



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

FEB 06 2012

Joshua Bundick
 NASA Wallops Flight Facility
 Code 250. W
 Wallops Island, VA 23337

RE: Draft Environmental Assessment (DEA) North Wallops Island Unmanned Aerial Systems Airstrip, Accomack County, Virginia, December, 2011

Dear Mr. Bundick:

In accordance with the National Environmental Policy Act of 1969 (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Assessment for the North Wallops Island Unmanned Aerial Systems (UAS) Airstrip located at the National Aeronautics and Space Administration's (NASA) Wallops Flight Facility (WFF) on Wallops Island, Accomack County, Virginia. The proposed project involves the construction and operation of a new UAS airstrip that would be paved for the length of 3,000 feet (ft) by 75 ft wide located on the north end of Wallops Island. The purpose and need of the proposed action is to provide an adequately-sized UAS airstrip that would be capable of supporting the testing and deployment of existing and future UAS and UAS-based scientific instruments at WFF due to limitations on the size and use of the existing UAS airstrip located on the southern end of Wallops Island. The existing airstrip was expanded in 2005 to measure 1,500 ft by 50 ft, with the Viking 300-class as the largest UAS being flown. The Viking 400-class UAS model is proposed for the future operations at WFF. The existing airstrip is limited by its north-south orientation, inundation from storms, operational constraints from nearby launch pads, and size not capable of supporting the Viking 400-class UAS.

NASA proposed two alternatives, including the no action and the preferred alternative. The preferred proposed alternative involves the construction of a 3,000 ft paved airstrip, including 2,500 ft with additional 250 ft paved clear zone on each end, by 75 ft located entirely within NASA's restricted airspace. The proposed airstrip would be elevated approximately 3 ft above the existing ground and also requires clearing of adjacent vegetation within the runway safety area. Also included in the construction of the airstrip are associated roadway improvements and a staging pad for aircraft and support vehicles. The Draft EA also briefly discusses several other alternatives that were not carried forward to detailed study, which include off-site locations, ie Langley Research Center or the Naval Air Station Patuxent River, as well as other alternatives on WFF property including two alternatives located on the north end of Wallops Island.



EPA appreciated the opportunity to review the environmental document prepared to assist decision-making for this project. EPA believes the study is deficient in some areas, such as wetland avoidance and minimization, compensatory mitigation, and clarification on runway dimensions and features, which would aid in establishing need for the project, and therefore selection of an appropriate action. EPA supports minimization of impacts to aquatic and terrestrial environment, and supportive of the use of innovative stormwater management and low impact development techniques incorporated where appropriate in upland locations into project design. Please see detailed comments regarding purpose and need, alternatives analysis, and assessment of impacts as an enclosure to this letter.

In the event that the proposed action is constructed as described in this Draft EA, approximately 8 acres of total vegetation would be cleared and 2.47 acres of wetlands would be filled. While impacts to vegetation and wetlands had decreased from previously considered airstrip designs that would result in a longer runway, EPA remains concerned about adverse impacts to wetlands on the north end of Wallops Island and on Wallops Island as a whole. It appears that reasonable avoidance and minimization measures to further reduce impacts to wetlands may still exist. Particularly the location of the proposed staging pad, dimensions of the airstrip, and the elevated height of the proposed airstrip. A Clean Water Act (CWA) Section 404 permit would be necessary for the construction of the proposed action, as it is currently designed. The CWA 404b(1) Guidelines only allows the least environmentally damaging practicable alternative (LEDPA) to be permitted. As described in this EA, it is not clear that the proposed alternative represents the LEDPA.

