposed seawall extension is limited to the minimum length absolutely necessary for the protection of the facility. The absence of groin or breakwater for this alternative makes it less likely to disrupt sand transport for resources located to the south of the project area. DCR continues to recommend exploring the feasibility of inland relocation of existing facilities.

Our files do not indicate the presence of any 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 Virginia Department of Conservation and Recreation (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 contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

The Virginia Department of Game and Inland Fisheries 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 Shirl Dressler at (804) 367-6913.

Division of Chesapeake Bay Local Assistance

Federal actions on installations located within Tidewater Virginia are required to be consistent with the performance criteria of the Regulations on lands analogous to locally designated Chesapeake Bay Preservation Areas. CBPAs are comprised of a Resource Protection Area (RPA) and Resource Management Area (RMA). RPAs include tidal shores, tidal wetlands, non-tidal wetlands connected by surface flow and contiguous to tidal wetlands or water bodies with perennial flow, and a 100-foot buffer located landward of these features. RMAs include land types that, if improperly used or developed, have a potential for causing significant water quality degradation or for diminishing the functional value of the RPA. The project's preferred alternative would consist of the installation of about 4600 feet of additional seawall along with beach fill along the shoreline of the Atlantic Ocean on Wallops Island in northern Accomack County. The installation of some of the sand fill would likely occur in areas that appear to be below mean low water, and outside of the jurisdiction of the Chesapeake Bay Preservation Act. The Bay Act applies to areas landward of mean low water. However, the placement of some of the fill and the extension of the seawall would be located above mean low water which results in impacts to areas analogous to RPAs. Shoreline erosion control is a permitted activity in RPAs, provided it conforms to erosion and sediment control for any land disturbances that exceed 2,500 square feet and occurs with the appropriate state and federal permits. As long as these requirements are met, we concur that the preferred proposed activity would be consistent with the *Chesapeake Bay Preservation Act & Regulations.*

Division of Soil and Water Conservation

The applicant and their authorized agents conducting regulated land disturbing activities on private and public lands in the state must comply with the Virginia Erosion and Sediment Control Law and Regulations (VESCL&R), Virginia Stormwater Management Law and Regulations including coverage under the general permit for stormwater discharge from construction activities, and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act-Section 313, Federal Consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbance activities that result in the land-disturbance of greater than 2,500 square feet would be regulated by VESCL&R. Accordingly, the applicant must prepare and implement erosion and sediment control (ESC) plan to ensure compliance with state law and regulations. The ESC plan is submitted to the DCR Regional Office that serves the area where the project is located for review for compliance. The applicant

is ultimately responsible for achieving project compliance through oversight of on site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy. [Reference: VESCL §10.1-567;].

General Permit for Discharges of Stormwater from Construction Activities in CBPA:
The operator or owner of construction activities involving land disturbing activities equal to or greater than 2,500 square feet in areas designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations adopted pursuant to the Chesapeake Bay Preservation Act are required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project specific stormwater pollution prevention plan (SWPPP). The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit and the SWPPP must address water quality and quantity in accordance with the Virginia Stormwater Management Program (VSMP) Permit Regulations. General information and registration forms for the General Permit are available on DCR's website at
http://www.dcr.virginia.gov/soil_and_water/index.shtml
[Reference: Virginia Stormwater Management Law Act §10.1-603.1 et seq.; VSMP Permit Regulations §4VAC-50 et seq.]

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

Cc: Amy Ewing, VDGIF
Tylan Dean, USFWS

Literature Cited:

Bergstrom, P.W. 1991. Wilson's Plover. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. pp.502-503.

Beck, R. A. 1991. Least Tern. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. pp. 505-506.

Cross, R.R. 1991. Piping Plover. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. pp. 501-502.

U.S. Fish and Wildlife, Northern Florida Office. Loggerhead sea turtle. Decemeber 29, 2005. http://www.fws.gov/northflorida/SeaTurtles/Turtle%20Factsheets/loggerhead-sea-turtle.htm

Pinion, Anne (DEQ)

From: Sacks, David (DCR)
Sent: Tuesday, April 13, 2010 3:04 PM
To: Pinion, Anne (DEQ); Rhur, Robbie (DCR)
Cc: Smith, Shawn (DCR)
Subject: RE: 10-019F SRIPP at Wallops Island

Anne and Robbie:

As a follow-up to a discussion between Anne, Julia, Ellie and myself earlier this afternoon, I would like to modify the comments this Division submitted to Robbie on February 24, 2010 regarding the above referenced project.

