

Appendix D
Agency Consultation

Appendix G

USFWS Section 7 Consultation

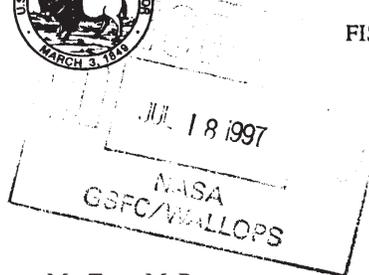


United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
P.O. Box 99
6669 Short Lane
Gloucester, Virginia 23061

July 14, 1997



Mr. Terry M. Potterton
National Aeronautics and Space Administration
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, Virginia 23337-5099

Colonel Robert H. Reardon, Jr.
U.S. Army Corps of Engineers
803 Front Street
Norfolk, Virginia 23510-1096

Re: Range Operations Expansion at
Wallops Flight Facility, Accomack
County, Virginia

Gentlemen:

The U.S. Fish and Wildlife Service (Service) has reviewed the National Aeronautics and Space Administration's (NASA) proposal to expand range operations at Wallops Flight Facility, Accomack County, Virginia. NASA's April 22, 1997 request for formal consultation was received on April 22, 1997. This document represents the Service's biological opinion on the effects of that action on the piping plover (*Charadrius melodus*), federally listed threatened, in accordance with Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). A complete administrative record of this consultation is on file in this office.

I. CONSULTATION HISTORY

- 02-27-97 The Service received a copy of the Environmental Assessment for Range Operations Expansion at the NASA Goddard Space Flight Center's Wallops Flight Facility with a cover letter requesting our review regarding federally listed species.
- 04-09-97 The Service sent a letter to NASA providing comments on the Environmental Assessment and indicated that the project, as proposed, may affect the piping plover.

- Mr. Potterton and Colonel Reardon 2
- 04-22-97 The Service met with NASA, the Virginia Department of Game and Inland Fisheries (VDGIF), and the Virginia Commercial Space Flight Authority to discuss the proposed project. NASA provided the Service with a letter regarding their estimate of the piping plover habitat to be impacted by the proposed project.
- 04-22-97 The Service received NASA's request to initiate formal consultation.
- 05-06-97 The Service sent a letter to the Corps indicating that NASA had requested formal consultation and no Corps' permits should be issued for this project until formal consultation has been completed.

II. BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

NASA proposes to enhance national launch capabilities through improvements to infrastructure and expansion of launch range capabilities. The major actions include: (1) establishment of a commercial Spaceport, (2) improvements to infrastructure to support a commercial Spaceport, (3) expanding launch operations to accommodate twelve orbital launches per year, and (4) restoration of the historical level and nature of operations at Wallops Flight Facility. The only action that may affect the piping plover is the use of launch pad 0-B. Construction of launch pad 0-B is proposed and will be used in conjunction with the existing launch pad 0-A to launch no more than twelve orbital launches per year from Wallops Flight Facility in Accomack County, Virginia (Figure 1). NASA has stated that a minimum of 60 to 90 days is required to prepare for a single launch event at one of the two pads.

Pad 0-B will be 19,000 square feet with a 170 foot high service tower. Other equipment will also be attached to this pad to facilitate launch operations. This facility would support the launching of expendable launch vehicles capable of placing small-to-medium payloads into orbit. Vehicle and payload handling within the pad and service tower area will be accomplished by a 75-ton capacity bridge crane. The proposed construction site will impact 1,315 square meters (m) (approximately 1/3 acre) of wetlands. The entire island is located within the 100-year flood plain. As part of the project, NASA has agreed to monitor piping plovers. The monitoring plan is in Appendix A.

Damage to local biological resources resulting from launch activities can be anticipated within a 1,000 m radius of the launch pad. The principal impacts radiate approximately 200 to 300 m within the combustion path. Searing of vegetation and injury or death to fauna can occur within this zone. Interruption of faunal activities is expected within a 1,000 m radius of the launch pad for 2 to 10 minutes during launch operations. The combustion products and initial sound blast will be directed toward the Atlantic Ocean. Launches may be conducted during any time of the year and any time of the day or night.

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RANGEWIDE STATUS OF THE SPECIES

Life History

Piping plovers are small beige and white shorebirds with a black band across their breast and forehead. They typically feed on small invertebrates within intertidal surf zones, mud flats, tidal pool edges, barrier flats, and sand flats. The nesting season typically lasts from late April to late July. The nest is a shallow depression in the sand, typically lined with bits of broken seashells or fine pebbles. Incubation lasts for 26 to 30 days and is shared equally by both adults. The chicks leave the nest within hours of hatching and begin feeding on their own as soon as they can stand. Chicks are defended by the adults and can fly after 28 to 35 days. A more detailed and comprehensive description of the life history of the plover is provided in the recovery plan (U.S. Fish and Wildlife Service 1996).

Status of the Species Within its Range

Piping plovers occur in three disjunct populations in North America: Northern Great Plains, Great Lakes, and Atlantic Coast. The Atlantic Coast piping plover breeds on coastal beaches from Newfoundland to North Carolina (and occasionally South Carolina) and winters along the coast from North Carolina south, along the Gulf Coast and in the Caribbean (U.S. Fish and Wildlife Service 1996). The recovery plan divides the Atlantic Coast population into four recovery units: Atlantic Canada, New England, New York-New Jersey, and Southern (Delaware, Maryland, Virginia, and North Carolina).

Since 1986, the Atlantic Coast population has increased from 790 pairs to 1,347 pairs in 1996. However, most of the apparent increase between 1986 and 1989 is attributable to increased survey effort in two states. In addition, the population increase between 1989 and 1995 was very unevenly distributed. Between 1989 and 1995, the New England subpopulation increased by 346 pairs, while the New York-New Jersey and the Southern subpopulations gained 82 and 16 pairs, respectively, and the Atlantic Canada population decreased by 34 pairs. Substantially higher productivity rates have also been observed in New England than elsewhere in the Atlantic Coast population's range. In 1996, all recovery units either declined or increased less than expected based on 1995 productivity data. The Southern recovery unit declined 13% between 1995 and 1996. This is significant because the recovery plan ties recovery of the species to improved status of all four recovery units. The relative lack of recovery of the Southern subpopulation has heightened concern over any proposed activities which would further impede recovery in this area. Recovery of the Atlantic Coast piping plover population is occurring in the context of an extremely intensive protection effort now being implemented on an annual basis. Pressure on Atlantic Coast beach habitat from development and human disturbance is pervasive and unrelenting, and the species is sparsely distributed (U.S. Fish and Wildlife Service (1996).

In Virginia, piping plovers nest in Accomack and Northampton Counties on the barrier islands and on beaches in the Cities of Hampton and Portsmouth. Between 1989 and 1991, the number

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of piping plover pairs in Virginia increased from 100 to 131. In 1992, the number of nesting pairs was 97, and since then there have been serious population fluctuations. In 1996, only 87 pairs of plovers were documented. Annual productivity (numbers of chicks fledged/pair) has fluctuated widely, but was relatively high in 1996.

Threats to the Species

Loss and degradation of habitat due to development and shoreline stabilization have been major contributors to the species' decline. Disturbance by humans and pets often reduces the functional suitability of habitat and causes direct and indirect mortality of eggs and chicks. Predation has also been identified as a major factor limiting piping plover reproductive success at many Atlantic Coast sites. Substantial evidence shows that human activities are affecting types, numbers, and activity patterns of predators, thereby exacerbating natural predation (U.S. Fish and Wildlife Service 1996). A more detailed and comprehensive description of threats to the plover is provided in the recovery plan (U.S. Fish and Wildlife Service 1996).

Recovery Goals and Accomplishments

The Atlantic Coast population of the piping plover was listed as threatened in 1986. The primary recovery objective is to remove the Atlantic Coast plover population from the list of Endangered and Threatened Wildlife and Plants by achieving well-distributed increases in numbers and productivity of breeding pairs and providing for long-term protection of breeding and wintering plovers and their habitat. Delisting may be considered when the following criteria have been met: (1) increase and maintain for 5 years a total of 2,000 breeding pairs distributed among four recovery units as follows--Atlantic Canada, 400 pairs; New England 525 pairs; New York-New Jersey, 575 pairs; Southern, 400 pairs; (2) verify the adequacy of a 2,000-pair population to maintain heterozygosity and allelic diversity over the long-term; (3) achieve five-year average productivity of 1.5 fledged chicks per pair in each recovery unit, based on data from sites that collectively support at least 90% of the recovery unit's population; (4) institute long-term agreements to assure protection and management sufficient to maintain the population targets and average productivity in each recovery unit; and (5) ensure long-term maintenance of wintering habitat, sufficient in quantity, quality, and distribution to maintain survival rates for a 2,000-pair population. At the present time, these criteria are not close to being accomplished.

ENVIRONMENTAL BASELINE

As defined in 50 CFR 402.02 "action" means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by federal agencies in the United States or upon the high seas. The "action area" is defined as all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. The direct and indirect effects of the actions and activities resulting from the federal action must be considered in conjunction with the effects of other past and present federal, state, or private activities, as well as the cumulative effects of reasonably certain future state or private activities within the action area.

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The Service has determined that the action area for this project is the portion of Wallops Island within 1,207 m (0.75 miles) south of launch pad 0-B.

Status of the Species in the Action Area - Piping plovers have nested at the north and south end of Wallops Island. The plover nesting area on the north end of the island is approximately 7 kilometers from the proposed project site. No impacts are expected to occur to the plovers at the north end of the island and only concerns related to plovers at the south end of the island will be addressed. Information about the plover at the southern end of the island is detailed below.

Wallops Island (Southern End) Piping Plover Data

Year	# Pairs	# Young Fledged	Comments
1986	2	0	
1987	2	3	
1988	0	0	
1989	5	unknown	
1990	5	unknown	
1991	3	unknown	
1992	4	5	1.25 young fledged/pair
1993	3	4	1.33 young fledged/pair
1994	3	2	0.67 young fledged/pair
1995	2	4	2.00 young fledged/pair
1996	1	0	Initial nest and renesting attempt both lost to predation by red fox.

Suitable plover nesting habitat at the southern end of the island was mapped and measured before and after the storms of 1991-1992. There was a 77% increase in the amount of nesting habitat available between years. Despite the increase in available habitat, there was no significant increase in numbers of nesting piping plovers, and their distribution throughout the available habitat remained similar to previous years, suggesting that birds were not available to colonize the newly created habitat (VDGIF 1992-1993). At the present time, the habitat at the southern end of Wallops is becoming less suitable due to encroaching vegetation (B. Cross, VDGIF, pers. comm. 1997; VDGIF 1995-1996).

The plover nesting and foraging area at the south end of the island is approximately 1,087 m from the proposed launch pad. Therefore, it is estimated that only the small portion (approximately

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400 square meters) of existing plover habitat within the action area will be affected by launches at pad 0-B.

Effects of the Action - No information is available on the effects of rocket launches on foraging and nesting shorebirds. The most similar action for which Service has such information relates to fireworks displays (U.S. Fish and Wildlife Service 1997). Direct impacts to plovers from fireworks early in the breeding season may cause plovers to abandon their territories. Plovers will often abandon their nests and broods during fireworks displays, exposing eggs and chicks to weather and predators. If a flightless chick were to become permanently separated from its parents during the confusion, mortality is almost certain. Abandonment of colonies as a result of fireworks has been documented in other colonial-nesting birds. For example, a fireworks display in New Jersey caused permanent abandonment of a least tern (*Sterna antillarum*) colony located more than 250 m away. In addition, temporary abandonment and displays of distress were documented in a least tern colony located greater than 0.75 miles from a fireworks event. The Service's guidance (U.S. Fish and Wildlife Service 1997) recommends that fireworks launch sites be located at least 0.75 miles from the nearest piping plover nesting and/or foraging area.

Direct impacts to the piping plover from the construction of the proposed rocket launch facility are not anticipated because of the distance (1,087 m) from launch pad to the nesting/foraging area. The piping plover may be adversely affected by the noise and light associated with rocket launches. NASA has estimated actual launch operations will last from 2 to 10 minutes. Because no data specific to this type of activity is available, it is difficult to anticipate how plovers will be affected. The Service anticipates that between March 1 and September 15 of any year, depending on the time of year, time of day, and proximity to the launch site, plovers will temporarily abandon the area during migration and/or the breeding season. While temporary abandonment of eggs or chicks does increase the chances of predation and exposure to the elements, actual mortality or reduced productivity is very unlikely. Similarly, a brief interruption in foraging will not result in significant impacts. The Service anticipates minimal impacts to the plover because of the short duration of the disturbance, the long distance between the disturbance and the area used by plovers, the limited number of launches during the nesting season, and the lack of other disturbances (e.g., recreation) to the plovers at this site.

Cumulative Effects - Cumulative effects include the effects of future state, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the ESA. The Service is not aware of any cumulative effects.

CONCLUSION

After reviewing the current status of the piping plover throughout its range and in the action area, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is the Service's biological opinion that construction and use of launch pad 0-

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B, as proposed, is not likely to jeopardize the continued existence of the piping plover. No critical habitat has been designated for this species, therefore, none will be affected.

III. INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of the ESA, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns, which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the federal agency or applicant. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

AMOUNT OR EXTENT OF TAKE

The Service does not anticipate the proposed action will incidentally take any piping plovers due to the short duration of the disturbance, the distance between the launch pad and the plover nesting/foraging area, the limited number of launches that are likely to occur during the nesting season, and the lack of other disturbances (e.g., recreation).

IV. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to further minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans and other recovery activities, or to develop information to benefit the species. The Service recommends that following be implemented by NASA:

- o Whenever possible, conduct launches during daylight hours.
- o Provide more substantial fencing at the perimeter of piping plover use areas at the north and south ends of island to prevent human intrusion.
- o Post the fenced areas with "sensitive wildlife area" signs.
- o Close the piping plover use areas from March 1 through September 15 of every year to discourage human intrusion.

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- o Piping plover nests should be protected with predator exclosures upon completion of the clutch.

In order for the Service to be kept informed of actions that minimize or avoid adverse effects or benefit listed species or their habitats, the Service requests notification of the implementation of any of these conservation recommendations by NASA.

V. REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the action outlined in the NASA request. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If this opinion does not contain national security or confidential business information, the Service will provide copies to the appropriate state natural resource agencies ten business days after the date of this opinion.

The Service appreciates this opportunity to work with NASA and the Corps in fulfilling our mutual responsibilities under the ESA. Please contact Cindy Schulz of this office at (804) 693-6694, extension 127, if you require additional information.

Sincerely,



Karen L. Mayne
Supervisor
Virginia Field Office

Enclosures

LITERATURE CITED

- U.S. Fish and Wildlife Service. 1996. Piping plover (*Charadrius melodus*), Atlantic Coast Population, Revised Recovery Plan. Hadley, MA. 258pp.
- U.S. Fish and Wildlife Service. 1997. Guidelines for managing fireworks in the vicinity of piping plovers and seabeach amaranth on the U.S. Atlantic Coast. Unpublished Report. Hadley, MA. 5pp.
- Virginia Department of Game and Inland Fisheries. 1992-1993. Annual report nongame and endangered wildlife program. Richmond, VA.
- Virginia Department of Game and Inland Fisheries. 1995-1996. Annual report nongame and endangered wildlife program. Richmond, VA.

APPENDIX A

NASA PIPING PLOVER MONITORING PLAN FOR ROCKET LAUNCHES FROM PAD 0-B
WALLOPS ISLAND, VIRGINIA

1. Monitoring of piping plovers at the south end of Wallops Island will occur during the first three launches from launch pad 0-B that take place between March 1 and September 15. Depending on the results of the surveys, additional years of monitoring may be required at the discretion of the Service. Monitoring will be conducted daily for 7 consecutive days prior to a launch, during the launch (as dictated by human safety considerations), and for 7 consecutive days after the day of the launch. If it is not possible to monitor during the launch, monitoring will occur immediately before and after the launch. Monitoring should occur twice daily, early in the morning and late in the evening. Each monitoring event should be no longer than one hour and should only be as long as is required to collect the data listed below. A delay of the launch date may require additional monitoring. Each monitoring event will include:
 - o A detailed, to scale, map indicating the location of plovers and their nests in relation to the launch pad.
 - o Counts and locations of chicks.
 - o Habitat description of the areas utilized by the plover and in immediate vicinity of each nest.
 - o Dates for laying of each egg, if observed.
 - o Dates for loss of any chicks.
 - o Indices of predator abundance (presence or absence at the nest, track counts, etc.).
 - o Documentation of any sources of additional disturbance.
 - o Eggs counts per nest.
 - o Behavior of individual plovers (e.g., foraging, brooding, leaving area). This will include determining the frequency of incubation and causes and duration of any interruption to incubation or chick foraging.
 - o If pre-fledged young are present, their movements (foraging area and distance and direction moved from nest) should be plotted throughout the monitoring period.
 - o Peck rates should be measured for pre-fledged young during five-minute observation periods conducted during each monitoring event. The number of observation periods sufficient for analysis should be determined by the observer.
 - o On each data sheet, the following information should be recorded: date, start/stop time of observations, observer's name, weather conditions (e.g., raining, sunny), and temperature.
 - o The above information should also be recorded for Wilson's plovers to increase the sample size.