Also of concern to EPA is proposed compensatory mitigation for unavoidable wetland impacts. NASA is currently proposing to mitigate by paying into Virginia's in lieu fee (ILF) program for use in the Virginia Aquatic Resources Trust Fund which is administered in partnership with the U.S. Army Corps of Engineers (Corps), Virginia Department of Environmental Quality (DEQ) and the Nature Conservancy. EPA is concerned that the proposed mitigation technique will not adequately compensate for lost functions and values in the subwatershed where the project is located. EPA and other resource agencies have previously expressed concern with the use of ILF for this project and that a specific project would need to be identified with measureable environmental benefit and would need to be located in the same watershed where impacts are occurring. EPA has previously expressed and still feels that a thorough evaluation of on-site, off-site or a combination of mitigation opportunities needs to be completed and explored before committing to payment into ILF. It is not clear to EPA that a specific project through ILF has been identified at this time, nor has investigation occurred for on-site mitigation opportunity. Full avoidance and minimization should be demonstrated prior to commitment of compensatory mitigation. At this time, EPA is concerned that adequate mitigation to offset for unavoidable impacts may not be available.

Additional detailed comments and concerns are provided as an enclosure to this letter. We would appreciate the opportunity to discuss our questions and comments at your convenience. Thank you for allowing EPA the opportunity to review and comment on the DEA for the North Wallops Flight Island Unmanned Aerial Systems Airstrip. These comments have been coordinated with EPA's wetland program reviewer, Ms. Carol Petrow. If you have



questions regarding these comments, the staff contact for this project is Ms. Alaina DeGeorgio; she can be reached at 215-814-2741.

Sincerely,



Barbara Rudnick
NEPA Team Leader

Enclosure

cc. Dave O'Brien, NOAA
Kim Smith, FWS
Steve Gibson, USACE



Detailed Comments on the North Wallops Flight Island Unmanned Aerial Systems Airstrip Draft EA

Purpose and Need & Alternatives Analysis

- As mentioned above the proposed action is needed due to several constraints on the existing UAS airstrip located on the southern end of Wallops Island, which was last expanded in 2005. When EPA was first contacted for scoping for the proposed project in 2010, the existing airstrip expansion construction was barely five years old. While EPA can appreciate that the UAS technology and scientific community using these aircraft is growing rapidly, EPA remains concerned that the speed at which new needs are identified have and will continue to outpace the facilities capacity. It is the concern of EPA that natural resources will be impacted multiple times. Clarify the intended lifespan for the proposed airstrip and how long the proposed action is expected to meet the needs of the scientific community. Discuss any plans or restrictions being discussed at NASA that might help ensure operational and safety limitations, currently occurring at the southern airstrip, are prevented for the proposed northern airstrip. 4
4a
- Page 2-2, criterion 3 mentions a proposal to construct a payload processing and fueling complex less than 2 miles from the launch range. Is this being proposed to be moved as part of this project? Is separate NEPA documentation being prepared for the payload processing facility? 5
- Page 2-4 states that clear zones are typically unpaved. It is not clear to EPA why clear zones proposed for this project would need to be paved if they are typically left unpaved. Please clarify why in this case paving of the clear zone was determined to be necessary. It is also not clear why an additional grass buffer is required beyond the proposed 250 ft clear zone. What purpose does the grass buffer serve that the clear zone does not? Discuss the selection of a buffer/clearing width. 6
- Please provide documentation that clearly states that the proposed craft Viking 400-class UAS, which has a wingspan of less than 20 ft, requires a 2,500 runway with a 75 ft width. No discussion was included in the EA as to why the 75 ft width was selected or determined to be necessary. It is not clear if a narrower runway, and/or even a slightly shorter runway (2,000 or 2,200 ft), would meet the identified needs. It should also be noted a 2,500 ft runway can accommodate a much larger aircraft including even small cargo or passenger planes. Documentation for proposed runway dimensions needs to be supported. 7
 - What is the predicted percent of the maximum 1,040 UAS flights annually that will be the larger Viking 400-class or equivalent? What percent of the total annual flights will be Viking 300-class or smaller that can be flown on the existing airstrip? 8
- The Naval Air Station Patuxent River was one off-site locations considered but not carried forwarded for detailed analysis. In Table 2, this alternative meets 5 of the 6 criterion applied in considering alternatives outside of WFF. The only criterion that wasn't met was criterion 1- meet needs of Goddard Space Flight Center (GSFC) UAS Scientific and research community. The apparent reason why this criterion was not met is said because WFF is too far from the Naval Air Station Patuxent River, 200 miles. However, WFF is located 170 miles from GSFC and the Naval Air Station is only 70 9



miles from GSFC. If the need is proximity to GSFC scientists, this alternate location appears to meet this need. It also appears that the Naval Air Station would be continue to be able to meet coastal zone/ocean research objectives as it is located on the Chesapeake Bay. Please clarify why this location was not considered further as it appears to meet all of the defined criteria.