We recently determined that Wallops Island is in a portion of Accomack County that has not been designated as a Chesapeake Bay Preservation Area. When the County amended its ordinance to expand its Chesapeake Bay Preservation Area (CBPA) to the ocean side of the County in February 2009, the definition of these areas in the County ordinance references the official zoning map. That map, specifically excludes federal lands on the ocean side of the County, including Wallops Island.

Generally, when a locality does not map CBPAs on federal lands, they are still subject to the requirements of the Bay Act Regulations as they contain lands analogous to RPAs and/or RMAs. However, In the case of Wallops Island because these lands are located in a part of a county not required to be included as part of a Chesapeake Bay Preservation Area (outside the Bay watershed) they are not subject to the requirements of the regulations.

Consequently, regarding DEQ 10-019F, we have no comments

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street, Suite 326
Richmond, Virginia 23219-2010
(804) 786-2556 FAX (804) 371-7899

Revised April 14 **MEMORANDUM**

DATE: ~~March 19~~, 2010

TO: Anne Pinion, DEQ

FROM: Roberta Rhur, Environmental Impact Review Coordinator *for* John Davy, Division Director, Planning and Recreational Resources

SUBJECT: DEQ 10-019F Wallops Island Shoreline Protection, Accomack CO

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, this site is located within the North Wallops Island Conservation 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. North Wallops Island 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 is:

Piping Plover	Charadrius melodus	G3/S2B, S1N/LT/LT

The Piping Plover inhabits coastal areas, utilizing the flat, sandy beaches of barrier islands for breeding (Cross, 1991). Threats to this species include predation of eggs and young and the development and disturbance of barrier island breeding sites (Cross, 1991). Please note that this species is listed as threatened by the United States Fish and Wildlife Service (USFWS) and the Virginia Department of Game and Inland Fisheries (VDGIF).

Additionally the site is also within the North Assawoman; South Wallops Island Conservation Site. The North Assawoman; South Wallops Island 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:

Piping Plover	Charadrius melodus	G3/S2B, S1N/LT/LT
Least Tern	Sterna antillarum	G4/S2B/NL/SC
Wilson's Plover	Charadrius wilsonia	G5/S1B/NL/LE

Wilson's Plover is a rare, short-term summer visitor along the lower Chesapeake Bay and the Atlantic Coast south of Cape Henry. The summer males have a thick black bill and a white breast with a single band while the females, young, and winter males are grayish brown to reddish brown (Bergstrom, 1991).

Wilson's Plover habitat consists of the upper portions of sandy beaches on barrier islands, usually within 30 m of dune vegetation. Requirements for nesting include suitable foraging sites nearby for chicks, usually mud or sand flats. Predatory threats include foxes, herring gulls, great black gulls, and fish crows who eat the eggs and young. Nesting habitats are lost to both natural processes such as erosion and coastal development, as well as human disturbance during the nesting season. Since the eggs are a pale tan or buff with irregular black specks, they blend easily into the sand which allows for them to be overlooked by unsuspecting beach visitors who crush them. Recommendations for protecting these birds consist of predator control measures involving protection from predators for nests and discouraging development on the nesting islands. Wilson's Plover is protected under the Migratory Bird Treaty Act (Bergstrom, 1991).

The Least Tern nests on broad, flat beaches with minimal vegetation and forages in saltwater near the shore. Threats to this species include loss of nesting habitat due to development and disturbance of breeding colonies by human activities and high numbers of predators (Beck, 1991). Please note that the Least Tern is listed as a special concern species by the Virginia Department of Game and Inland Fisheries (VDGIF).

Due to the legal status of the Piping Plover and Wilson's Plover,DCR recommends coordination with the VDGIF and USFWS to ensure compliance with protected species legislation. DCR also recommends the protection of rare bird habitat (Least tern, Wilson's plover, and Piping plover) during the nesting season from April 15th to August 15th. Additionally, the source for beach nourishment should be limited to the sand shoals (Unnamed Shoal A or Unnamed Shoal B) located offshore in Federal waters and not from the Piping plover habitat on the north end of Wallops Island. Please note, DCR continues to be concerned in regards to the effects of the shoreline hardening on the islands downdrift of the project area including The Nature Conservancy and DCR properties.

Alternative One (Preferred Alternative) would be DCR's preferred alternative provided sand is not taken from the beach on the north end of Wallops Island and the proposed seawall extension is limited to the minimum length absolutely necessary for the protection of the facility. The absence of groin or breakwater for this alternative makes it less likely to disrupt sand transport for resources located to the south of the project area. DCR continues to recommend exploring the feasibility of inland relocation of existing facilities.