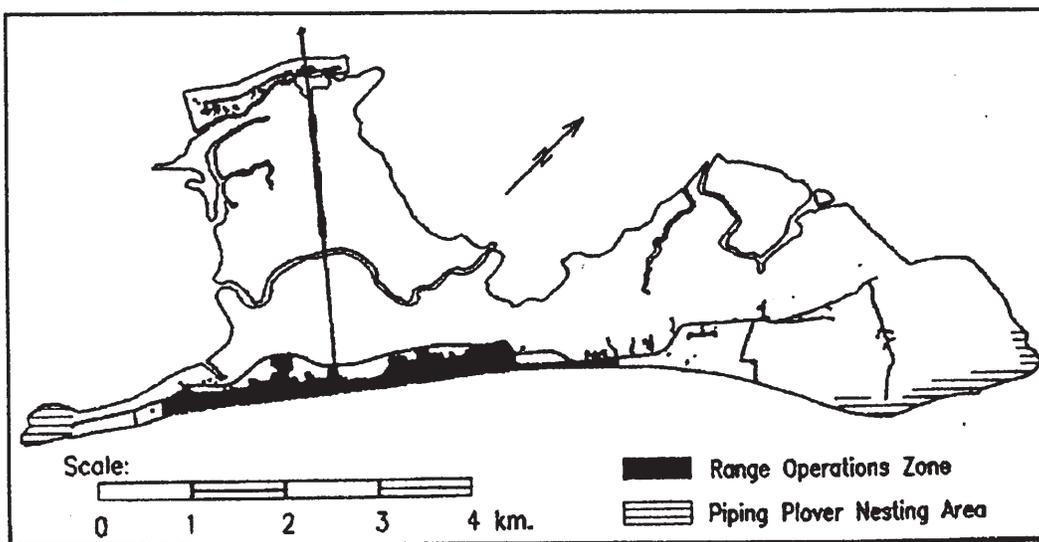
2. A summary report along with copies of any field notes will be submitted to the Service, at the address provided below, within 10 days of the last day of monitoring for each launch event. Monitoring will be conducted by an individual approved by the Service and the

VDGIF. The name and qualifications of the individual must be provided to the Service at least 90 days before the first day of monitoring for the first launch event to be monitored.

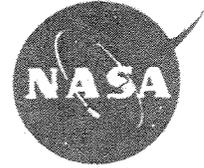
3. Within 30 days of providing the Service with the monitoring report for the third launch taking place between March 1 and September 15, NASA will contact the Service to arrange a meeting to discuss the necessity, duration, and intensity of additional monitoring.
4. All information to be provided to the Service should be sent to:

Virginia Field Office
U.S. Fish and Wildlife Service
P.O. Box 99
6669 Short Lane
Gloucester, VA 23061
Phone (804) 693-6694
Fax (804) 693-9032

Figure 1. Location of the National Aeronautics and Space Administration's Proposed Launch Pad 0-B and Piping Plover Use Area on Wallops Island in Accomack County, Virginia.



National Aeronautics and
Space Administration
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337-5099



Reply to Attn of 205.W

February 27, 1998

United States Department of the Interior
Fish and Wildlife Service
Ecological Services
Attn: Ms. Cindy Schulz
P.O. Box 99
Gloucester, VA 23061

Subject: Beach Closure Dates for the Endangered Piping Plover at the National Aeronautics and Space Administration Goddard Space Flight Center's Wallops Flight Facility (NASA GSFC's WFF), Wallops Island, VA

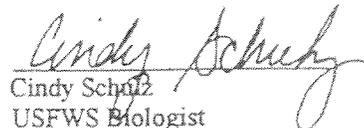
- Ref: (a) Telecons between C. Schulz/U. S. Fish and Wildlife Service (USFWS), Bob Cross/Virginia Department of Game and Inland Fisheries (VDGIF), and John C. Brinton/NASA on 2/20/98, and 2/25/98
(b) USFWS Biological Opinion for Range Operations Expansion at WFF, dated 7/14/97

During reference (a) telephone conversations, it was agreed to close the north and south ends of Wallops Island's beaches from March 15 through September 15 to help protect the piping plover. This is a change to Section IV. Conservation Recommendations in the reference (b) Biological Opinion for Range Operations Expansion at WFF, which specifies "close the piping plover use areas from March 1 through September 15 of every year to discourage human intrusion." According to Bob Cross of the VDGIF, piping plover nesting activity should begin on Wallops Island after March 15.

It was also agreed that NASA could conduct year round open burn/open detonation (OB/OD) of rocket motors. The OB/OD facility is just north of the fencing, at the perimeter of the piping plover use area, at the south end of Wallops Island.

Please contact John C. Brinton, Environmental Protection Specialist, at 757-824-1327 with any questions or comments.


William B. Bott
Environmental Group Leader

Concurrence: 
Cindy Schulz
USFWS Biologist

cc:
VDIGF/Mr. B. Cross

Approved: 
Supervisor
Virginia Field Office
3/10/98



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

MAY 18 2009

Joshua A. Bundick
National Aeronautics and Space Administration
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, Virginia 23337
Attn: 250.W

Dear Mr. Bundick,

This is in response to your letter dated April 23, 2009 regarding the Draft Environmental Assessment (EA) for the proposed expansion of the launch range at the Goddard Space Flight Center's Wallops Flight Facility (WFF). WFF is located in the northeastern portion of Accomack County, Virginia, on the Delmarva Peninsula, and is comprised of three separate land masses: the Main Base, Wallops Mainland, and Wallops Island. Mid Atlantic Regional Spaceport (MARS) facilities are located on Wallops Island and include Launch Complex 0, comprised of Launch Pads 0-A and 0-B. The National Aeronautics and Space Administration (NASA) has requested comments on the EA and its conclusion that the project will have no effect on any species listed as threatened or endangered by NOAA's National Marine Fisheries Service (NMFS).

Proposed Project

The proposed action is to expand an upgrade NASA and MARS facilities to support up to and including medium large class suborbital and orbital expendable launch vehicle launch activities from WFF. The site improvements to support launch operations include:

- Minor modifications to the boat dock on the north end of Wallops Island, including the installation of sheet pile (pile driving), additional fendering, and armor stone. Depths within the existing approach channel and boat basin are maintained to a depth of 4 feet at low tide;
- Construction of a dedicated Payload Fueling Facility (PFF), a facility dedicated to payload processing, and storage;
- Construction of new roads and minor upgrades to existing roads;
- Construction of a new launch complex in approximately the same location as the existing Pad 0-A, including a Liquid Fueling Facility (LFF); and
- Minor interior modifications to launch support facilities.

NMFS listed species in Project Area

Four species of federally threatened or endangered sea turtles under the jurisdiction of NMFS can be found seasonally in the coastal waters of Virginia from early May –November of each



year. Loggerhead (*Caretta caretta*), Kemp's ridley (*Lepidochelys kempi*), and green sea turtles (*Chelonia mydas*) are present in these waters mainly during late spring, summer and early fall when water temperatures are relatively warm. While federally endangered leatherback sea turtles (*Dermochelys coriacea*) may be found in the waters off Virginia during the same time frame as well, this species is unlikely to occur in the action area as it is typically found in deeper, more offshore waters.

Several studies have examined the seasonal distribution of sea turtles in the mid-Atlantic, including Virginia. Sea turtles begin appearing in nearshore habitats of the mid-Atlantic as water temperatures rise in the spring and remain throughout the warmer months. Sea turtles are typically found in Virginia when water temperatures are greater than 11°C. In early May, as water temperatures continue to rise farther northward, Kemp's ridleys and loggerheads begin to appear in Virginia (Morreale and Standora 2005). As temperatures decline in the fall, sea turtles leave their coastal habitats and join a larger contingent of other turtles migrating southward to overwinter (Morreale and Standora 2005, Musick and Limpus 1997). Studies summarized in Morreale and Standora (2005) indicate that loggerhead and Kemp's ridley sea turtles begin to appear in Virginia waters in May and begin leaving Virginia waters by the first week of November. Similar migratory patterns are expected for green and leatherback sea turtles (Shoop and Kenney 1992; Morreale 1999).

Conclusions

The proposed project involves several types of construction activities in order to improve launch operations. Of particular concern for the NMFS is the modifications proposed for the boat dock, specifically the installation of steel sheet piles which will require pile driving. Pile driving can cause an increase in underwater noise levels, as well as, an increase in suspended sediment, which can affect the hearing and behavior of marine species. As listed species of sea turtles are likely to occur in the proposed project area, effects to sea turtle species may result from the construction activities (i.e., pile driving) proposed for Goddard Space Flight Center's Wallops Flight Facility. As such, NMFS recommends that NASA initiate consultation pursuant to Section 7 of the Endangered Species Act (ESA) of 1973, as amended. NASA should submit a determination of effects along with justification for the determination and a request for concurrence to NMFS. If NASA determines that the project is "not likely to adversely affect" any listed species (i.e., when effects of the proposed project on listed species are expected to be discountable, insignificant or completely beneficial) and NMFS concurs with this determination, NMFS will reply to NASA in a letter that will convey the concurrence, thus completing Section 7 consultation. If the NASA determines that the project is "likely to adversely affect" any listed species (i.e., if any adverse effect to listed species may occur as a direct or indirect result of the proposed action and the effects are not: discountable, insignificant, or beneficial) or NMFS does not concur with the NASA's "not likely to adversely affect" determination, formal Section 7 consultation, resulting in the issuance of a Biological Opinion with an appropriate Incidental Take Statement, may be required. Any effects that amount to the take of a listed species (defined by the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct") are not discountable, insignificant or entirely beneficial. Therefore, if any take is anticipated, formal consultation is required. In addition, if other action agencies (i.e. Army Corps of Engineers) will be involved in the proposed

will be involved in the proposed project, effects of their actions should also be included with the information sent by NASA to NMFS. Should you have any questions about this correspondence please contact Danielle Palmer at (978) 282-8468 or by e-mail (Danielle.Palmer@Noaa.gov).

Sincerely,



Mary A. Colligan
Assistant Regional Administrator for
Protected Resources

Ec: Greene, F/NER4
O'Brien
Palmer

JMS 7/9/09



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

JUL - 8 2009

Joshua A. Bundick
National Aeronautics and Space Administration
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, Virginia 23337
Attn: 250.W

Dear Mr. Bundick,

This is in response to your letter dated May 28, 2009 regarding the proposed expansion of the launch range at the Goddard Space Flight Center's Wallops Flight Facility (WFF). WFF is located in the northeastern portion of Accomack County, Virginia, on the Delmarva Peninsula, and is comprised of three separate land masses: the Main Base, Wallops Mainland, and Wallops Island. Mid Atlantic Regional Spaceport (MARS) facilities are located on Wallops Island and include Launch Complex 0, comprised of Launch Pads 0-A and 0-B. In the Draft Environmental Assessment (EA) the National Aeronautics and Space Administration (NASA) made the preliminary determination that the proposed project will have no effect on any species listed as threatened or endangered. However, limited project details were available at the time of the Draft EA's issuance. Since then, as plans for the project have matured NASA has determined that proposed project may affect, but is not likely to adversely affect any species listed as threatened or endangered under the jurisdiction of NOAA's National Marine Fisheries Service (NMFS) and has requested that NMFS concur with this determination.

Proposed Project

The proposed action is to expand and upgrade WFF to support up to and including medium large class suborbital and orbital expendable launch vehicle launch activities from WFF. The site improvements to support launch operations include:

- Construction of a dedicated Payload Fueling Facility (PFF), a facility dedicated to payload processing, and storage;
- Construction of new roads and minor upgrades to existing roads;
- Construction of a new launch complex in approximately the same location as the existing Pad 0-A, including a Liquid Fueling Facility (LFF);
- Minor interior modifications to launch support facilities; and
- Minor modifications to the boat dock on the north end of Wallops Island, which is situated on the bay side (i.e., Powells Bay) of the Delmarva Peninsula. Depths within the existing approach channel and boat basin are maintained to a depth of 4 feet at low tide. In order to widen the vehicular approach to the boat dock, NASA will install approximately seven, 18-inch steel sheet piles on either side of the existing 42-foot wide



steel pile bulkhead, effectively widening the current bulkhead by approximately 11 feet on each side. The bulkhead is located on the landward side of the existing 26 foot by 42 foot concrete hardstand at the interface of land and water; the proposed piles will be installed in the same alignment. In addition, approximately fifteen of these 18-inch steel sheet piles will be installed perpendicular to the bulkhead improvements described above, extending each side of the structure approximately 23 feet toward land. All pilings will be installed from land with the preferred method being a vibratory hammer; an impact hammer may be necessary at times if site conditions dictate. The project will likely take place in the summer or fall seasons, with total construction time estimated to be less than a week. The Army Corps of Engineers (ACOE) is the permitting agency for this portion of the WFF expansion project¹, and therefore, serves as an interrelated action to the proposed project. NASA, however, is the lead federal agency for the proposed project and consultation.

Throughout the project, NASA will implement the following measures to minimize any potential effects to sea turtles from the proposed boat dock modifications:

- Each day prior to pile driving, or prior to resuming pile driving after a greater than 30 minute pause, a trained observer will perform a visual sweep of the adjacent waterways. If listed sea turtles are observed within 500 yards of the project site, pile driving will be suspended until the turtle has moved outside of this 500 yard exclusion zone.
- During pile driving, a trained observer will be stationed at a point at which the Wallops Island boat basin canal intersects the Virginia Inside Passage, approximately 450 yards northwest of the project site. If turtles are observed entering the exclusion zone, this information will be immediately communicated to the construction contractor and work will be halted until the turtle is back outside of the 500 yard buffer.
- To the greatest extent practicable, NASA will direct its construction contractor to install pilings by vibratory techniques rather than hammer methods as this will reduce the noise and vibration within and adjacent to the project site.

NMFS listed species in Project Area

The proposed project is located at the Goddard Space Flight Center's Wallops Flight Facility, which is situated on the Delmarva Peninsula of Virginia. The action area is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50CFR§402.02). For this project, the action area includes the on land portion of the proposed construction activities on Wallops Island as well as the underwater area where effects of pile driving at Wallops Island boat dock (i.e., increase in suspended sediment, underwater noise levels) will be experienced. Based on the analysis of pile driving activities (i.e., the type and size of the piles to be driven), effects of increased under water noise will be experienced from a 10-1000 meter radius of the pile to be driven (Laughlin 2005; Jones and Stoke 2007; Illinworth and Rodkin, Inc. 2007). In addition, the action area includes the trajectory of orbital class launches and the associated impact points of orbital debris that may fall into the Atlantic Ocean. Launch trajectories/azimuth's from WFF are generally between 90 and 160 degrees from WFF. Along this trajectory range, potential impact points of falling debris

¹ Permits issued by the ACOE: CWA Section 404 permit and Rivers and Harbors Act Section 10 permit.

may occur between 80 nautical miles (nm)-1125nm from WFF. As such the action area includes the construction activities occurring on WFF, the in water work surrounding boat dock modifications (effects felt 10-1000meter radius of the pile being driven), and the area of the Atlantic Ocean, along the 90-160 degree trajectory, 80-1125nm from WFF, where orbital debris may fall.

Sea Turtle Species

Four species of federally threatened or endangered sea turtles under the jurisdiction of NMFS can be found seasonally in the coastal waters of Virginia from early May –November of each year. Loggerhead (*Caretta caretta*), Kemp's ridley (*Lepidochelys kempi*), and green sea turtles (*Chelonia mydas*) are present in these waters mainly during late spring, summer and early fall when water temperatures are relatively warm. While federally endangered leatherback sea turtles (*Dermochelys coriacea*) may be found in the waters off Virginia during the same time frame as well, this species is unlikely to occur in the action area as it is typically found in deeper, more offshore waters.