- Off-site parcels were also considered but dismissed in the alternatives analysis. While off-site parcels would be outside of the restricted airspace as it currently exists, EPA is aware that NASA is attempting to coordinate expansion of restricted airspace in the upcoming site-wide EIS. It is not clear why an off-site parcel could not be included in an expansion. It is also not clear why UAS represent and pose an unacceptable risk to the public and residential property from mishaps that could occur with untested/unproven UAS. The document explains that UAS crash rates are very low and have not had a crash at WFF to date. The EA also details that UAS crashes do not represent a severe risk to unexploded ordinances that are located surrounding the proposed airstrip and also do not represent a crash risk to piping plover nests that are located on the north end beach. Please make clear what the risk of UAS crashes/near misses is.
- A staging pad is proposed with the associated action. This location and placement of this pad was discussed at length with an interagency group in February 2011, which included EPA, Corps, NASA and several other resource agencies. It is EPA recollection of this meeting, which is referred to the project Joint Permit Application (JPA) that was recently released, it was decided that the pad did not have to be located in wetlands and would be moved outside of any wetlands. Relocating the pad outside of wetlands represents a clear avoidance and minimization opportunity. A very brief discussion on why the pad was not relocated as discussed was included in the EA and recent JPA. Please provide documentation that emergency and support vehicles cannot drive on the airstrip or transition from a concrete surface to an asphalt surface. The existing runway has two pads that can only be accessed by driving on the runway; it is not clear why this does not represent a reasonable and practicable alternative for the proposed project. Evaluation of alternate pad size, shape and material, for example can the pad be put on piers, is needed. A Clean Water Act (CWA) Section 404 would be necessary for the construction of the proposed action, as it is currently designed. The CWA 404b(1) Guidelines only allows the least environmentally damaging practicable alternative (LEDPA) to be permitted. As described in this EA, it is not clear that the proposed alternative represents the LEDPA.
- Elevation of the airstrip is proposed to be 3 ft above existing ground; this is stated to be this height needed in order to accommodate the stormwater infiltration trench that would surround the airstrip. Drawings of design cross-sections for airstrip and bio-trenches should be clear and legible. Why do trenches need to be elevated? As currently designed, below the base of trenches would be additional compacted fill, and trenches do not connect to existing uncompacted ground levels or groundwater. It is not apparent how this disconnect enhances or promotes infiltration. Please clarify the design and intended rates of infiltration volume or velocity that the design will achieve. If trenches do not have to be elevated and can put in closer to existing ground levels, the amount of fill needed and the footprint of the project would be smaller. A smaller footprint that is not as elevated may allow for additional avoidance and minimization opportunities. This opportunity should also be considered despite the known presence of unexploded

ordinances, which can be remediated if necessary. It is also not clear if the trench can only be located on one side to further minimize impacts.