Our files do not indicate the presence of any 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 Virginia Department of Conservation and Recreation (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 contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

The Virginia Department of Game and Inland Fisheries 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 Shirl Dressler at (804) 367-6913.

Division of Soil and Water Conservation

The applicant and their authorized agents conducting regulated land disturbing activities on private and public lands in the state must comply with the Virginia Erosion and Sediment Control Law and Regulations (VESCL&R), Virginia Stormwater Management Law and Regulations including coverage under the general permit for stormwater discharge from construction activities, and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act-Section 313, Federal Consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbance activities that result in the land-disturbance of equal to or greater than 10,000 square feet would be regulated by VESCL&R. Accordingly, the applicant must prepare and implement erosion and sediment control (ESC) plan to ensure compliance with state law and regulations. The ESC plan is submitted to the DCR Regional Office that serves the area where the project is located for review for compliance. The applicant is ultimately responsible for achieving project compliance through oversight of on site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy. [Reference: VESCL §10.1-567;].

The operator or owner of construction activities involving land disturbing activities equal to or greater than one acre are required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project specific stormwater pollution prevention plan (SWPPP). Construction activities requiring registration also includes the land-disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan of development will ultimately disturb equal to or greater than one acre. The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit and the SWPPP must address water quality and quantity in accordance with the Virginia Stormwater Management Program (VSMP) Permit Regulations. General information and registration forms for the General Permit are available on DCR's website at
http://www.dcr.virginia.gov/soil_and_water/index.shtml
[Reference: Virginia Stormwater Management Law Act §10.1-603.1 et seq.; VSMP Permit Regulations §4VAC-50 et seq.]

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

Cc: Amy Ewing, VDGIF
Tylan Dean, USFWS

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Bergstrom, P.W. 1991. Wilson's Plover. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. pp.502-503.

Beck, R. A. 1991. Least Tern. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. pp. 505-506.

Cross, R.R. 1991. Piping Plover. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. pp. 501-502.

U.S. Fish and Wildlife, Northern Florida Office. Loggerhead sea turtle. Decemeber 29, 2005. http://www.fws.gov/northflorida/SeaTurtles/Turtle%20Factsheets/loggerhead-sea-turtle.htm

COMMONWEALTH of VIRGINIA

L. Preston Bryant, Jr.
Secretary of Natural Resources

Department of Historic Resources
2801 Kensington Avenue, Richmond, Virginia 23221-0311

Kathleen S. Kilpatrick
Director

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TDD: (804) 367-2386
www.dhr.virginia.gov

March 16, 2010

Mr. Josh Bundick
NEPA Manager
NASA Goddard Space Flight Center, Wallops Flight Facility
Wallops Island, VA 23337

Re: Proposed Shoreline Restoration and Infrastructure Protection Program (SRIPP)
Wallops Island, Accomack County
DHR File #: 2007-0087
Date Received: February 17, 2010

Dear Mr. Bundick:

We have received information regarding our review of the above referenced undertaking, including a copy of the report DRAFT *Programmatic Environmental Impact Statement, Wallops Flight Facility Shoreline Restoration and Infrastructure Protection Program* (URS: 2010).

Based upon the information provided, we concur with your determination that the Proposed Alternatives 1, 2, and 3 will *not adversely affect any historic properties*. In the event that previously unrecorded historic properties are discovered during project activities, stop work in the area and contact DHR immediately.

If you have any questions about our comments, please contact me at: ron.grayson@dhr.virginia.gov or (804) 367-2323, Ext. 105.

Sincerely,

Ronald Grayson, RPA, Archaeologist
Office of Review and Compliance

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Pinion, Anne (DEQ)

From: Forsgren, Diedre (VDH)
Sent: Friday, March 19, 2010 10:50 AM
To: Pinion, Anne (DEQ); Joshua.A.Bundick@nasa.gov
Cc: Matthews, Barry (VDH)
Subject: (10-019F) EIS/CD: Shoreline Restoration and Infrastructure Protection Program, NASA

DEQ Project #:	10-019F
Name:	Shoreline Restoration and Infrastructure Protection Program
Sponsor:	National Aeronautics and Space Administration
Location:	Accomack County

VDH – Office of Drinking Water has reviewed DEQ Project Number 10-019F. Below are our comments as they relate to proximity to **public drinking water** sources (groundwater wells, springs and surface water intakes). Potential impacts to public water distribution systems or sanitary sewage collection systems must be verified by the local utility.

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

No surface water intakes are located within 5 miles radius of the project site.

Project does not fall within Zone 1 or Zone 2 of any public surface water sources.

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

Diedre Forsgren
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