Several studies have examined the seasonal distribution of sea turtles in the mid-Atlantic, including Virginia. Sea turtles begin appearing in nearshore habitats of the mid-Atlantic as water temperatures rise in the spring and remain throughout the warmer months. Sea turtles are typically found in Virginia when water temperatures are greater than 11°C. In early May, as water temperatures continue to rise farther northward, Kemp's ridleys and loggerheads begin to appear in Virginia (Morrealle and Standora 2005). As temperatures decline in the fall, sea turtles leave their coastal habitats and join a larger contingent of other turtles migrating southward to overwinter (Morrealle and Standora 2005, Musick and Limpus 1997). Studies summarized in Morrealle and Standora (2005) indicate that loggerhead and Kemp's ridley sea turtles begin to appear in Virginia waters in May and begin leaving Virginia waters by the first week of November. Similar migratory patterns are expected for green and leatherback sea turtles (Shoop and Kenney 1992; Morreale 1999).

Whale Species

Federally listed species of whales may be found seasonally off the Atlantic coast of Virginia. Federally endangered North Atlantic right whales have been found off the coast of Virginia from November 1 – May 31, approximately 30 nautical miles from shore. Humpback whales feed during the spring, summer, and fall over a range that encompasses the eastern coast of the United States and may be found in Virginia waters from September 1 – April 30. Fin (*Balaenoptera physalus*) and Sperm (*Physeter macrocephalus*) whales are also seasonally present in the waters off of Virginia, but are typically found in deeper offshore waters. Fin whales are likely to be present off the coast of Virginia from October – January and Sperm whales may be present in these waters from March - May. Although listed species of whales may not occur in the portion of the action area where construction activities are occurring on Wallops Island or in the waters surrounding the boat dock, listed species of whales are likely to be present in more offshore waters within the portion of the action area where orbital debris could fall (i.e. 80nm-1125nm from WFF).

Effects of the Action

The proposed project will involve the following construction activities:

Pile Driving at WWF Boat Dock

The proposed project will involve driving, non-continuously, steel sheet piles at the boat dock on Wallop's Island. The installation of piles via pile driving can produce underwater sound pressure waves that can affect aquatic species. The available literature indicates that the single strike of a steel sheet pile results in a sound exposure level (SEL) up to about 155 to 160 dB re $1 \mu\text{Pa}^2\text{-sec}$ at a distance of 10 meters from the source (Jones & Stokes 2007). However, if a vibratory hammer is used to install the sheet piles, sound exposure levels are 10-20 dB lower. These levels are dependent not only on the pile and hammer characteristics, but also on the geometry and boundaries of the surrounding underwater and benthic environment. As the distance from the source increases, underwater sound levels produced by pile driving are known to dissipate rapidly. Illinworth and Rodkin, Inc. (2007) have conducted underwater sound level measurements as far as 1,000 meters from various types of piles being driven. Within this distance attenuation rates in the range 2 to 10 dB per doubling of distance have been observed for all types of piles.

The hearing capabilities of sea turtles are poorly known and there is little available information on the effects of noise on sea turtles. Current thresholds for determining impacts to marine mammals and sea turtles typically center around root-mean-square (RMS) received levels of 180 dB re $1 \mu\text{Pa}$ for potential injury, 160 dB re $1 \mu\text{Pa}$ for behavioral disturbance/harassment from a non-continuous noise source, and 120 dB re $1 \mu\text{Pa}$ for behavioral disturbance/harassment from a continuous noise source. As noted above, sound levels may be as high as 160 dB within 10 meters of the pile being driven but will be lower than 160 dB within 1000 meters or less of the pile being driven. However, based on studies done on sea turtle occurrence, behavior, and movements (i.e. Morreale and Standora (1990)), the habitat characteristics of the portion of the action area located at the boat dock (i.e. depths of 4 feet at low tide) are inconsistent with the preferred habitats of sea turtles. As such, it is extremely unlikely that sea turtle species will occur in the action area where pile driving will occur (i.e., within 10-1000 meters of the sheet pile being driven) and therefore, it is extremely unlikely that sea turtle species will be exposed to sound levels at or above 160 dB. However, even if transient sea turtle species occurred in the action area the stop-work provisions and sound minimization techniques implemented for the proposed project will prevent sea turtles from being exposed to sound levels that could harm or disturb sea turtle species that enter the action area as all work will be stopped as soon as a sea turtle is observed within 500 yards of the project site. Based on this information, the noise effects of pile driving on sea turtle species is discountable.

The installation of sheet piles will disturb bottom sediments. However, little increase in sedimentation or turbidity is expected to result from these construction activities. If any sediment plume does occur, it is expected to be small and suspended sediment is expected to settle out of the water column within a few hours and any increase in turbidity will be short term. Additionally, as noted above, it is extremely unlikely that sea turtle species will occur in the action area due to the shallow habitat characteristics of the approach channel and boat basin. As such, any effects of pile driving are expected to be discountable.

Other Construction Activities

Although the other construction activities, such as construction of new roads, PFF, and launch pad complex, will have no effect on sea turtles because the work will occur above the surface of the water where these species will not be present, any spills or leaks of pollutants from these activities could potentially occur and enter the marine environment and therefore, effect sea turtle species. However, toxic concentrations of pollutants are not anticipated in the nearshore and open ocean areas of the action area due to the mixing and dilution associated with wave movements and the vastness of the ocean environment. As such, pollutant presence in the marine environment will be short term. Based on this information, it is extremely unlikely that sea turtle and whale species will be exposed to high concentrations of pollutants that could pose a threat to the health and survival of listed species of sea turtles and whales, as any pollutant that may enter the marine environment will be diluted rapidly as a result of wave movements.

Construction activities of the proposed project will also involve the construction of a new launch complex, which will allow for six additional launches from the WFF from Pad 0-A. With this site improvement, WFF will be able to undertake 18 total orbital class launches per year (12 from Pad 0-B and 6 from Pad 0-A). With each launch, there is a potential of debris to fall within the Atlantic Ocean (80nm-1125nm from WFF). This falling debris has the potential to hit sea turtle or whale species within the Atlantic Ocean. However, based on only 18 launches being done per year, the vastness of the ocean, and the low density and wide distribution of whale and sea turtle species in the Atlantic Ocean, it is extremely unlikely for listed species of sea turtles and whales to be effected by orbital debris falling into the Atlantic Ocean. In addition, in a memo to NASA dated April 3, 2003 regarding the taking of marine mammals incidental to rocket launches, NMFS concluded that no letter of incidental take was needed for WFF as the level of impact from WFF activities (i.e., rocket launches) on marine mammals didn't warrant a letter of authorization as it was extremely unlikely to occur. Based on this information, the likelihood of falling debris hitting or impacting listed species of sea turtles or whales within the Atlantic Ocean is extremely low and unlikely to occur. As such, NMFS is able to conclude that the effects of falling orbital debris on listed species of whales and sea turtles is discountable.

Conclusions

Based on the analysis that all effects to listed sea turtles will be insignificant or discountable, NMFS is able to concur with the determination that the project proposed by NASA and the granting of a permit by the ACOE for proposed boat dock modifications at the WFF, is not likely to adversely affect any listed species under NMFS jurisdiction. Therefore, no further consultation pursuant to section 7 of the ESA is required. Reinitiation of consultation is required and shall be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the consultation; (b) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the consultation; or (c) If a new species is listed or critical habitat

designated that may be affected by the identified action. Should you have any questions about this correspondence please contact Danielle Palmer at (978) 282-8468 or by e-mail (Danielle.Palmer@Noaa.gov).

Sincerely,



Patricia A. Kurkul
Regional Administrator

Ec: Greene
O'Brien
Nichols
Palmer,



"Bundick, Joshua A. (WFF-2500)"
<joshua.a.bundick@nasa.gov>

08/12/2009 08:40 AM

To "Suzanne_Richert@URSCorp.com"
<Suzanne_Richert@URSCorp.com>, "Silbert, Shari A."
(WFF-200.C)[EG&G, Inc. (WICC)]"

cc

bcc

Subject FW: EFH; NASA Wallops Island Flight Facility

-----Original Message-----

From: David L O'Brien [mailto:David.L.O'Brien@noaa.gov]

Sent: Tuesday, August 11, 2009 3:59 PM

To: Bundick, Joshua A. (WFF-2500)

Subject: EFH; NASA Wallops Island Flight Facility

Hello Josh,

It was nice speaking with you yesterday regarding the draft EA you previously sent for my review regarding the proposed Expansion of the Wallops Flight Facility Launch Range. Following a review of the draft document and based on your description of the proposed project which includes the installation of approximately 25 linear ft. of sheet pile bulkhead, it is the opinion of NOAA Fisheries Service that the proposed bulkhead construction will not result in substantial adverse effects to EFH, managed species or their prey species.

As you know, under the Magnuson-Stevens Act (MSA), federal agencies who permit, authorize, or undertake actions with the potential to adversely affect essential fish habitat (EFH) must coordinate with NOAA Fisheries Service. To satisfying the EFH consultation requirements mandated under the MSA, the lead federal action agency must submit an EFH assessment to NOAA Fisheries Service, upon which our agency then consults. The Northeast Regional Office Habitat Conservation Division's (HCD) website <http://www.nero.noaa.gov/hcd/> provides useful information regarding EFH designations, assessments and the consultation process. An EFH assessment can be incorporated into a NEPA document such as the EA being prepared for the Expansion of the Wallops Flight Facility Launch Range.

As I mentioned yesterday, I would welcome an opportunity to further discuss the role of NOAA Fisheries, EFH, EFH assessment and the consultation process with you and other interested staff at your facility. I am available next Wednesday, August 19th to conduct a brief 30-45 minute presentation that overviews EFH and the consultation process and to answer any questions you may have. I am happy to arrive at your offices around 10 am if that is convenient for you and look forward to learning more about your agency and the mission of Wallops Island Flight Facility.

Please let me know if meeting next Wednesday works for your schedule. I look forward to seeing you soon.

Regards,

Dave

--

David O'Brien
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Habitat Conservation Division

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JAB
6/22/09

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June 18, 2009

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

RE: Draft Environmental Assessment and Federal Consistency Determination for the Expansion of the Wallops Flight Facility Launch Range, Accomack County, (DEQ 09-083F).

Dear Mr. Bundick:

The Commonwealth of Virginia has completed its review of the April 2009 Draft Environmental Assessment (EA) and Federal Consistency Determination (FCD) (received April 24, 2009) for the Expansion of the Wallops Flight Facility Launch Range in Accomack County. The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of federal environmental documents and responding to appropriate federal officials on behalf of the Commonwealth. DEQ is also responsible for coordinating Virginia's review of FCDs submitted pursuant to the Coastal Zone Management Act (CZMA) and providing the state's response. The following agencies and locality participated in the review of the EA and FCD for this proposal:

- Department of Environmental Quality
- Department of Conservation and Recreation
- Department of Game and Inland Fisheries
- Department of Agriculture and Consumer Services
- Virginia Marine Resources Commission
- Department of Forestry
- Department of Mines, Minerals and Energy
- Department of Historic Resources
- Department of Transportation
- Accomack County

The Accomack-Northampton Planning District Commission was also invited to comment on the proposal.

PROJECT DESCRIPTION

The National Aeronautics and Space Administration (NASA) plans to expand the launch range at Wallops Island Flight Facility (WFF) in Accomack County. The proposed action is intended to expand and upgrade NASA and Mid-Atlantic Regional Spaceport (MARS) facilities to support launch activities from WFF for up to and including the medium-large class suborbital and orbital expendable launch vehicle (ELV).

Components of the proposed action include:

- facility construction and infrastructure improvements;
- testing, fueling, and processing operations;
- up to two static fire tests per year; and
- launching an additional six vehicles and associated spacecraft per year from Pad 0-A.

Site improvements to support launch operations include:

- minor modifications to the boat dock on the north end of Wallops Island;
- construction of a dedicated Payload Fueling Facility (PFF), a Payload Processing Facility (PPF) and storage;
- construction of new roads and minor upgrades to existing roads;
- construction of a new launch complex in approximately the same location as the existing Pad 0-A, including a Liquid Fueling Facility (LFF); and
- minor interior modifications to launch support facilities.

CONCLUSION

Based on the information provided in the Draft Environmental Assessment and comments from reviewers, the Commonwealth of Virginia has no objection to the proposal as presented, provided NASA complies with all applicable laws and regulations.

Provided activities are performed in accordance with the recommendations which follow, this project is unlikely to have significant effects on ambient air quality, water quality, important farmland, wetlands, and wildlife resources. NASA should coordinate closely with the U.S. Fish and Wildlife Service, National Marine Fisheries Service and the Virginia Department of Game and Inland Fisheries to ensure that impacts on protected species including shorebirds, sea turtles and marine mammals are adequately avoided and minimized.

ENVIRONMENTAL IMPACTS AND MITIGATION

1. Water Quality & Wetlands. According to the EA (page ii), construction activities, spills or leaks of pollutants during construction activities, spill or leaks during transportation of materials or from storage facilities, and launch failures that may result in release of liquid propellants would all have the potential to affect surface waters including approximately 5.7 acres of wetlands. Prior to construction, NASA and MARS would complete a jurisdictional wetland delineation, obtain all necessary permits and implement mitigation measures to ensure no net loss of wetlands.

The document (page 21) states that a water deluge system would be constructed to absorb the heat load and suppress vibration and noise from the engines. The deluge system would include a 100,000-gallon aboveground water storage tank, pumps, and a trench and retention basin for the deluge water. Once used, the deluge water would be discharged to a 12,500-square-foot concrete-lined retention basin and tested for potential release via a water control structure to a newly constructed unlined stormwater basin.

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

1(b) Virginia Water Protection Permit. The DEQ Tidewater Regional Office (TRO) notes that the facility expansion will involve impacts to surface waters and wetlands that are regulated by the VWPP program.

1(c) Virginia Pollutant Discharge Elimination System. According to the DEQ-TRO, it appears that the existing VPDES permit for Wallops Island may require modification to address any new discharges of process wastewater and industrial stormwater. If the quench water used during rocket launches will require an adjustment to its pH, the discharge of this treated wastewater will require a permit under the VPDES program. Furthermore, DEQ-TRO will evaluate whether stormwater runoff from the rocket launch pads should be covered in the permit. The existing VPDES permit for the NASA

Mr. Joshua A. Bundick
Expansion of Wallops Flight Facility Launch Range

Wallops Island facility is currently being reviewed by DEQ for reissuance. Therefore, any additional discharges will be included in DEQ's permit evaluation.

DEQ-TRO notes that the proposed deluge system will use 100,000 gallons of potable groundwater for each launch or static fire. DEQ-TRO believes that this is not the best use of potable water from the Eastern Shore confined aquifer system.

1(d) Recommendation. DEQ-TRO recommends that NASA investigate the feasibility of constructing a shallow water table well for the sole purpose of filling the storage tank for the deluge system, provided a reusable source of water is not available. The deluge system water that would be discharged to the concrete-lined retention basin should be recycled back to the storage tank even if some treatment is necessary. Groundwater would only be needed to make up for water loss after the initial filling of the storage tank.

In general, DEQ recommends that stream and wetland impacts be avoided to the maximum extent practicable. To minimize unavoidable impacts to wetlands and waterways, DEQ recommends the following practices:

- Use directional drilling from upland locations for stream crossings, to the extent practicable. If directional drilling is not feasible, stockpile the material excavated from the trench for replacement.
- Operate machinery and construction vehicles outside of stream-beds and wetlands; use synthetic mats when in-stream work is unavoidable;
- Construct the trench for the utility line in a manner that does not drain the wetlands (for example, backfilling with extensive gravel layers thereby creating a French drain effect).
- Preserve the top 12 inches of trench material removed from wetlands for use as wetland seed and root-stock in the excavated area.
- Erosion and sedimentation controls should be designed in accordance with the most current edition of the Virginia Erosion and Sediment Control Handbook. These controls should be in place prior to clearing and grading, and maintained in good working order to minimize impacts to state waters. The controls should remain in place until the area is stabilized.
- Place heavy equipment, located in temporarily impacted wetland areas, on mats, geotextile fabric, or use other suitable measures to minimize soil disturbance, to the maximum extent practicable.
- Restore all temporarily disturbed wetland areas to pre-construction conditions and plant or seed with appropriate wetlands vegetation in accordance with the cover type (emergent, scrub-shrub, or forested). The applicant should take all appropriate measures to promote re-vegetation of these areas. Stabilization and

restoration efforts should occur immediately after the temporary disturbance of each wetland area instead of waiting until the entire project has been completed.