17

Resource impacts

- Please clarify what the expected noise levels from construction and operation of the proposed action. It appears that noise levels on this remote part of Wallops Island could raise from 47-57 dBA to a high of 73 dBA. It is not clear what the operational noise would be at 500ft or below the flight path at ground level. Discuss if noise during take-off or landing would be louder than during flight, and if these conditions were taken into account for the noise analysis. 18
- Page 3-14 states that maritime habitats are well outside the project ground disturbance zone. Does this include maritime forests shown on Figure 12? 19
- It is not clear how many acres of wetland will be impacted by conversion and clearing. EPA suggests that compensatory mitigation for conversion of wetlands also be considered. Discuss any temporary impacts to wetlands for construction and staging. Indirect impacts from changes in flow and water movement should also be included. 20
- Page 3-40 mentions the use of retaining walls and trenches. More information about the use of retaining walls and trenches is needed. Show where the retaining wall is proposed for use. Would the use of retaining walls reduce the amount of impact to wetlands? Stormwater management should not be located in wetlands. 21
- EPA encourages NASA to continue working with FWS to monitor and minimize effects to rare, threatened and endangered species that are located on the north end of Wallops Island. 22
- An invasive species management plan may be necessary to prevent further spread of common reed during the construction of the proposed project. Further spread of this invasive species and loss of native wetland vegetation is of concern to EPA. 22
- Page 5-9 discusses potential cumulative effects on wetlands, saying that the wetland loss “would represent a long-term impact; however, WFF has compensated for more wetlands impacts than have occurred in the recent past for activities outside of the geographic scope of this proposal.” While it may be true that WFF has compensated for past wetland impacts, it has not been determined that the compensatory mitigation be used to offset lost functions and values of resources considered and cannot be used to offset the adverse wetland impacts associated with this or other future projects. It is the concern of EPA that adverse cumulative effects to wetlands may be occurring at Wallops Island and may continue to occur in the future. 23
- What is the rationale for cumulative impact spatial and temporal boundaries that were used for the analysis? The spatial boundary for this EA was limited to only the north end of Wallops Island. EPA may suggest that a larger spatial boundary be considered. 24





United States Department of the Interior

FISH AND WILDLIFE SERVICE



Chincoteague National Wildlife Refuge
8231 Beach Road, Chincoteague, VA 23336

February 3, 2012

Mr. Joel T. Mitchell
Lead, Natural Resources
NASA Goddard Space Flight Center's
Wallops Flight Facility, Code 250.W
Wallops Island, Virginia 23337

Dear Mr. Mitchell:

As indicated in NASA's Environmental Assessment for the proposed Unmanned Aerial Systems (UAS) runway on the northern end of Wallops Island, the U.S. Fish and Wildlife Service (Service) has coordinated with NASA regarding the potential impacts of the project on federally listed candidate, threatened, and endangered species; bald eagles; and impacts to wetlands, and measures that NASA could adopt to reduce potential impacts.

The conservation measures NASA has adopted in their proposed action to avoid impacts to these federal trust resources will result in reduced adverse effects, and will tend to maintain habitat and environmental conditions favorable for listed species, as well as the wide variety of other wildlife species that occurs in the area. Proposed monitoring of the effects of UAS on shorebirds may also help address information gaps that will allow for improved protection of shorebirds, both on Wallops Island and in other locations where aircraft operations can affect shorebirds. The Service appreciates the opportunity to work with NASA to promote conservation of fish, wildlife, plants, and their habitats, while implementing their mission.

Should you have any questions, I may be reached via email at Louis_Hinds@fws.gov or by phone at (757) 336-6122 Ext. 328.

Sincerely,

Louis Hinds
Refuge Manager
Chincoteague National Wildlife Refuge



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

JAN - 5 2012

Joel T. Mitchell
 National Aeronautics and Space Administration
 Goddard Space Flight Center
 Wallops Flight Facility
 Wallops Island, Virginia 23337
 Attn: 250.W

Dear Mr. Mitchell,

This is in response to your letter dated December 21, 2011, requesting our review and comments on the National Aeronautics and Space Administration's (NASA) Draft Environmental Assessment (EA) for the proposed Unmanned Aerial Systems Airstrip at your Goddard Space Flight Center, located on the north end of Wallops Island in Accomack County, Virginia.

As noted in our August 24, 2010, letter to NASA regarding this proposal, several species of sea turtles listed by NOAA's National Marine Fisheries Service (NMFS) as threatened and endangered occur seasonally in the coastal waters of Virginia. However, as no in water work is proposed, no listed species will be affected by the construction of the Unmanned Aerial Systems Airstrip. Based on this information, NMFS does not intend to offer additional comments on the Draft EA and thus, no further coordination with NMFS Protected Resources Division is needed. Should project plans change or new information become available that changes the basis for this determination, further coordination should be pursued. If you have any questions regarding these comments, please contact Danielle Palmer at (978) 282-8468.