- Place all materials which are temporarily stockpiled in wetlands, designated for use for the immediate stabilization of wetlands, on mats, geotextile fabric in order to prevent entry in State waters. These materials should be managed in a manner that prevents leachates from entering state waters and must be entirely removed within thirty days following completion of that construction activity. The disturbed areas should be returned to their original contours, stabilized within thirty days following removal of the stockpile, and restored to the original vegetated state.
- All non-impacted surface waters within the project or right-of-way limits that are within 50 feet of any clearing, grading, or filling activities should be clearly flagged or marked for the life of the construction activity within that area. The project proponent should notify all contractors that these marked areas are surface waters where no activities are to occur.

Measures should be employed to prevent spills of fuels or lubricants into state waters.

1(e) Requirements. According to DEQ-TRO, the following would apply to the expansion of the Wallops Flight Facility launch range:

- **VWPP.** NASA must prepare and submit a Joint Permit Application (JPA) for review by DEQ-TRO for anticipated project impacts to surface waters and wetlands.
- **VPDES.** Modifications to NASA's existing VPDES facility permit will be evaluated as part of the current permit reissuance process.

2. Subaqueous Lands Management. The EA does not discuss potential project impacts to subaqueous lands.

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

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

- VMRC for encroachments on or over state-owned subaqueous beds as well as tidal wetlands;

Mr. Joshua A. Bundick
Expansion of Wallops Flight Facility Launch Range

- U.S. Army Corps of Engineers (Corps) for issuing permits pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act;
- DEQ for issuance of a Virginia Water Protection Permit; and
- local wetlands board for impacts to wetlands.

2(b) Agency Comments. According to VMRC, it appears that the proposed project does not fall under VMRC's jurisdiction. Therefore, no authorization would be required from VMRC. However, if any portion of the proposed project extends channelward of mean low water, or falls within the coastal primary sand dunes/beaches of Accomack County, authorization may be required from VMRC.

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

3. Erosion and Sediment Control, and Stormwater Management. According to the EA (page 84), construction activities, including grading, clearing, filling, and excavation, would result in disturbance of the ground surface and would have the potential to cause soil erosion. NASA and MARS would minimize adverse impacts to soils by acquiring VSMP permits as necessary, and developing and implementing site-specific stormwater pollution prevention plans and erosion and sediment control plans prior to ground-disturbing activities.

3(a) Agency Jurisdiction. DCR's Division of Soil and Water conservation administers the *Virginia Erosion and Sediment Control Law and Regulations (VESCL&R)* and *Virginia Stormwater Management Law and Regulations (VSWML&R)*.

3(b) Erosion and Sediment Control and Stormwater Management Plans. According to the Department of Conservation and Recreation (DCR), NASA and its authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with *VESCL&R*, *VSWML&R* including coverage under the general permit for stormwater discharge from construction activities, and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act-Section 313, federal consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbing activities that result in the land disturbance of equal to or greater than 10,000 square feet would be regulated by *VESCL&R*. Accordingly, NASA must prepare and implement an erosion and sediment control (ESC) plan to ensure compliance with state law and regulations. The ESC plan is submitted to the DCR Regional Office that serves the area where the project is located 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. [Reference: VESCL §10.1-567]

3(c) Virginia Stormwater Management Program General Permit for Stormwater Discharges from Construction Activities. DCR is responsible for the issuance, denial, revocation, termination and enforcement of the Virginia Stormwater Management Program (VSMP) General Permit for Stormwater Discharges from Construction Activities related to municipal separate storm sewer systems (MS4s) and construction activities for the control of stormwater discharges from MS4s and land disturbing activities under the Virginia Stormwater Management Program.

Therefore, the operator or owner conducting 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 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 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/vsmp.shtml. [Reference: Virginia Stormwater Management Act §10.1-603.1 *et seq.*; VSMP Permit Regulations 4 VAC-50 *et seq.*]

4. Air Pollution Control. According to the EA (page iii), construction activities would generate fugitive dust and combustion emissions would occur as a result of site improvements. Operation of generators and boilers would result in emissions of pollutants. NASA and MARS would minimize adverse impacts to air quality by implementing site-specific construction and industrial best management practices.

4(a) Agency Jurisdiction. DEQ's Air Quality Division, on behalf of the State Air Pollution Control Board, is responsible to develop regulations that become Virginia's *Air Pollution Control Law*. DEQ is charged to carry out mandates of the state law and related regulations as well as Virginia's federal obligations under the *Clean Air Act* as amended in 1990. The objective is to protect and enhance public health and quality of life through control and mitigation of air pollution. The division ensures the safety and quality of air in Virginia by monitoring and analyzing air quality data, regulating sources of air pollution, and working with local, state and federal agencies to plan and implement strategies to protect Virginia's air quality. The appropriate regional office is directly responsible for the issue of necessary permits to construct and operate all stationary sources in the region as well as to monitor emissions from these sources for compliance. As a part of this mandate, the environmental documents of new projects to be undertaken in the state are also reviewed. In the case of certain projects, additional

evaluation and demonstration must be made under the general conformity provisions of state and federal law.

4(b) Ozone Attainment Area. According to the DEQ Air Division, the project site is located in an ozone (O₃) attainment area. NASA should take all reasonable precautions to limit emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), principally by controlling or limiting the burning of fossil fuels.

4(c) Fugitive Dust. During construction, fugitive dust must be kept to a minimum by using control methods outlined in 9 VAC 5-50-60 *et seq.* of the *Regulations for the Control and Abatement of Air Pollution*. These precautions include, but are not limited to, the following:

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

4(d) Open Burning. If project activities include the burning of construction or demolition material, 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* for open burning 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.

4(e) Minor New Source Review. According to DEQ-TRO, on May 8, 2009 the Wallops Flight Facility submitted a permit application for this project under Article 6 (Minor New Source Review). TRO is currently in the process of determining permit applicability for this project under Air Regulation Article 6 (minor NSR). Minor new source review is a preconstruction review and permit for new stationary sources or modifications (physical changes or changes in the method of operation) that emit, or have the potential to emit, less than 100 tons or more per year of any regulated air pollutant. The program was established to implement the requirements of §§ 110(a)(2)(C) and 112 of the federal *Clean Air Act* and associated regulations and is codified in Article 6 (9 VAC 5-80-1100 *et seq.*).

5. Solid and Hazardous Wastes and Hazardous Materials. The EA (page 105) states that construction activities would include the use of hazardous materials and hazardous waste generation (i.e., solvents, hydraulic fluid, oil, and antifreeze). With implementation of safety measures and proper procedures for the handling, storage,

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and disposal of hazardous materials and wastes during construction activities, no adverse impacts are anticipated during construction.

5(a) Agency Comments. DEQ's Waste Division finds that hazardous waste issues and sites were addressed in the report. However, solid waste is not addressed. The report includes a search of waste-related data bases. A geographic information system (GIS) database search did not reveal any waste sites within a half mile radius that would impact or be impacted by project activities.

5(b) Data File Search. The Waste Division performed a cursory review of DEQ data files and determined that the facility is under DEQ's Federal Facilities Installation Restoration Program (VA8800010763). This refers to a site (scrapyard site) on the mainland at WFF separate from Wallops Island. According to the January 2008 Record of Decision (ROD) for the site, a Removal Action conducted at the site in 2003 removed the contaminated soil thereby eliminating the need to conduct further remedial action. Post-Removal Action sampling and studies conducted from 2003 through 2006, confirmed that no action is required. The ROD states that NASA and the Environmental Protection Agency (EPA) have determined, and DEQ concurred, that no remedial action is necessary at the site to ensure protection of public health or welfare or the environment.

The following websites may prove helpful in locating additional information for this identification number:

- <http://www.epa.gov/superfund/sites/cursites/index.htm> or
- http://oaspub.epa.gov/enviro/ef_home2.waste.

5(c) Waste Management. 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. All demolition and construction waste, including excess soil, must be characterized in accordance with the *Virginia Hazardous Waste Management Regulations* prior to disposal at an appropriate off-site facility.

5(d) Asbestos-containing Material and Lead-based Paint. All structures being demolished or removed, should be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to demolition. If ACM or LBP are found, in addition to the federal waste-related regulations mentioned above, state regulations 9 VAC 20-80-640 for ACM and 9 VAC 20-60-261 for LBP must be followed.

5(e) Recommendation. 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.

6. Petroleum Storage Tanks. According to the EA (page 105), all new petroleum facilities, tanks, and storage areas would be subject to DEQ Storage Tank Program regulations. Spills or releases from temporary or permanent underground storage tanks and aboveground storage tanks would be immediately reported to the WFF Fire Department, which would contact the WFF Environmental Office. The WFF Environmental Office would properly characterize the spill or release, notify DEQ if necessary, arrange for remediation, and dispose of contaminated soils and groundwater.

6(a) Petroleum Storage Tank Cleanups. According to DEQ-TRO, twenty-three petroleum releases have been reported at the Wallops Flight Facility in Accomack County, one of which is a currently an active case. However, there are no active cases in the Launch Range area. Petroleum contaminated soils or groundwater generated during construction of this project must be characterized and disposed of properly.

6(b) Requirements. NASA must comply with the following requirements of the Storage Tank Program.

- The relocation, removal or closure of any regulated aboveground or underground petroleum storage tank(s) must be reported to DEQ TRO.
- Spills or other accidental releases of petroleum or other hazardous products from construction activities must be reported to the DEQ Tidewater Regional Office Pollution Response Program (Prep).
- If evidence of a petroleum release is discovered during implementation of the project, it must be reported to DEQ-TRO.
- If any regulated ASTs or USTs are closed, relocated or altered, NASA must notify DEQ-TRO.
- If the construction of this project will include the use of portable ASTs (>660 gallons) for equipment fuel, these tank(s) must be registered with DEQ-TRO using AST Registration form 7540-AST. This form is available at the DEQ web site at www.deq.virginia.gov.

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

8. Natural Heritage Resources. The document does not discuss the Virginia Natural Heritage Program administered by the Virginia Department of Conservation and Recreation Division of Natural Heritage and possible project impacts on any natural heritage resources in the area.

8(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. 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 (the habitats of rare, threatened, and endangered species, significant natural communities, geologic sites, and other natural features).

8(b) Agency Comments. DCR-DNH searched its Biotics Data System for occurrences of natural heritage resources in the project area. According to the information currently in DCR files, part of the proposed expansion project is located within the North Assawoman-South 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. 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 resource of concern at this site is:

 piping plover, *Charadrius melodus*, G3/S2B,S2BS1N/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). This species is listed as threatened by the United States Fish and Wildlife Service (USFWS) and the Virginia Department of Game and Inland Fisheries (DGIF).

8(c) State-listed Plant and Insect Species. The *Endangered Plant and Insect Species Act of 1979*, Chapter 39 §3.1-1020 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 and threatened species of plants and insects. The VDACS Virginia Endangered Plant and Insect Species Program personnel cooperates with the U.S. Fish and Wildlife Service (USFWS), 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 USFWS, are available, adherence to the order and tasks outlined in the plans are followed to the extent possible.

Under a Memorandum of Agreement established between VDACS and DCR, DCR represents VDACS in comments regarding potential impacts on State-listed threatened and endangered plant and insect species. DCR finds that the current activity will not affect any documented State-listed plants or insects. Furthermore, VDACS notes that information in its database does not include any documented occurrences of threatened or endangered plant and insect species in the vicinity of the project area. VDACS does not anticipate the proposed action to have significant adverse impacts as it relates to VDACS' responsibilities for the protection of listed endangered and threatened plant and insect species.

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

8(e) Finding. DCR concurs with the finding attributed to USFWS in the EA (page 66) that negative impacts to the piping plover from the proposed action are unlikely.

8(f) Recommendations. DCR-DNH recommends that NASA perform the following:

- continue monitoring piping plover populations;
- continue coordinating with the USFWS and DGIF to ensure compliance with protected species legislation, due to the legal status of the Piping Plover; and
- contact DCR-DNH, Rene Hypes at (804) 371-2708 for an update on natural heritage information if a significant amount of time passes before the project is initiated since new and updated information is continually added to Biotics.

9. Wildlife Resources and Protected Species. According to the EA (page 66), an April 22, 1997, Section 7 consultation with USFWS determined that the range expansion and operations would not result in the incidental take of any piping plovers because of the short duration of the disturbance, the long distance between the disturbance and the area used by plovers, the limited number of launches during the nesting season, and the lack of other disturbances (e.g., recreation) to the plovers on Wallops Island.

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

9(b) Agency Comments.

(i) **Nesting Shorebirds**

According to DGIF, 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-listed threatened piping plover (*Charadrius melodus*), the state-listed 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-listed threatened gull-billed tern (*Sterna nilotica*), and the least tern (*S. antillarum*), which is a state species of special concern.

Piping Plover and Wilson's Plover. 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).

American Oystercatcher. 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 Atlantic coast, suggesting that the islands may serve as important population sources for the east coast population (Wilke 2008).

Least Tern and Gull-billed Tern. 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

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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.

Red Knot. 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).

Other Avian Species. 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).

(ii) **Sea Turtles**

Loggerhead Sea Turtle. Virginia is the northern extreme of the federally-listed 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-VA/NC 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 armored beaches, which over time, become devoid of dry beach and natural primary dune systems.

(iii) **Impacts of Increased Rocket Launches**

VDGIF is concerned that the EA does not adequately characterize possible impacts upon wildlife and the resources that support them resulting from the proposed increase in rocket launches. The EA acknowledges that animals (although they limit it to terrestrial

mammals) will demonstrate a startle response. This is particularly significant in the case of nearby nesting birds. If birds are scared off their nesting sites, this may result in nest abandonment, leading to unsuccessful breeding or brooding, depending on the time of year of the launch. Over time and depending on the number of launches during the breeding season (for most species in the area, not including bald eagle, this is April 1 through August 15 of any year), this could result in significant impacts upon these populations. Rocket launches also may be detrimental to migrating species.

It is DGIF's understanding that rocket launches at WFF have precluded staff at the Chincoteague National Wildlife Refuge (CNWR) from accessing Assawoman Island for the purposes of monitoring beach nesting birds, including piping plovers. This is significant in light of the fact that there may be adverse impacts upon these birds during launches and that the number of launches per year may increase. In this case, monitoring of these nesting birds is all the more important and should be accommodated by NASA.

9(c) Recommendations. DGIF recommends that the following information and analysis be included in the final EA:

- fully address the impacts associated with the proposed expansion of the WFF upon the habitat requirements of avian species;
- update Section 3.2.3-Table 12: Threatened and Endangered Species in the WFF Area, to reflect the state status of these species as follows:
 - leatherback sea turtle-Virginia status is endangered
 - hawksbill sea turtle-Virginia status is endangered
 - Kemp's Ridley sea turtle-Virginia status is endangered
 - loggerhead sea turtle-Virginia status is threatened
 - Atlantic green sea turtle-Virginia status is threatened
 - fin whale-Virginia status is endangered
 - humpback whale- Virginia status is endangered
 - northern right whale-Virginia status is endangered;
- include the following listed species also known from the vicinity of Wallops Island in Table 12:
 - state-listed threatened bald eagle
 - federal- and state-listed endangered sperm whale
 - federal- and state-listed endangered sei whale
 - federal- and state-listed endangered blue whale
 - federal- and state-listed endangered Florida manatee (subspecies of the West Indian manatee);
- fully evaluate these additional species for impacts associated with the launch and reentry of rockets from Mid-Atlantic Regional Spaceport on Wallops Island in addition to any other activities associated with the proposed upgrades to the facility;

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- include the red knot in Table 12, a federal candidate species and a species listed in Tier IV (Moderate Conservation Need) of Virginia's Wildlife Action Plan's list of Species of Greatest Conservation Need;
- address the impacts of increased rocket launches on wildlife resources and provide alternatives for operations at Mid-Atlantic Regional Spaceport that may avoid, minimize or mitigate such impacts (this may include options such as a reduced number of launches during the breeding season); and
- detail the number of planned launches from Mid-Atlantic Regional Spaceport and the effect that an increase in the number of launches, if proposed, may have on nearby wildlife resources (this should include a detailed discussion about cumulative impacts).

DGIF offers the following recommendations regarding the proposed development activities to minimize overall impacts to wildlife and natural resources:

- coordinate with the National Marine Fisheries Service (NMFS) regarding possible impacts upon sea turtle nesting habitat and impacts upon them that may result from the ongoing maintenance dredging in the approach channel to the existing boat docks.
- coordinate with USFWS regarding possible impacts upon federally listed species associated with the proposed work.

Contact Amy Ewing, DGIF at (804) 367-2733, for additional information regarding these comments.