Sincerely,

Mary A. Colligan
 Assistant Regional Administrator
 for Protected Resources

Enclosure

File Code: NASA Draft EA Unmanned Aerial Systems Airstrip





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

AUG 24 2010

Joel T. Mitchell
National Aeronautics and Space Administration
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, Virginia 23337
Attn: 250.W

Dear Mr. Mitchell,

This is in response to your letter dated July 14, 2010 regarding the National Aeronautics and Space Administration's (NASA) Goddard Space Flight Center's Wallops Flight Facility's proposed Unmanned Aerial Systems Airstrip, located on the north end of Wallops Island in Accomack County, Virginia.

Several species of sea turtles listed by NOAA's National Marine Fisheries Service (NMFS) as threatened and endangered occur seasonally in the coastal waters of Virginia. However, as no in water work is proposed, no listed species will be affected by the proposed project. As such, no consultation pursuant to Section 7 of the Endangered Species Act of 1973, as amended, is required. Should project plans change or new information become available that changes the basis for this determination, consultation should be reinitiated. If you have any questions about these comments, please contact Danielle Palmer at (978)282-8468.

Sincerely,

A handwritten signature in black ink, appearing to read "Mary A. Colligan".

Mary A. Colligan
Assistant Regional Administrator
for Protected Resources



Hoffman, Charee

Subject: UAV EA**From:** Silbert, Shari A. (WFF-200.C)[EG&G, Inc. (WICC)] [<mailto:shari.a.silbert@nasa.gov>]**Sent:** Thursday, January 05, 2012 3:04 PM**To:** Hoffman, Charee**Cc:** Mitchell, Joel T. (WFF-2500)**Subject:** FW: UAV EA*Shari A. Silbert*

URS Corporation
 Environmental Scientist
 NASA Wallops Flight Facility
 Wallops Island, VA 23337
 ph (757) 824-2327
 fx (757) 824-1819
Shari.A.Silbert@nasa.gov

Please visit our website at [WFF Environmental Office](#)*"The contents of this message do not reflect any position of the National Aeronautics and Space Administration or Goddard Space Flight Center."*

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

From: Ailes, Marilyn CIV SCSC, X31 [<mailto:marilyn.ailes@navy.mil>]**Sent:** Thursday, December 29, 2011 3:34 PM**To:** Silbert, Shari A. (WFF-200.C)[EG&G, Inc. (WICC)]**Subject:** RE: UAV EA

Comments on the runway on the north end:

Noise: You are using loudspeakers at the launch sites which are exceedingly loud; they are enough to startle my dog inside my home, about 2 miles away. Will you be using such loudspeakers on the north end? They would be quite disruptive, but you don't mention them. | 1

Traffic: You mention about six vehicles per launch going up the road, up to three times a day (1,000 launches/year). This is a lot of traffic, but you don't address this disturbance. Would it affect peregrines? Probably not, but you should mention it. It would be a disturbance to migrating birds coming south in the fall. Probably significant. | 2

P. 3-13 and 31: myrtle plants are now 'Morella'. Taxonomists playing their games. | 3

P. 5-3: ARTIST isn't included. | 4

P. 5-9: There is currently no program to control common reed or other invasives. Will you be starting a program? If not, you shouldn't say it would be controlled, except by mowing along the sides of the runway. That'll happen, anyway. | 5

Those are the main comments.

Marilyn



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

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

TDD (804) 698-4021

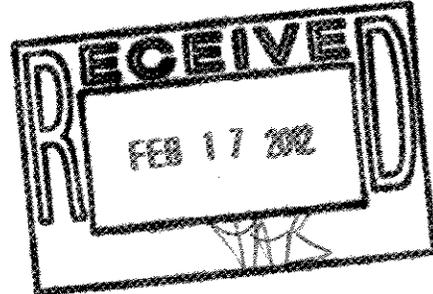
www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

February 15, 2012



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 North Wallops Island Unmanned Aerial Systems Airstrip, Accomack County, (DEQ 11-211F).