10. Forest Resources. According to the EA (page 113), construction of the Payload Fueling Facility (PFF), Payload Processing Facility (PPF) and access roads would result in the removal of up to 2 acres of trees.

10(a) Agency Jurisdiction. The mission of the Virginia Department of Forestry (VDOF) is to protect and develop healthy, sustainable forest resources for Virginians. VDOF was established in 1914 to prevent and suppress forest fires and reforest bare lands. Since the Department's inception, it has grown and evolved to encompass other protection and management duties including: protecting Virginia's forests from wildfire, protecting Virginia's waters, managing and conserving Virginia's forests, managing state-owned lands and nurseries, and managing regulated incentive programs for forest landowners.

10(b) Agency Comments. VDOF finds that the proposed project would have no significant impact on the forest resources of the Commonwealth.

For additional information, contact Todd Groh, VDOF at (434) 977-6555 ext. 3344.

11. Geologic and Mineral Resources. The EA (page 85) states that construction of the pile foundation to support the Pad 0-A infrastructure would require driving precast concrete piles to depths of approximately 90 feet below ground surface. The piles are expected to penetrate the surficial coastal deposits and terminate in the Yorktown Formation. Although the driven piles would create long-term changes to the subsurface geology immediately around the driven piles, the changes would be limited in extent and are considered negligible.

11(a) Agency Jurisdiction. The mission of the Department of Mines, Minerals and Energy (DMME), Division of Mineral Resources (DMR) is to enhance the development and conservation of energy and mineral resources in a safe and environmentally sound manner to support a more productive economy in Virginia. Serving as Virginia's geological survey, DMME-DMR generates, collects, compiles, and evaluates geologic data, creates and publishes geologic maps and reports, works cooperatively with other state and federal agencies, and is the primary source of information on geology, mineral and energy resources, and geologic hazards for both the mineral and energy industries and the general public. DMME-DMR also provides the necessary geologic support for those divisions of DMME that regulate the permitting of new mineral and fuel extraction sites, miner safety, and land reclamation.

11(b) Conclusion. DMME anticipates that the proposed action would have no significant impact to mineral resources.

For additional information, contact Matt Heller, DMME at (434) 951-6351.

12. Transportation Impacts. According to the EA (page 16), NASA would make transportation improvements including the construction of new roads and minor upgrades to existing roads to transport cargo from the existing boat dock on the north end of Wallops Island to the proposed PFF or PPF, from the PPF or PFF to the HIF, and from the HIF to the launch pads. New road construction could be up to 2,178 feet of 20 foot wide road, adding approximately 1 acre of additional asphalt pavement. The widening or straightening of existing roads could add up to an additional 0.5 acre of pavement.

12(a) Agency Jurisdiction. The Virginia Department of Transportation (VDOT) provides comments pertaining to potential impacts to existing and future transportation systems.

12(b) Agency Comments. The Virginia Department of Transportation (VDOT) notes that there is one transportation improvement project in the vicinity of WFF in the FY 10-15 Six Year Improvement Program or the Secondary Six Year Program. That project is the Route 175 Chincoteague Bridge Replacement (UPC # 1896).

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12(c) Conclusion. VDOT concludes that any additional traffic or traffic disruptions related to the proposed action would be negligible.

12(d) Recommendation. Any VDOT land use requirements, lane closures, traffic control or work zone safety issues should be closely coordinated with Accomack County and the VDOT Accomac Residency Office at (757) 787-1550.

For more information, contact Melanie Allen, VDOT at (804) 786-5360.

13. Historic Structures and Archaeological Resources. According to the EA (page v), the proposed action may have indirect visual and auditory effects on identified historic properties in the area of potential effect, including the U.S. Coast Guard Lifesaving Station and Observation Tower, but these effects would not likely be adverse. NASA has determined that the proposed construction would have no effect on archaeological resources.

13(a) Agency Jurisdiction. The Department of Historic Resources (DHR) conducts reviews of projects to determine their effect on historic structures or cultural resources under its jurisdiction. DHR, as the designated State's Historic Preservation Office (SHPO), ensures that federal actions comply with Section 106 of the *National Historic Preservation Act of 1966 (NHPA)*, as amended, and its implementing regulation at 36 CFR Part 800. The *NHPA* requires federal agencies to consider the effects of federal projects on properties that are listed or eligible for listing on the National Register of Historic Places. Section 106 also applies if there are any federal involvements, such as licenses, permits, approvals or funding.

13(b) Agency Comments. Pursuant to Section 106 of the *National Historic Preservation Act*, as amended, and its implementing regulation 36 CFR Part 800, DHR has requested additional information from NASA to determine project impacts on historic resources. The Wallops Coast Guard Station and associated tower (001-0027-0100 and 001-9927-0101) have been determined eligible for listing in the National Register of Historic Places (NRHP). A memorandum of agreement (DHR File No. 2004-0147) is currently under development to address the adverse effects of this proposal on these resources.

13(c) Requirements. Pursuant to *Section 106*, NASA must:

- continue to coordinate the development of the MOA with DHR; and
- contact the National Park Service (NPS) at Assateague Island National Seashore regarding the effect of the proposed action on the NRHP-listed Assateague Beach Lifeboat Station. Contact Trish Kicklighter, NPS Superintendent or Carl Zimmerman, NPS Resource Management Specialist with this request.

14. Local Review.

14(a) Agency Jurisdiction. In accordance with CFR 930, Subpart A, § 930.6(b) of the *Federal Consistency Regulations*, DEQ, on behalf of the state, is responsible for securing necessary review and comment from other state agencies, the public, regional government agencies, and local government agencies, in determining the Commonwealth's concurrence or objection to a federal consistency certification.

14(b) Local Comments. The Accomack County Administrators Office fully supports the proposed action.

Contact Steve Miner, Accomack County Administrator at (757) 787-5700 for additional information.

15. Pollution Prevention. DEQ advocates that principles of pollution prevention be used in all construction projects as well as in facility operations. Effective siting, planning, and on-site Best Management Practices (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(a) Recommendations. We have several pollution prevention recommendations that may be helpful in the construction of this project and in the operation of the facility:

- Consider development of an effective Environmental Management System (EMS). An effective EMS will ensure that the 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 construction and design. These could include asphalt and concrete containing recycled materials, and integrated pest management in landscaping, among other things.
- Integrate pollution prevention techniques into the facility maintenance and operation, to include the following: inventory control (record-keeping and

centralized storage for hazardous materials), product substitution (use of non-toxic cleaners), and source reduction (fixing leaks, energy-efficient HVAC and equipment). 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. Energy Conservation. The proposed facility should be planned and designed to comply with state and federal guidelines and industry standards for energy conservation and efficiency. For example, the energy efficiency of the facility can be enhanced by maximizing the use of the following:

- thermally-efficient building shell components (roof, wall, floor, windows, and insulation);
- facility siting and orientation with consideration towards natural lighting and solar loads
- high efficiency heating, ventilation, air conditioning systems;
- high efficiency lighting systems and daylighting techniques; and
- energy-efficient office and data processing equipment.

Please contact Matt Heller, Department of Mines, Minerals, and Energy at (434) 951-6351 for additional information.

17. Water Conservation. The following recommendations will result in reduced water use associated with the operation of the facility.

- Grounds should be landscaped with hardy native plant species to conserve water as well as lessen the need to use fertilizers and pesticides.
- Convert turf to low water-use landscaping such as drought resistant grass, plants, shrubs and trees.
- Low-flow toilets should be installed in new facilities. Otherwise, offset older toilets with a plastic jug of pebbles and water to minimize flushing.
- Consider installing low flow restrictors and aerators to faucets.
- Improve irrigation practices by:
 - upgrading sprinkler clock; water at night, if possible, to reduce evapotranspiration (lawns need only 1 inch of water per week, and do not need to be watered daily; overwatering causes 85% of turf problems);
 - installing a rain shutoff device; and
 - collecting rainwater with a rain bucket or cistern system with drip lines.

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- Consider replacement of old equipment such as washers and dishwashers with new high-efficiency machines to reduce water useage by 30-50% per use.
- Check for and repair leaks (toilets and faucets) during regular routine maintenance activities.

FEDERAL CONSISTENCY UNDER THE COASTAL ZONE MANAGEMENT ACT

Pursuant to the Coastal Zone Management Act of 1972, as amended, federal activities located inside or outside of Virginia's designated coastal management area that can have reasonably foreseeable effects on coastal resources or coastal uses must, to the maximum extent practicable, be implemented in a manner consistent with the Virginia Coastal Resources Management Program (VCP) (also called the Virginia Coastal Zone Management Program). The VCP consists of a network of programs administered by several agencies. The DEQ coordinates the review of federal consistency determinations with agencies administering the Enforceable and Advisory Policies of the VCP. A federal consistency determination was submitted with the EA that includes an analysis of the enforceable policies of the VCP.

Federal Consistency Public Participation

In accordance with 15 CFR § 930.2, public notice of the proposed action was published on DEQ's web site from May 1, 2009 to May 22, 2009. No public comments were received in response to the notice.

Federal Consistency Concurrence

Based on our review of NASA's consistency determination, and the comments and recommendations submitted by agencies administering the enforceable policies of the VCP, DEQ concurs that this proposal is consistent with the VCP. However, other state approvals which may apply to this project are not included in this concurrence. Therefore, NASA must ensure that this project is constructed and operated in accordance with all applicable federal, state, and local laws and regulations. We encourage NASA to consider the advisory policies of the VCP as well (see Attachment 2).

REGULATORY AND COORDINATION NEEDS

1. Water Quality and Wetland Impacts. Water quality and wetland impacts associated with this proposal will require a Virginia Water Protection Permit issued by the DEQ Tidewater Regional Office pursuant to Virginia Code §62.1-44.15:5. A wetland delineation utilizing methods outlined in the 1987 Corps delineation manual should be prepared and confirmed by the Corps. Both the delineation and the subsequent confirmation by the Corps should clearly identify the presence of all wetlands, not just

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those deemed “jurisdictional” under the Clean Water Act. A Joint Permit Application may be obtained from and submitted to VMRC which serves as a clearinghouse for the joint permitting process involving the VMRC, DEQ, Corps, and local wetlands boards. For additional information and coordination regarding the VWPP, contact Bert Parolari (DEQ-TRO) at (757) 518-2166.

Modifications to NASA’s existing Virginia Pollutant Discharge Elimination System permit may be required as a result of possible new stormwater discharges and modifications to existing discharges that may occur related to the proposed expansion. The *Virginia Pollutant Discharge Elimination System Permit Regulation* (9 VAC 25-31) sets forth the policies and procedures that are followed in the administration of the permit program. NASA must continue to coordinate with DEQ-TRO on the reissuance of the facility’s VPDES permit. Contact James McConathy, DEQ-TRO at (757) 518-2165 for additional information.

2. Erosion and Sediment Control and Stormwater Management.

2(a) Erosion and Sediment Control and Stormwater Management. NASA must ensure that it is in compliance with *Virginia's Erosion and Sediment Control Law* (Virginia Code 10.1-567) and *Regulations* (4 VAC 50-30-30 *et seq.*) and *Stormwater Management Law* (Virginia Code 10.1-603.5) and *Regulations* (4 VAC 3-20-210 *et seq.*). Activities that disturb 10,000 square feet or more of land would be regulated by VESCL&R and VSWML&R. NASA is encouraged to contact DCR’s Suffolk Regional Office at (757) 925-2468, for assistance with developing or implementing an ESC plan to ensure project conformance.

2(b) Virginia Stormwater Management Program General Permit for Stormwater Discharges from Construction Activities. For projects involving land-disturbing activities one acre or more, NASA is required to develop a project-specific stormwater pollution prevention plan and apply for registration coverage under the Virginia Stormwater Management Program General Permit for Discharges of Stormwater from Construction Activities. Specific questions regarding the Stormwater Management Program requirements should be directed to Holly Sepety, DCR, at (804) 225-2613.

3. 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:

- 9 VAC 5-40-5490 *et seq.* for asphalt paving operations;
- 9 VAC 5-50-60 *et seq.* governing fugitive dust emissions;

Mr. Joshua A. Bundick
Expansion of Wallops Flight Facility Launch Range

- 9 VAC 5-130 *et seq.* for open burning; and
- 9 VAC 5-80-1100 *et seq.* for Minor New Source Review.

For additional information and coordination, contact Jane Workman, DEQ-TRO at (757) 518-2112. Also, contact the Accomack County for any local requirements on open burning.

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

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

Dredge spoils, when managed in accordance with the Virginia State Water Control Board or other Virginia state agencies with similar authority, are conditionally exempt from the solid waste regulations (9VAC 20-80-60.E) and are excluded from the waste barging regulations (9VAC 20-170-10).

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).

4(a) Asbestos-Containing Material. It is the responsibility of the owner or operator of a demolition activity, prior to the commencement of the demolition, to thoroughly inspect the affected part of the facility where the operation will occur for the presence of asbestos, including Category I and Category II nonfriable asbestos containing material (ACM). Upon classification as friable or non-friable, all waste ACM shall be disposed of in accordance with the Virginia Solid Waste Management Regulations (9 VAC 20-80-640), and transported in accordance with the Virginia regulations governing Transportation of Hazardous Materials (9 VAC 20-110-10 *et seq.*). Contact the DEQ Waste Management Program for additional information, (804) 698-4021, and the Department of Labor and Industry, Ronald L. Graham at (804) 371-0444.

Mr. Joshua A. Bundick
Expansion of Wallops Flight Facility Launch Range

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

5. Storage Tanks. If evidence of a petroleum release is discovered during construction of this project, NASA must contact the DEQ Tidewater Regional Office, Lynne Smith at (757) 518-2055 or Gene Siudyla at (757) 518-2117.

The use of portable fuel AST(s) with a capacity of greater than 660 gallons, the tank(s) must be registered with DEQ using *AST Registration Form 7540-AST*. Tank registration may be accomplished by contacting Tom Madigan, DEQ Tidewater Regional Office, at (757) 518-2115 or by e-mail at temadigan@deq.virginia.gov.

6. Protected Species. NASA should coordinate closely with the U.S. Fish and Wildlife Service, National Marine Fisheries Service and the Virginia Department of Game and Inland Fisheries to ensure that impacts on protected species including shorebirds, sea turtles and marine mammals are adequately avoided and minimized. For additional information, contact Amy Ewing, DGIF at (804) 367-2211.

7. Historic and Archaeological Resources. NASA must continue to coordinate this project with the Department of Historic Resources in accordance with Section 106 of the *National Historic Preservation Act*, as amended, and its implementing regulation 36 CFR 800, particularly with respect to the completion of the MOA for project impacts on historic resources. For additional information and coordination, contact Ronald Grayson, DHR at (804) 367-2323, ext. 105.

Thank you for the opportunity to review the Draft Environmental Assessment and Federal Consistency Determination for the Expansion of Wallops Flight Facility Launch Range in Accomack County. Detailed comments of reviewing agencies are attached for your review. Please contact me at (804) 698-4325 or John Fisher at (804) 698-4339 for clarification of these comments.

Sincerely,



Ellie Irons, Manager
Office of Environmental Impact Review

Enclosures

Mr. Joshua A. Bundick
Expansion of Wallops Flight Facility Launch Range

cc: Michelle Hollis, DEQ-TRO
Paul Kohler, DEQ-ORP
Tony Watkinson, VMRC
Amy Ewing, DGIF
Keith Tignor, VDACS
Matt Heller, DMME
Todd Groh, VDF
Roger Kirchen, DHR
Melanie Allen, VDOT
Steven Minor, Accomack County
Paul Berge, Accomack-Northampton PDC

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

May 26, 2009

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DEQ - Office of Environmental
Impact Review

PROJECT NUMBER: 09-083F

PROJECT TITLE: Expansion of the Wallops Flight Facility Launch Range

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

Petroleum Storage Tank Cleanups:

Twenty three petroleum releases have been reported at the Wallops Flight Facility in Accomack County, one of which is a currently active case. There are no active cases in the Launch Range area. If evidence of a petroleum release is discovered during the implementation 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 implementation of this project must be properly characterized and disposed of properly.

Petroleum Storage Tank Compliance/Inspections:

The relocation, removal or closure of any regulated aboveground or belowground petroleum storage tank(s) must be reported to the DEQ Tidewater Regional Office (attn: Tom Madigan) 5636 Southern Blvd. Virginia Beach, VA 23462. Phone (757) 518-2115. Spills or other accidental releases of petroleum or other hazardous products from construction activities must be reported to the DEQ Tidewater Regional Office Pollution Response Program (Prep) at (757) 518-2077.

Virginia Water Protection Permit Program (VWPP):

The proposed project will clearly require a permit from the VWP program for impacts to wetlands and other surface waters. As such, the project proponents should prepare and submit a Joint Permit Application for review. Provided that all necessary permits are obtained and complied with this project should be consistent with the requirements of this program.

Air Permit Program :

Wallops Flight facility has submitted an application for this project to TRO. The application was received on 5/8/09. TRO is currently in the process of determining permit applicability for this project under Air Regulation Article 6 (minor NSR).

Water Permit Program :

VPDES Permit Program – In reviewing the documentation presented for this project, it appears that there is a potential for the need to modify the existing VPDES permit for Wallops Island to address new discharges of process waste water and, possibility industrial storm water. If it is anticipated that rocket launching quench water will require pH adjustment, the discharge of this treated waste water will require a permit. It also appears that DEQ will want to evaluate whether storm water runoff from the rocket launch pads should be covered in the permit. Since the Wallops Island facility is currently in the process of VPDES Permit reissuance, it is a convenient time to discuss and evaluate the need for these possible additions.

GW – The proposed deluge system will use 100,000 gallons of potable ground water for each launch or static fire. This is not the best use of potable water from the Eastern Shore confined aquifer system and the feasibility of a reuse source of water should be investigated. If a reuse source of



DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
ENVIRONMENTAL IMPACT REVIEW COMMENTS

May 26, 2009

PROJECT NUMBER: 09-083F

PROJECT TITLE: Expansion of the Wallops Flight Facility Launch Range

water is not available then the feasibility of a shallow water table well constructed for the sole purpose of filling the storage tank should be investigated. The deluge water is proposed to be discharged to a concrete lined retention basin prior to release. The water from this basin should be recycled back to the storage tank even if some treatment is necessary. Ground water would then only be needed as make up water after the initial filling of the storage tank.

Waste Permit Program :

All demolition debris including excess soil must be characterized in accordance with the Virginia Hazardous Waste Management Regulations and disposed of at an appropriate facility. The procedures described to manage hazardous waste generated during operations appear to comply with the Virginia Hazardous Waste Management Regulations.

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

Sincerely,

Michelle R. Hollis
Environmental Specialist
5636 Southern Blvd.
VA Beach, VA 23462
(757) 518-2146
(757) 518-2009 Fax
mrhollis@deq.virginia.gov



COMMONWEALTH of VIRGINIA

L. Preston Bryant, Jr.
Secretary of Natural Resources

Marine Resources Commission
2600 Washington Avenue
Third Floor
Newport News, Virginia 23607
May 13, 2009

Steven G. Bowman
Commissioner

Mr. John E. Fisher
c/o Department of Environmental Quality
Office of the Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, Virginia 23219

Re: 09-083F
"Expansion of Wallops Flight Facility Launch Range"

Dear Mr. Fisher:

You have inquired regarding site improvements to support launch operations for the launch and/or reentry of reusable suborbital rockets from the Mid-Atlantic Regional Spaceport (MARS) on Wallops Island, Virginia.

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.

Based upon my review of the "Environmental Assessment for the Expansion of Wallops Flight Facility Launch Range", dated April 2009, it would appear that your project will not be in the Commission's jurisdiction, therefore, no authorization would be required from the Marine Resources Commission.

For your information, however, if any portion of the proposed project extends channelward of mean low water or falls within the Coastal Primary Sand Dunes/Beaches of Accomack County, authorization may be required from the Marine Resources Commission.

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

Sincerely,

A handwritten signature in black ink, appearing to read "G. Badger, III".

George H. Badger, III
Environmental Engineer

An Agency of the Natural Resources Secretariat

Web Address: www.mrc.virginia.gov

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

L. Preston Bryant, Jr.
Secretary of Natural Resources



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Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-6124

MEMORANDUM

Date: May 20, 2009
TO: John Fisher, DEQ
From: Robert S. Munson, Planning Bureau Manager, DCR-DPRR 
Subject: DEQ 09-083F, NASA Expansion of the Wallops Flight Facility Launch Range

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, part of this project is located within the North Assawoman: South 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. 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 resource of concern at this site is:

Piping Plover *Charadrius melodus* G3/S2B,S2BS1N/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).

DCR concurs with the USFWS that negative impacts to the piping plover are unlikely. However, DCR recommends continuing the monitoring of the piping plover populations. Furthermore, due to the legal

status of the Piping Plover, DCR recommends continued coordination with the USFWS and VDGIF to ensure compliance with protected species legislation.

In addition, 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;].

General Permit for Discharges of Stormwater from Construction Activities:

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_&_water/vsmp.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

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.

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR PROGRAM COORDINATION

ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY

TO: John E. Fisher

DEQ - OEIA PROJECT NUMBER: 09 - 083F

PROJECT TYPE: STATE EA / EIR FEDERAL EA / EIS SCC

CONSISTENCY DETERMINATION

PROJECT TITLE: EXPANSION OF THE WALLOPS FLIGHT FACILITY LAUNCH RANGE

PROJECT SPONSOR: NATIONAL AERONAUTICS & SPACE ADMINISTRATION

PROJECT LOCATION: OZONE ATTAINMENT AREA

REGULATORY REQUIREMENTS MAY BE APPLICABLE TO: CONSTRUCTION
 OPERATION

STATE AIR POLLUTION CONTROL BOARD REGULATIONS THAT MAY APPLY:

1. 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 E – STAGE I
2. 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 F – STAGE II Vapor Recovery
3. 9 VAC 5-40-5490 et seq. – Asphalt Paving operations
4. **9 VAC 5-40-5600 et seq. – Open Burning**
5. **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:


(Kotur S. Narasimhan)
Office of Air Data Analysis

DATE: May 8, 2009

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JUN 17 2009

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Impact Review

MEMORANDUM

TO: John Fisher, Environmental Program Planner
FROM: ^{*PKC*} Paul Kohler, Waste Division Environmental Review Coordinator
DATE: June 16, 2009
COPIES: Sanjay Thirunagari, Waste Division Environmental Review Manager; file
SUBJECT: Environmental Impact Report: Expansion of the Wallops Flight Facility Launch Range; 09-083F

The Waste Division has completed its review of the Environmental Impact report for the Expansion of the Wallops Flight Facility Launch Range project in Wallops Island, Virginia. We have the following comments concerning the waste issues associated with this project:

Only hazardous waste issues were addressed in the report. The text indicates that a search of waste-related data bases was conducted. 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 the facility is under DEQ's Federal Facilities Installation Restoration Program (VA7800020888, NASA GSFC WALLOPS FLIGHT FACILITY, LQG & TSD & VA8800010763, NASA GSFC WALLOPS FLIGHT FACILITY, LQG). The following websites may prove helpful in locating additional information for these identification number: <http://www.epa.gov/superfund/sites/cursites/index.htm> or http://oaspub.epa.gov/enviro/ef_home2.waste. Paul Herman of DEQ's Federal Facilities Program has been contacted for his review of this determination and will reply in a separate memo, if he identifies any additional issues.

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.

"Any sediment that is suspected of contamination or hazardous or solid wastes that are generated, transported, disposed, stored, or treated, as defined in the Virginia Solid and Hazardous Waste Regulations must be tested and handled in accordance with applicable Federal, State, and local laws and regulations. (Dredge spoils, when managed in accordance with the Virginia State Water Control Board or other Virginia state agencies with similar authority, are conditionally exempt from the solid waste regulations (9VAC 20-80-60.E) and are excluded from the waste barging regulations (9VAC 20-170-10). Also, any treatment, storage, or disposal of hazardous wastes must be conducted in concert with applicable state 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.

If you cannot meet the deadline, please notify JOHN FISHER at 804/698-4339 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

- A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.
- B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.
- C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MR. JOHN E. FISHER
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319
jefisher@deq.virginia.gov

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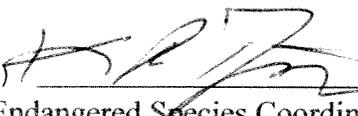
MAY 23 2009

DEQ-Office of Environmental
Impact Review

JOHN E. FISHER
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

Based on information in our database, no T/E plant and insect species are documented to occur in the vicinity of the project area. At this time, we do not anticipate this project will have significant adverse affect as it relates to VDACS' responsibilities for the preservation of agricultural lands and the protection of listed endangered and threatened plant and insect species.

(signed)  (Keith R. Tignor) (date) May 21, 2009
(title) Endangered Species Coordinator
(agency) VDACS, Office of Plant and Pest Services

Fisher, John

From: Amy.Ewing@dgif.virginia.gov
Sent: Wednesday, May 27, 2009 11:57 AM
To: Fisher, John
Cc: Ruth.Boettcher@dgif.virginia.gov
Subject: ESSLog# 26554_09-083F_Expansion of Wallops Flight Facility Launch Range

We have reviewed the draft EA for the subject project and offer the following information about the wildlife and resources known from Virginia's Barrier Islands for consideration during finalization of the EA.:

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). We recommend that impacts upon these resources associated with the proposed expansion of the WFF be fully addressed in the EA.

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).

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.

We recommend the following changes/additions to the EA:

Section 3.2.3 - Table 12: Threatened and Endangered Species in the WFF Area
 This table should be updated to reflect the state status of these species as follows:

leatherback sea turtle - Virginia status is Endangered
 hawksbill sea turtle - Virginia status is Endangered
 Kemp's Ridley sea turtle - Virginia status is Endangered
 loggerhead sea turtle - Virginia status is Threatened
 Atlantic green sea turtle - Virginia status is Threatened

5/27/2009

fin whale - Virginia status is Endangered
 humpback whale - Virginia status is Endangered
 northern right whale - Virginia status is Endangered

In addition, this table should include the following listed species also known from the vicinity of Wallops Island. The EA should fully evaluate these additional species for impacts associated with the launch and reentry of rockets from Mid-Atlantic Regional Spaceport on Wallops Island in addition to any other activities associated with the proposed upgrades to the facility.

state Threatened bald eagle
 federal Endangered state Endangered sperm whale
 federal Endangered state Endangered sei whale
 federal Endangered state Endangered blue whale
 federal Endangered state Endangered Florida manatee (subspecies of the West Indian manatee)

Further, we recommend that the table include red knot, a federal candidate species and a species listed in Tier IV (Moderate Conservation Need) of Virginia's Wildlife Action Plan's list of Species of Greatest Conservation Need.

We are concerned that the EA does not adequately characterize possible impacts upon wildlife and the resources that support them resulting from the proposed increase in rocket launches. The EA does acknowledge that animals (although they limit it to terrestrial mammals) will demonstrate a startle response. This is particularly significant in the case of nearby nesting birds. If birds are scared off their nesting sites, this may result in nest abandonment, leading to unsuccessful breeding or brooding, depending on the time of year of the launch. Over time and depending on the number of launches during the breeding season (for most species in the area, not including bald eagle, this is April 1 through August 15 of any year), this could result in significant impacts upon these populations. Rocket launches also may be detrimental to migrating species. We recommend that the PEIS, and subsequent documents, address this issue and provide alternatives for operations at Mid-Atlantic Regional Spaceport that may avoid, minimize or mitigate such impacts. This may include options such as a reduced number of launches during the breeding season. We further recommend that the PEIS and subsequent documents detail the number of planned launches from Mid-Atlantic Regional Spaceport and the affect that an increase in the number of launches, if proposed, may have on nearby wildlife resources. This should include a detailed discussion about cumulative impacts.

To our knowledge, rocket launches at this site have precluded staffs at CNWR from accessing Assawoman Island for the purposes of monitoring beach nesting birds, including piping plovers. This is significant in light of the fact that there may be adverse impacts upon these birds during launches and that the number of launches per year may increase. In this case, monitoring of these nesting birds is all the more important and should be accommodated by the FAA.

We recommend coordination with the NMFS regarding possible impacts upon sea turtle nesting habitat and impacts upon them that may result from maintenance dredging associated with the expansion of WFF. In addition, we recommend coordination with USFWS regarding possible impacts upon federally listed species associated with the proposed work.

We defer comments on the Consistency Determination for this project to VMRC as they have jurisdiction over marine resources in the CZMA.

Thank you, Amy

Amy M. Ewing
 Environmental Services Biologist
 Virginia Dept. of Game and Inland Fisheries
 4010 West Broad Street
 Richmond, VA 23230
 804-367-2211
 amy.ewing@dgif.virginia.gov

Fisher,John

From: Groh, Todd (DOF)
Sent: Thursday, June 04, 2009 12:36 PM
To: Fisher,John
Subject: Several EIRs - DOF's Response

John,

REF: Runway 16L/34R Extension, Manassas Regional Airport, Project #09-072F

The Department of Forestry finds no significant impact to the forest resources of the Commonwealth for this project.

REF: Expansion of the Wallops Flight Facility Launch Range, Project #09-083F

The Department of Forestry finds no significant impact to the forest resources of the Commonwealth for this project.

REF: Mayo River-Rakes Tract Acquisition, Project #09-099S

The Department of Forestry finds no significant impact to the forest resources of the Commonwealth for this project.

Todd A. Groh, Assistant Director
Forest Resource Management Division
Virginia Department of Forestry
900 Natural Resources Drive, Suite 800
Charlottesville, VA 22903
Phone: 434-220-9044
Mobile: 434-981-8882
Fax: 434-296-2369

If you cannot meet the deadline, please notify JOHN FISHER at 804/698-4339 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

- A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.
- B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.
- C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MR. JOHN E. FISHER
 DEPARTMENT OF ENVIRONMENTAL QUALITY
 OFFICE OF ENVIRONMENTAL IMPACT REVIEW
 629 EAST MAIN STREET, SIXTH FLOOR
 RICHMOND, VA 23219
 FAX #804/698-4319
 jefisher@deq.virginia.gov

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MAY 24 2004

DEQ-Office of Environmental Impact Review

JOHN E. FISHER
 ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

I do not anticipate an impact to mineral resources.

(signed) *Mrs. Helen* (date) *5/24/04*
 (title) *Geologist Mgr*
 (agency) *OPMME*



RECEIVED

MAY 14 2009

DEQ-Office of Environmental
Impact Review

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1700 North Main Street
SUFFOLK, VIRGINIA 23434

DAVID S. EKERN, P.E.
COMMISSIONER

May 14, 2009

To: Melanie L. Allen
Environmental Program Planner
Virginia Department of Transportation

From: Tony Gibson
Transportation Planning Engineer
VDOT Hampton Roads District

Subject: Review of Environmental Assessment for Consistency Determination
Expansion of the Wallops Flight Facility Launch Range
Accomack County, Virginia

The Hampton Roads District Planning Section has reviewed the above referenced environmental evaluation for impacts to the existing and future transportation system. Our preliminary review does not indicate any negative impacts to the transportation system at this time.

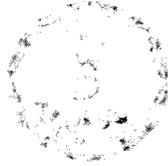
There is one transportation improvement project in the vicinity of the Wallops Flight Facility Launch Range in the FY 10-15 Six Year Improvement Program or the Secondary Six Year Program. That project is UPC #1896- Route 175- Chincoteague Bridge Replacement.

We can only conclude any additional traffic or traffic disruptions regarding this process being considered are negligible.

This improvement/construction should note coordination with VDOT's Accomack Residency is required if any facilities or improvements impact VDOT right of way. Otherwise, this office has no objections to the proposed improvements.

If further assistance is needed, please advise.

Cc: Eric Stringfield
Bobby Isdell



COMMONWEALTH of VIRGINIA

Department of Historic Resources

2801 Kensington Avenue, Richmond, Virginia 23221-0311

L. Preston Hesant, Jr.
Secretary of Natural Resources

Kathleen K. Scharkey
Director

For: (804) 367-2323
Fax: (804) 367-2323
TDD: (804) 367-2323
Voice Mail: (804) 367-2323

May 26, 2009

Mr. Randall Stanley
Coddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23377-5099

Re: Mid-Atlantic Regional Spaceport
Wallops Island
DHR File #: 2009-0691
Date Received: April 27, 2009

Dear Mr. Stanley:

We have received information regarding our review of the above referenced undertaking, including a copy of the report *DRAFT Environmental Assessment for the Expansion of the Wallops Flight Facility Launch Range* (URS: 1009). Additional information is needed before we will be able to comment on the effect of the project on historic resources. The following information is needed:

1. The Wallops Coast Guard Station and associated tower (001-0027-0100 and 001-0027-0101 respectively) are referenced in the Draft Environmental Assessment (EA). These resources have been determined Eligible for listing in the National Register of Historic Places (NRHP). Currently there is an agreement is under development with DHR to address the adverse effects to these resources, DHR File No. 2004-0147. What is the status of the agreement? The last correspondence we have concerning the agreement is dated December, 2008. Please provide a status update of the MOA including any relocation plans currently in development.
2. We recommend that you request the comments of the National Park Service (NPS) Assateague Island National Seashore regarding indirect effects to the NRHP-listed Assateague Beach Lifeboat Station. According to the NPS directory, Trish Kicklighter is Superintendent and Carl Zimmerman is the Resource Management Specialist. These comments will allow us to better comment on the effects of the proposed undertaking.