Dear Mr. Bundick:

The Commonwealth of Virginia has completed its review of the December 2011 Draft Environmental Assessment (EA) and Federal Consistency Determination (FCD) (received December 20, 2011) for the construction of the North Wallops Island Unmanned Aerial Systems Airstrip 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 participated in the review of the EA and FCD for this proposal:

- Department of Environmental Quality
- Department of Conservation and Recreation
- Department of Game and Inland Fisheries
- Virginia Marine Resources Commission
- Department of Agriculture and Consumer Services
- Department of Health
- Department of Historic Resources
- Department of Transportation
- Department of Aviation

The Department of Forestry, Accomack County and Accomack-Northampton Planning District Commission were also invited to comment on the proposal.

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

PROJECT DESCRIPTION

National Aeronautics and Space Administration (NASA) proposes to construct an unmanned aerial systems (UAS) airstrip at the Goddard Space Flight Center (GSFC) Wallops Flight Facility (WFF) in Accomack County. NASA has submitted an Environmental Assessment (EA) for the proposal that analyzes the potential environmental consequences of construction and operation of a UAS airstrip on the north end of Wallops Island to support the testing and deployment of existing and future UAS and UAS-based scientific instruments. Under the Proposed Action, WFF would construct a new UAS airstrip that would measure approximately 3,000 feet long (2,500 feet plus an additional 500-foot clear zone) by 75 feet wide. Additional width would be provided by a grass buffer and cleared areas as needed for a clear line of sight for UAS operators. UAS-based operations typically would be conducted year round during WFF's normal Air Traffic Control tower hours (Monday through Friday, 0600 to 1800). A maximum of 1,040 UAS sortie operations each year would be conducted from the new airstrip. The airstrip would be located entirely within existing restricted airspace, which has been designated by the Federal Aviation Administration (FAA) as R-6604A/B. A Federal Consistency Determination was included in the EA (Appendix C).

CONCLUSION

Based on the information provided in the Draft Environmental Assessment and comments from reviewers, reviewing agencies generally have no objections to the proposal as presented. Provided activities are performed in compliance with all applicable laws and regulations and in accordance with the recommendations which follow, this project is unlikely to have significant effects on ambient air quality, water quality, surface waters, groundwater, wetlands, fisheries, agricultural land and historic resources.

However, due to the significance of the Maritime Dune Woodland Conservation Site and the state rare plant (*Anomalous eupatorium*) documented there, the Department of Conservation and Recreation strongly recommends avoiding impacts to this globally rare community and state rare plant and suggests relocating the airstrip to another site (see section 8. **Natural Heritage Resources**, page 10).

ENVIRONMENTAL IMPACTS AND MITIGATION

1. Surface Waters and Wetlands. According to the EA (page 3-43), the site is bound by the WFF to the south, Cow Gut to the west, Chincoteague Inlet to the north, and the Atlantic Ocean to the east. The document (page 3-48) states that construction activities would result in both short- and long-term impacts to stormwater conveyance due to raising the site elevation and removing vegetation. In addition, non-tidal wetlands (i.e.,

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

emergent and scrub shrub) are present in the footprint of the airstrip and would be adversely affected by its construction. A Joint Permit Application (JPA) has been prepared to secure authorization for the necessary wetland impacts.

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) Agency Findings. According to the VWPP program at the DEQ Tidewater Regional Office, as proposed, the project will impact 2.47 acres of non-tidal wetlands which will likely require a VWPP. The EA indicates that NASA has already obtained a wetland delineation confirmation from the Corps of Engineers and that NASA has prepared a JPA.

1(c) Requirements. The JPA should be specific as to the type, amount, and location of wetlands that will be impacted by this project. For example, the EA states that a Low Impact Development (LID) infiltration trench may be constructed to convey surface water runoff away from the airstrip. If this trench is constructed through or adjacent to wetlands, the JPA should discuss possible drainage effects of this trench on nearby wetlands. All impacts should be clearly depicted on the project plans, including impacts associated with the demolition of the existing airfield, maintenance of wetlands in the buffer zones, etc. In addition, the EA states that several listed threatened and/or endangered species are located in the vicinity of the project site. Impacts to these species will be evaluated during the application process.