We will complete our review upon receipt of the requested data. 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

cc: John Fisher, Department of Environmental Quality

Administrative Services
111 Courthouse Avenue
Petersburg, VA 23103
Tel: (804) 367-3416
Fax: (804) 367-6106

Capital Region Office
2801 Kensington Avenue
Richmond, VA 23221
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Greater Region Office
24100 Littleport Road
Newport News, VA 23608
Tel: (757) 886-2907
Fax: (757) 886-2868

Hampton Region Office
10000 Littleport Road
Hampton, VA 23061
Tel: (757) 886-2907
Fax: (757) 886-2868

Number of copies of this document:
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10/1/09

If you cannot meet the deadline, please notify JOHN FISHER at 804/698-4339 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

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- C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

Please return your comments to:

MR. JOHN E. FISHER
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319
jefisher@deq.virginia.gov

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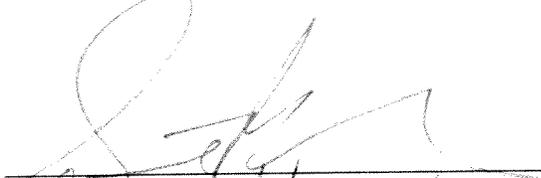
DEQ-Office of Environmental
Impact Review

JOHN E. FISHER
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

Fully Support

(signed)



(date)

April 29, 2009

(title)

County Administrator

(agency)

County of Accomack



COMMONWEALTH of VIRGINIA

I. Preston Bryant, Jr.
Secretary of Natural Resources

Marine Resources Commission
2600 Washington Avenue
Third Floor
Newport News, Virginia 23607
May 13, 2009

Steven G. Bowman
Commissioner

Mr. Joshua A. Bundick
Wallops Flight Facility NEPA Program Manager
c/o National Aeronautics and Space Administration
Goddard Space Flight Center
Wallops Flight Facility (250.W)
Wallops Island, Virginia 23337

"Expansion of Wallops Flight Facility Launch Range"

Dear Mr. Bundick:

You have inquired regarding site improvements to support launch operations for the launch and/or reentry of reusable suborbital rockets from the Mid-Atlantic Regional Spaceport (MARS) on Wallops Island, Virginia.

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.

Based upon my review of the "Environmental Assessment for the Expansion of Wallops Flight Facility Launch Range", dated April 2009, it would appear that your project will not be in the Commission's jurisdiction, therefore, no authorization would be required from the Marine Resources Commission.

For your information, however, if any portion of the proposed project extends channelward of mean low water or falls within the Coastal Primary Sand Dunes/Beaches of Accomack County, authorization may be required from the Marine Resources Commission.

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

Sincerely,

A handwritten signature in black ink, appearing to read "G. Badger, III", written over a horizontal line.

George H. Badger, III
Environmental Engineer

An Agency of the Natural Resources Secretariat

Web Address: www.mrc.virginia.gov

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



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

June 3, 2009

Mr. Joshua A. Bundick
NEPA Program Manager
NASA Wallops Flight Facility
Code 250.W/EWLR EA
Building F-160, Room W-160
Wallops Island, VA 23337

RE: Draft Environmental Assessment for the Expansion of the Wallops Flight Facility Launch Range, Wallops Island, VA

Dear Mr. Bundick:

In accordance with the National Environmental Policy Act (NEPA) of 1969 and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Assessment (EA) for the Expansion of the Wallops Flight Facility Launch Range, Wallops Island, VA.

The purpose of the proposed action is to enhance the respective National Aeronautics and Space Administration (NASA) and Mid-Atlantic Regional Spaceport (MARS) facilities at Wallops Flight Facility (WFF) to accommodate a wider variety of new launch vehicles and payloads, and to support launching of spacecraft from Pad 0-A. The need for the proposed action is to ensure the continued viability of NASA and MARS in serving the rapidly growing civil, defense, academic, and commercial aerospace market.

The Proposed Action includes expanding and upgrading NASA and MARS facilities to support up to and including medium large class suborbital and orbital expendable launch vehicle (ELV) launch activities from WFF. Components of the Proposed Action include facility construction and infrastructure improvements; testing, fueling, and processing operations; up to two static fire tests per year; and launching an additional six vehicles and associated spacecraft per year from Pad 0-A.

The examination and comparison of alternatives under consideration for a project is the heart of the environmental document, as described in the regulations of the Council on Environmental Quality (CEQ) (40 CFR 1502.14). To make a complete and comprehensive evaluation of the alternatives for the expansion of the Wallops Flight Facility Launch Range, all facets of decision-making should be thoroughly examined to assist in making a comparative analysis. It is through this comparison that the public is able to make informed decisions with



regard to the merits of the project and the advantages and disadvantages of each of the alternatives being studied. EPA is concerned that the subject draft EA does not evaluate a range of alternatives appropriate for a NEPA document. Other EPA concerns and detailed comments on the EA are presented in an attachment to this letter for your consideration.

Of additional concern are the number of proposed projects planned on Wallops Island and their impacts upon the natural environment. Although an environmental analysis is planned for the projects mentioned in Section 4.5.1, page 134, EPA suggests that it is possible that projects, including the proposed action, may be connected activities and could be addressed within one Environmental Impact Statement (EIS) in order to fully assess all actions and alternatives, and their relative environmental impacts to Wallops Island. In addition, since multiple tenants occupy the WFF, including the US Navy, it is important to address any activities and projects that may be in the foreseeable future to thoroughly assess all potential environmental impacts.

During project review to determine compliance with the Clean Water Act Section 404(b)(1) Guidelines (for potential impacts to wetlands or waters of the US), EPA will also consider a number of factors associated with the series of proposed activities on Wallops Island, including whether the projects should be evaluated together, whether alternatives were considered in sufficient detail to meet the Sec 404 guidelines, whether impacts are acceptable given that the project does not require access or proximity to the aquatic environment (is not "water-dependent").

We believe it would be prudent for NASA, EPA and other federal partners to arrange a call or meeting to discuss more details of projects planned for the Wallops Island facility. EPA appreciates the opportunity to comment on the Wallops Island Flight Facility Launch Range EA and looks forward to additional coordination on other activities that are pending for the area. If you have any questions regarding these comments, please feel free to contact Ms. Karen DelGrosso, principal staff contact at (215) 814-2765.

Sincerely,



Barbara J. Rudnick
NEPA Team Leader
Office of Environmental Programs



Attachment

Technical Comments

Alternatives

As presented in the draft EA, only the No Action Alternative and the Proposed Action were described which does not provide an adequate Alternatives Analysis. The draft EA states on page 15 that “Because hundreds of millions of dollars in existing NASA and MARS infrastructure are already available for use, and WFF contains the only NASA-owned and operated launch range, WFF is the only launch site that can meet the stated Purpose and Need of enabling low-cost, quick turn-around aerospace research and commercial access to space.” “Therefore, no other launch sites were considered to be reasonable.” It is important that the draft EA address the consideration of other alternative sites within the WFF, other NASA facilities, or other comparable sites. A comparison of proposed sites is critical to the environmental analysis.

Wetlands

Page 36 states that an extensive wetland system borders Wallops Island. The island has non-tidal freshwater emergent wetlands, several small freshwater ponds, freshwater forested shrub wetlands, estuarine intertidal emergent wetlands, maritime forests and marsh wetlands. The total size of the wetlands should be provided.

The Proposed Action would result in the loss of 5.7 acres of wetlands. One acre of tidal wetlands would be filled for construction of the Pad 0-A ramp and road improvements and 4.7 acres of non-tidal wetlands would be filled by construction of the Payload Processing Facility (PPF) and its access road. NASA has determined that there are no practicable alternatives for the location of the Pad 0-A ramps and road or the PPF due to siting constraints. It is important to note that the size and functional values of all impacted wetlands be analyzed and a mitigation plan for their replacement developed.

In addition, when the wetland impact for the Proposed Action is combined with future projects, the total wetland impact is significant. For instance, the Alternative Energy Project would impact one acre of tidal wetlands in the central part of Wallops Island, and the North Unmanned Aerial Vehicle Airstrip (UAV) would impact 21 acres of tidal and non-tidal wetlands on north Wallops Island.

Page 86 states that “Prior to construction, NASA and MARS would complete a jurisdictional wetland delineation in accordance with the USACE 1987 Wetland Delineation Manual and regional guidelines to determine the precise location and size of the wetland area that would be adversely affected.” Wetlands present on, or immediately surrounding the site should be delineated according to the 1989 Federal Manual for Identifying and Delineating Jurisdictional Wetlands. This information should be provided in the environmental documentation.



The draft EA also states, "NASA and MARS would notify the public and coordinate with applicable agencies including USACE, and VDEQ, VMRC, and the Accomack County Wetlands Board; these agencies would be notified of potential impacts to wetlands by VMRC through the JPA process." The text also reads, "Because the Proposed Action would involve federally funded and authorized impacts on jurisdictional wetlands, this EA serves as NASA's means for facilitating public review as required by EO 11990." It is important then to include within the environmental documentation all impacts to jurisdictional wetlands (including size and location of wetlands) and coordinate with applicable agencies in the planning process.

Page 87 states, "A release of unspent RP-1 from ELV may create a thin film of petroleum on the water surface near the impact area." "Due to the volume of this release into the nearby tidal wetlands, temporary impacts on water quality in the tidal wetlands may be adverse; however, because mitigation and cleanup measures would be implemented, the potential long-term impacts on tidal wetlands would not be significant." The size of the tidal wetlands should be indicated and mitigation and cleanup measures identified.

The impacts to wetlands which can occur from launch activities such as exhaust plume and other hazards such as radiant heat transfer or direct exposure to the high temperature exhaust gas mixture should be identified?

Protection of Children from Environmental Health Risks and Safety Risks

NASA prepared an Environmental Justice Implementation Plan (EJIP). Page 74 states, "The closest day care centers, schools, camps, nursing homes, and hospitals are addressed within the EJIP." The draft EA does not specify the proximity of these sensitive resource areas. A summary of the data in the EJIP should be presented.

Cultural Resources

As noted on page 76, the last survey of cultural resources was conducted in 2004. Will there be an updated survey to look at properties that may now have achieved 50 years of age since 2004?

Stormwater Management

As stated on page 84, "Permanent stormwater control measures such as retention basins would be constructed and implemented in compliance with the Virginia Stormwater Management Regulations to provide adequate drainage for the new building sites, and to mitigate the effects of increased runoff from impervious surfaces." "Therefore, with permanent stormwater measures incorporated into the site design, no significant impacts on topography and drainage are anticipated."



It is not evident from the draft EA where the retention basins would be constructed. It is important to note that according to the guidelines developed by the Interagency Stormwater/Wetlands Workgroup, it is the recommendation of the EPA to discourage the utilization of non-tidal wetland systems for stormwater treatment and management. Numerous studies have shown that siting these facilities in wetlands leads to the degradation of aquatic ecosystems by contributing to thermal pollution and downstream warming. Furthermore, an in-stream stormwater management and water quality treatment facility will alter hydrology and increase erosion and sedimentation rates. Retaining stormwater and changing the natural flow rate will alter the natural level of the water table and change the surrounding wetlands vegetation. Water temperature, habitat composition, and food availability are all directly affected when streamside vegetation is lost. Stormwater management structures in wetlands will not prevent pollutants such as spills, sediment, heavy metals, petroleum, rocket propellant, etc from entering the surface waters since the structures are already in the surface water. Wetlands are important components to the aquatic ecosystem that provide flood flow resynchronization, maintenance of water quality, habitat and nutrient uptake functions. EPA's mandates include the preservation of these environmentally significant values and functions.

Floodplains

As stated on page 88, "All facility construction and infrastructure improvements would take place within the 100-year and 500-year floodplain." "Because Wallops Island is the location for WFF's core launch range functions, and is entirely within the floodplain, no practicable alternatives exist." It is important to note that floodplain encroachment must be evaluated and coordinated with the Federal Emergency Management Agency (FEMA). Federal Executive Order 11988 (Floodplain Management) states, "If an agency has determined to, or proposes to conduct, support or allow an action to be located in a floodplain, the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains." Where no practicable alternatives exist, Executive Order 11988 goes on to state, "If property used by the general public has suffered flood damage or is located in an identified flood hazard area, the responsible agency shall provide on structures, and other places where appropriate, conspicuous delineation of past and probable flood height in order to enhance public awareness and knowledge about flood hazards." To promote public safety, we recommend that at a minimum, a permit condition be included to require conspicuous delineation of past and probable future flood heights at multiple locations across the project site. These signs should be in place within six months of permit issuance.

In addition, the draft EA states that "NASA and MARS would minimize floodplain impacts and protect and restore the natural and beneficial functions of floodplains to the maximum extent possible." The text should state how NASA and MARS plan to protect and restore the natural and beneficial functions of the floodplains.



Air Quality

Page 98 states, "The conclusion of the workshop, based on evaluation of scientific studies performed in the United States, Europe, and Russia was that the effects of launch vehicle propulsion exhaust emissions on stratospheric ozone depletion, acid rain, toxicity, air quality, and global warming were extremely small compared to other human activities." To make a fair comparison, the types of human activities referenced should be identified.

Terrestrial Habitat

Page 112 states "Long-term adverse impacts to vegetation would occur due to the loss of forest, shrub, and wetland plant communities due to the construction of the PPF, PFF, and Pad 0-A ramp and road improvement; however, these impacts would be localized and would not present a substantial adverse effect." As with wetlands, the loss of forest and shrub should be quantified and delineated.

Threatened and Endangered Species

Page 116 states, "Therefore, NASA has determined that the once a year static firing related to the Proposed Action also would not result in adverse impacts on the piping plover or its habitat." However, as stated on page 113, "...noise from static fire activities would be of longer duration, but infrequent (not more than two per year)." Clarification of exactly how many static fire activities per year should be documented. Consultation with U.S. Fish and Wildlife Service and Virginia Department of Game and Inland Fisheries is recommended to determine impacts (if any) to the piping plover or its habitat which may result from the static fire activities and open burning of rocket motors.

Miscellaneous

Page 2, Section 1.2.1.3 Federal Aviation Administration, mentions the term reentry activities/operations at least three times. Please explain and/or describe reentry activities.

Page 9 states, "Pad 0-A is a facility for launch vehicles with up to a 90,909-kg (200,000-lb) maximum load. Originally designed for the Conestoga vehicle, which was launched once in October 1995, Pad 0-A has been inactive; its launch service gantry (a large vertical structure with platforms at different levels used for erecting and servicing expandable launch vehicles [ELVs] before launch) and portions of the existing launch pad were removed in fall 2008, rendering Pad 0-A unusable for launching until a new gantry is built." Explain why the gantry was removed? Is this a typical activity after so many launches, was this done because it was found to be unsafe, or was the size of the gantry no longer useable?



Page 35 states that, “This western boundary of Wallops Island includes a section of the Virginia Inside Passage, a federally maintained navigational channel frequently used by commercial and recreational boaters alike.” What is the notification system used to warn boaters of a launch activity?

Page 102 states, “NASA and MARS personnel and the public would be notified in advance of launch dates and times.” The means of notification should be specified.

Page 105 states, “If a flight approaches corridor limits, the flight would be destroyed by Range Safety personnel.” The text should describe how the flight is destroyed, the impacts, and potential resources that may be threatened.

Page 106 states, “Fueling of ELVs with LOX and RP-1, and pressurized gases would take place at the Liquid Fueling Facility (LFF) adjacent to Pad 0-A.” The area surrounding the LFF should be described and potential resources that can be impacted from the hazardous waste and materials identified.

Page 106 states, “Payload processing may require limited use of chemicals considered toxic under CERCLA (NASA, 1997).” Describe the type of toxic chemicals used.

Page 109 states, “Potential toxic corridors (transportation routes) are defined in mission-specific Operations and Safety Directives—further information is provided in the Transportation discussion in Section 4.4.5 of this EA.” It is not apparent in Section 4.4.5 that a discussion was provided.

Page 109 states, “In addition, the hazardous waste streams likely to be generated by the Proposed Action are not anticipated to substantially increase the amount of hazardous waste currently generated by WFF.” This statement needs to be explained. “Hazardous waste streams” should be described.