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

- Use directional drilling from upland locations for stream crossings, to the extent practicable. If directional drilling is not feasible, stockpile the material excavated from the trench for replacement.
- Operate machinery and construction vehicles outside of stream-beds and

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

- wetlands; use synthetic mats when in-stream work is unavoidable;
- Construct trenches in a manner that does not drain the wetlands (for example, backfilling with extensive gravel layers thereby creating a French drain effect).
 - Preserve the top 12 inches of trench material removed from wetlands for use as wetland seed and root-stock in the excavated area.
 - 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.

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

2. Subaqueous Lands. According to the FCD (Appendix C, page 2), there are no regulated subaqueous lands located within the footprint of the airstrip construction. The proposed range renovation would not have an impact on subaqueous lands.

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

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 used by the:

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

2(b) Agency Findings. According to VMRC, it appears that the proposed project does not fall under VMRC's jurisdiction. Therefore, no authorization would be required from VMRC.

2(c) Recommendation. Should any portion of the proposed project encroach channelward of mean low water, a permit from VMRC would be required.

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

3. Erosion and Sediment Control, and Stormwater Management. According to the EA (page 3-48), to mitigate potential short-term impacts, prior to construction, NASA would obtain a Virginia Stormwater Management Program construction site stormwater permit, develop a site-specific Stormwater Pollution Prevention Plan (SWPPP), and implement site specific Best Management Practices (BMPs). The SWPPP would identify all stormwater discharges at the site, actual and potential sources of stormwater contamination, and would require the implementation of both structural and nonstructural BMPs to reduce the impact of stormwater runoff on nearby receiving waters.

3(a) Agency Jurisdiction. The Department of Conservation and Recreation (DCR) Division of Stormwater Management (DSM) 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 DCR-DSM, NASA and its authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with *VESCL&R* and *VSWML&R*, including coverage under the general permit for stormwater discharge

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

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. 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/stormwater_management/vsmp.shtml. [Reference: Virginia Stormwater Management Act §10.1-603.1 *et seq.*; VSMP Permit Regulations 4 VAC-50 *et seq.*]

4. Air Emissions. According to the EA (page 3-60), calculations indicate that annual emissions for proposed construction activities would not exceed the 250 tons per year for any criteria pollutant, nor would the Greenhouse Gas (GHG) threshold of 25,000 metric tons per year be exceeded. Air quality impacts associated with the construction activities would be minimal. In addition, the document (page 3-61) finds that air quality impacts associated with the operational activities would be minimal.

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

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) Agency Findings. According to the DEQ Air Division, the project site is located in an ozone (O₃) attainment area.

4(c) Recommendation. 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(d) Requirements.

(i) Fugitive Dust

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

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

(ii) 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

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

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.

(iii) Fuel-Burning Equipment

Fossil fuel-fired portable generators used both during and post-construction may be subject to New Source Performance Standards and/or National Emission Standard for Hazardous Air Pollutants (NESHAP) regulations. Such units, dependent upon size, may also be subject to the permitting requirements of 9 VAC 5 Article 6 of the *Regulations*. Portable concrete/asphalt plants/crushers may also be subject to the permitting requirements of Article 6 of the *Regulations*.

5. Solid and Hazardous Wastes and Hazardous Materials. The EA (page 3-63) states that construction activities would include the use of hazardous materials and may generate hazardous waste (e.g., solvents, hydraulic fluid, oil, and antifreeze) from the construction equipment. NASA would require its contractors to manage all hazardous materials and wastes in accordance with the WFF Integrated Contingency Plan (ICP) and federal, state, and local regulations. All construction and demolition debris would be characterized in accordance with *Virginia Hazardous Waste Management Regulations* and disposed of at an appropriate facility.

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

5(b) Agency Findings. The DEQ Division of Land Protection and Revitalization (DLPR) (formerly called the Waste Division) conducted a Geographic Information System (GIS) data base search and found waste sites within a half-mile radius of the project site. A cursory review of Waste Division data files determined that there are several waste sites located within the same zip code at the project site. However, their proximity to the project site is unknown. A list of these sites is included in the attachments to this document.

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

5(c) Requirements.