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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May 26, 2009

Mr. Randall Stanley
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 2337-5099

Re: Mid-Atlantic Regional Spaceport
Wallops Island
DHR File #: 2009-0691
Date Received: April 27, 2009

Dear Mr. Stanley:

We have received information regarding our review of the above referenced undertaking, including a copy of the report *DRAFT Environmental Assessment for the Expansion of the Wallops Flight Facility Launch Range* (URS: 1009). Additional information is needed before we will be able to comment on the effect of the project on historic resources. The following information is needed:

1. The Wallops Coast Guard Station and associated tower (001-0027-0100 and 001-0027-0101 respectively) are referenced in the Draft Environmental Assessment (EA). These resources have been determined Eligible for listing in the National Register of Historic Places (NRHP). Currently there is an agreement is under development with DHR to address the adverse effects to these resources, DHR File No. 2004-0147. What is the status of the agreement? The last correspondence we have concerning the agreement is dated December, 2008. Please provide a status update of the MOA including any relocation plans currently in development
2. We recommend that you request the comments of the National Park Service (NPS) Assateague Island National Seashore regarding indirect effects to the NRHP-listed Assateague Beach Lifeboat Station. According to the NPS directory, Trish Kicklighter is Superintendent and Carl Zimmerman is the Resource Management Specialist. These comments will allow us to better comment on the effects of the proposed undertaking.

We will complete our review upon receipt of the requested data. 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

cc: John Fisher, Department of Environmental Quality

Administrative Services
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July 15, 2009

Mr. Randall Stanley
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 2337-5099

Re: Mid-Atlantic Regional Spaceport
Wallops Island
DHR File #: 2009-0691
Additional Information Received: July 2, 2009

Dear Mr. Stanley:

We have received information regarding our review of the above referenced undertaking, including a copy of the report DRAFT *Environmental Assessment for the Expansion of the Wallops Flight Facility Launch Range* (URS: 1009) and comments from the Assateague Island National Seashore. Based upon the information provided, we concur with your determination that the proposed alternatives detailed in the aforementioned report 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.

Additionally, we look forward to further coordination on this project and the Memorandum of Agreement concerning the Wallops Coast Guard Station and associated tower.

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

cc: John Fisher, Department of Environmental Quality
Carl Zimmerman, Assateague Island National Seashore



COMMONWEALTH of VIRGINIA

L. Preston Bryant, Jr.
Secretary of Natural Resources

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August 24, 2009

Mr. Randall Stanley
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 2337-5099

Re: Mid-Atlantic Regional Spaceport
Wallops Island
DHR File #: 2009-0691
Additional Information Received: August 12, 2009

Dear Mr. Stanley:

We have received information regarding our review of the above referenced undertaking, including additional alternatives to be incorporated with this project. Based upon the information provided, we concur with your determination that the proposed alternatives detailed in the aforementioned report 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.

Additionally, we look forward to receipt of the final Environmental Assessment for this project incorporating all alternatives in a single document.

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

cc: John Fisher, Department of Environmental Quality
Carl Zimmerman, Assateague Island National Seashore



United States Department of the Interior
National Park Service
Assateague Island National Seashore
7206 National Seashore Lane Berlin, Maryland 21811



4190 (H4217)

DOL - 2 2009

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

Dear Mr. Bundick:

Thank you for the opportunity to comment on the draft environmental assessment for the proposed expansion of the launch range at the Wallops Flight Facility. After consulting with our cultural resource advisors, we concur with your assessment that the proposed action will not result in adverse indirect effects on the cultural landscape and vistas associated with the Assateague Beach Coast Guard Station located on Assateague Island, Virginia. As you noted, the existing viewshed from the perspective of the Coast Guard Station looking towards Wallops Island has been significantly altered by the previous development of facilities supporting the Wallops Flight Facility mission. As such, the proposed new infrastructure will not appreciably alter the existing visual characteristics of the area.

It is, however, unfortunate that the proposed action may necessitate the removal and/or demolition of the historic Wallops Beach Lifeboat Station and Observation Tower. As you are aware, the Wallops facility was one of three Coast Guard lifeboat stations operating in the vicinity; the other two being the former Pope Island Station (no longer extant) and the Assateague Beach Station. With the loss of the Wallops Station, the Assateague Beach Station would become the sole reminder of the historic activities of the Coast Guard in the Chincoteague area; a significant component of the region's cultural heritage.

According to the Environmental Assessment, the future of the Wallops Station is still being negotiated with the Commonwealth of Virginia. Should there be a need to mitigate the impacts of whatever disposition is ultimately selected, I would ask that you consider the Assateague Beach Station as a potential mitigation option. The two Stations were contemporaneous, similar in purpose and many physical characteristics, and located in close proximity to one another. As such, action to enhance the conservation of and public access to the Assateague Beach Station seems to be an entirely reasonable approach to mitigating the loss of the Wallops Station.

Should the need for mitigation come to pass, I would be pleased to discuss the matter in greater depth at your convenience. Again, thank you for the opportunity to comment on the environmental assessment.

Sincerely,

Trish Kichlighter

cc: Ronald Grayson, Virginia Department of Historic Resources
Ethel Eaton, Virginia Department of Historic Resources
Lou Hinds, Chincoteague National Wildlife Refuge

Silbert, Shari A. (WFF-200.C)[EGG, Inc. (WICC)]

From: Bundick, Joshua A. (WFF-2500)
Sent: Wednesday, May 27, 2009 8:07 AM
To: Suzanne_Richert@URSCorp.com; Silbert, Shari A. (WFF-200.C)[EG&G, Inc. (WICC)]
Subject: FW: Launch range expansion comments
Attachments: NASA- Launch range expansion- draft EA comments.doc

-----Original Message-----

From: Ortiz, Adrianna CIV SCSC, PW [mailto:adrianna.ortiz1@navy.mil]
Sent: Tuesday, May 26, 2009 4:45 PM
To: Bundick, Joshua A. (WFF-2500)
Cc: Ailes, Marilyn CIV SCSC, M221
Subject: Launch range expansion comments

I apologize for getting these comments to you past the deadline. Once again these are only the comments from within the environmental office, not of the Commanding officer or anybody else in the main office. The summer intern and myself reviewed the entire document upon which we based our comments. If you have question please contact feel free to contact me.

Adrianna Ortiz

Student Ecologist
Navy Surface Combat Systems Center
Wallops Island, VA 23337
Phone: (757) 824-2083
Fax: (757) 824-2086
E-mail: adrianna.ortiz1@navy.mil

Subject: LAUNCH RANGE EXPANSION DRAFT ENVIRONMENTAL ASSESSMENT

1. Thank you for the copy of the Draft Environmental Assessment (EA) for the proposed launch range expansion on Wallops Island, Virginia. We at Surface Combat Systems Center Environmental Office have reviewed the proposal and would like to address a few issues. We understand that due to the need of the expansion and the specific details therein, there is only one alternative action mentioned. However, we feel that there needs to be alternatives listed in detail for various pieces such as possible locations for roads and possible sites for wetland mitigation. The destruction to wetlands is not clearly explained. Acreage is given, but the specific locations and wetland type are missing. We recommend that further details be given on wetland destruction as well as mitigation, along with possible locations of roads to the proposed buildings.

2. NASA has been actively developing plans to control if not reverse shoreline erosion on the southern end of Wallops Island for some time now. Although this draft EA does discuss the problems of shoreline erosion, no actions are being taken within this project to ensure the future of the proposed structures, especially at Pad 0-A. It is unclear from Figure 5 if the revised launch pad will have a new building associated with it. We recommend that the figure include a drawing of the building if applicable. We also recommend that forethought in engineering include mitigating the risk of storm overwash by elevating structures off the ground, and/or enclosing the various tanks (gases and oils) to shield them from the salt water preserving their integrity.

3. Modifications to the boat dock on the northern end of Wallops are listed, but are lacking detail. The draft EA does not mention the importance to wildlife of the waters surrounding this boat dock, although it does mention the essential fish habitat (EFH) near pad 0-A. We recommend that more detail be given for which part of the boat dock area will be hardened and by what means. An additional figure would be very helpful to support the text. Also we recommend that the National Marine Fisheries Services be consulted to ensure that the marsh adjacent to the boat dock is not classified as EFH.

4. The increase of water usage due to the proposed action was not considered significant since the total usage was still within the constraints of the current permit. We would like to reiterate that the expected monthly increase of 44% and expected

annual increase of 25% would still increase the demand to the sole source aquifer. We recommend that the water be conserved as much as possible to ensure future water supplies to Wallops Island.

5. From the description given, the deluge basin will be completely filled prior to each launch. After the launch the pH levels of the water within will be tested before being released into an unlined containment pond. From there the water will drain into the surrounding ecosystem until completely drained from the basin. We would like to mention that the surrounding water is very shallow and has a low turnover rate. By introducing large amounts of nitrogen sources this water is likely to undergo eutrophication, leading to other water quality problems such as low oxygen levels (Ryther and Dunstan 1971). Since this area has been labeled as EFH, it is reasonable to assume that degraded water quality will greatly impact the fish community (Kemp et al. 2005). We recommend that other water quality parameters such as total nitrogen or other possible contaminants be tested for before release to the secondary containment pond. We also recommend that potential impacts to water quality be further investigated and minimized where possible.

6. Section '4.2.4 Noise', discusses the potential noises from construction, transportation, and launches. Piping plovers are mentioned as a potential receptor and more details are given later. Under the subheading 'sonic booms', it states that noise impacts to wildlife will be discussed below. However, this subject is not brought up until '4.3.2 Terrestrial Wildlife and Migratory Birds, and even there the information given is vague. The proposed payload fueling facility building is near the known peregrine falcon (listed by Virginia as threatened (VDGIF 2009)) nest on Wallops Island, VA. We recommend that the potential impact from noise disturbances be further evaluated for other wildlife, especially the peregrine falcon.

7. Laser use is brought up and some background information on the various classes of lasers is described. For this specific proposal the class of lasers is not mentioned, nor are the potential impacts to wildlife. We recommend that details be given to better characterize the use and potential risks of lasers.

8. In section '4.3.2 Terrestrial Wildlife and Migratory Birds', under 'launch activities', there is confusion about the closures of Assateague during the launches. First it states that all

launches from Pad 0-B require the closure of the southern end of Assateague Island. It then contradicts by stating that Assateague has become a popular observation location for viewing the launches. The last portion of this section digresses as it begins to talk about the inputs of educational resources NASA has brought to the community. We recommend that the role of Assateague during launches be clarified and the information regarding education be placed in the appropriate section, '4.4.1 Population, Employment and Income'.

9. Section, '3.4 Department of Transportation Section 4(F) Lands' discusses regulations concerning the conversion of publicly owned parks, recreational areas, wildlife and waterfowl refuges, and public or private historical sites to non-recreational lands. Section '3.4.2 Public Lands and Refuges', mentions the validity of these regulations not only to public land holdings, but also to 'Federal lands'. It is our understanding that the incorporation of 'federal lands' in this section is an error. We recommend its removal or clarification if applicable.

10. Last we have noticed that approximately one whole page from the reference section ('Section Eight References') was from a NASA source. We recommend that outside sources be integrated into the document to support in-house research effort findings.

Literature cited

- Kemp, W. M., W. R. Boynton, J. E. Adolf, D. F. Boesch, W. C. Boicourt, G. Brush, J. C. Cornwell, T. R. Fisher, P. M. Glibert, J. D. Hagy, L.W. Harding, E. D. Houde, D. G. Kimmel, W. D. Miller, R. I. E. Newell, M. R. Roman, E. M. Smith, J. C. Stevenson. 2005. Eutrophication of Chesapeake Bay: historical trends and ecological interactions. Marine Ecological Progress Series 303:1-29
- Ryther, J. H. and W. M. Dunstan. 1971. Nitrogen, phosphorous, and eutrophication in the coastal marine environment. Science 171(3975):1008-1013
- Virginia Department of Game and Inland Fisheries (VDGIF) Special Status Faunal Species in Virginia. Updated February 3, 2009.
<http://www.dgif.virginia.gov/wildlife/virginiatescspecies.pdf>



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL ENVIRONMENTAL SATELLITE, DATA
AND INFORMATION SERVICE
WALLOPS COMMAND AND DATA ACQUISITION STATION
WALLOPS, VIRGINIA 23337

May 28, 2009

Joshua A. Bundick
NEPA Program Manager
National Aeronautics and Space Administration
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337-5099

Dear Mr. Bundick:

The National Oceanic and Atmospheric Administration (NOAA) has reviewed the Draft Environmental Assessment (EA) for the Expansion of the Wallops Flight Facility Launch Range.¹ The expansion is proposed to upgrade the existing launch range at Wallops Island, with the overall purpose to achieve an increase in the number of medium-to-large, suborbital-to-orbital spacecraft launches, from a maximum of 12 per year to a maximum of 18 per year. The expansion would also permit an additional two static test firings per year.

This letter provides comments regarding the content of the EA in two areas of NOAA concern. Toward that end, the mission of the WCDAS, along with mission critical usage of radio frequencies and possible impacts to that usage, are briefly described.

The NOAA Wallops Command and Data Acquisition Station (WCDAS) at the Wallops Main Base is located approximately 5-8 miles NNW to N of the various facilities associated with the launch range expansion project. The mission of WCDAS includes ensuring scheduled flow of accurate weather and climate data from NOAA satellites to designated user subsystems. Its mission includes executing spacecraft (satellite) commands and schedules, acquiring, maintaining, and distributing a continuous flow of meteorological satellite data via two-way radio frequency (RF) data links, and managing, operating, and maintaining the station. Consequently, the WCDAS is an extensive user of the RF spectrum employing numerous frequency bands for multiple purposes. Studies and analyses have been performed in the past to ensure protection of the WCDAS, and similar NOAA facilities, and these studies include descriptions of spectrum usage and assessments of RF Interference (RFI).^{2,3,4,5,6} It is in the nature of satellite links that they are sensitive to RFI due to the requirement to detect very low power signals from distant satellites. Geostationary and low earth orbiting, national and international, satellite systems are accessed and the station uses two-way microwave and domestic satellite data links to fulfill its mission. The use of RF spectrum is critical to fulfilling the mission of WCDAS.

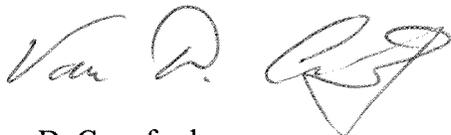


It is noted that the draft EA presented a rather thorough examination of the various potentials for impacts to the biological and socio-economic environmental resources. With regard to the assessment of the potential impacts to the physical environment, NOAA has identified two areas that are briefly discussed in the EA for which there is not enough information to permit an assessment of potential impact to the WCDAS:

1. The EA contains several brief references to communications instrumentation (p 9) and ground-based surveillance and radar tracking systems (pp 9 and 11) that will be employed during launch activities. Additionally, the use of RF telemetry systems and data links between the spacecraft and ground systems is to be expected. The NOAA WCDAS has always been able to coexist with past launches without significant disruption to NOAA activities. However, the text contained in section 2.2.1.7 on p 22 of the EA mentions minor modifications to "communications support, radar, and antenna improvements". Without specific technical information regarding the proposed modifications and improvements, NOAA is unable to assess any potential impacts to sensitive NOAA receiving systems from changes to said systems. Information required to perform an assessment might include a brief description of the equipment improvements or modifications, along with the technical characteristics of the improved/modified systems (i.e. changes in transmitter power output and/or antenna types/gains, and changes in antenna locations, orientation, or pointing direction, etc).
2. The EA contains reference to loss of forest (p 112) due to construction activities. There is evidence from past technical studies that specific stands of the existing natural tree cover, located between the various Wallops Island transmitter systems and the Wallops Flight Facility, provide a degree of RF isolation (increased propagation loss) to potential interfering signals from high-power transmitters located on Wallops Island and vicinity. This RF isolation currently contributes to allowing the sensitive receiver systems at the WCDAS to generally operate satisfactorily with transmitting systems in the local environment. Without more specific information regarding areas of trees or vegetation that are designated for removal, NOAA is unable to determine if performance degradation to the sensitive WCDAS receiver systems may increase.

In summary, coordination and planning for the launch range expansion will be of interest to the WCDAS. The draft EA (Reference 1) should identify: 1) specific modifications (if any) proposed for the locations or technical characteristics of the communications, radar, and telemetry systems, and 2) the stands of tree cover or vegetation that is proposed for removal on a suitable map.

Sincerely,



Van D. Crawford
Manager, Wallops CDA Station