(i) Hazardous 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 construction and demolition debris must be characterized in accordance with the *Virginia Hazardous Waste Management Regulations* and disposed of at an appropriate facility.

(ii) 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(d) Recommendations.

(i) Comprehensive Environmental Response, Compensation and Liability Act

DEQ's Federal Facilities Restoration Program recommends contacting NASA WFF, T.J. Meyer at (757) 824-1987 and the Corps, Sher Zaman at (410) 962-3134, for information concerning Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) obligations at the installation. Coordinate with WFF and the Corps prior to initiating any land-, sediment-, or groundwater-disturbing activities associated with construction and demolition activities.

(ii) Additional Waste Site Information

The following website may be accessed to locate additional information on listed waste sites using their identification numbers:

<http://www.epa.gov/superfund/sites/cursites/index.htm> or
http://www.epa.gov/enviro/html/rcris/rcris_query_java.html.

(iii) Pollution Prevention

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.

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

6. Petroleum Storage Tanks.

6(a) Petroleum Storage Tank Cleanups. According to DEQ-TRO, there have been no petroleum releases reported at or adjacent to the proposed project site at Wallops Flight Facility. 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 more than 120 days, it must be registered with DEQ-TRO using AST Registration form 7540-AST. This form is available at the DEQ web site at www.deq.virginia.gov.

7. Herbicides and Pesticides. DEQ recommends that the use of herbicides or pesticides for construction or landscape maintenance 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. According to the EA (page 2-20), minor, long-term impacts to upland and non-tidal wetland communities would occur. Approximately 8.05 acres of vegetation would be cleared and roughly 2.47 acres of non-tidal wetlands would be filled. The document concludes that the loss of habitat would not adversely impact wildlife species abundance or population sustainability.

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

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

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 Findings.

(i) North Wallops Island Conservation Site

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

Maritime Dune Woodland	<i>Prunus serotina/Smilax rotundifolia/</i>	
	<i>Schizachyrium littorale</i> Woodland	G1G2/S1/SOC/NL
Anomalous eupatorium	<i>Eupatorium anomalum</i>	G2G3/S1/NLNL

Maritime Dune Woodland: a very rare community type known only from two sites in Virginia. This woodland comprises tall, temperate, deciduous maritime shrublands or scrub forests of the mid-Atlantic coast. It generally occurs on the lee side of sand dunes along the coast and is subject to salt spray and winds. The substrate varies from pure sand directly adjacent to the ocean to loamy sands in more sheltered areas of the coast. Although placed within the shrubland class at one time, the physiognomy of this vegetation can be variable and ranges from open woodland to stunted forest to dense nearly impenetrable thicket (this association has been placed back in the forest class). Individual trees tend to be wind-pruned and multi-stemmed. The vegetation is dominated by *Prunus serotina*, *Amelanchier canadensis*, *Pinus taeda*, *Sassafras albidum*, *Photinia pyrifolia* (*Aronia arbutifolia*), and *Diospyros virginiana* in varying proportions. *Morella cerifera* (*Myrica cerifera*) and *Vaccinium corymbosum* may form a subcanopy, but if the community is particularly stunted, this species may contribute substantially to the canopy. Lianas are abundant in the canopy or over the ground layer, and species include *Smilax rotundifolia*, *Smilax glauca*, *Parthenocissus quinquefolia*, and *Toxicodendron radicans*. Herbs are generally scarce to lacking

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

entirely, and when present are generally made up of tree and vine seedlings.
(NatureServe, 2011)

Anomalous eupatorium: a tall, perennial, rhizomatous herb in the aster family and grows in interdunal swales, moist savannas (Weakley in prep.). The usually opposite-leaved stem branches toward the top and produces multiple, flat to convex-topped, white-flowered inflorescences in August-October. Anomalous eupatorium was documented during a site visit in October 2011 as part of DCR's re-inventory of the North Wallops Island Conservation Site, on the edges of a seldom-used road through old sand dunes. With the finding of this eupatorium in 2011 along the old access road on North Wallops Island, two occurrences are now documented in Virginia, the other in the Virginia Beach-False Cape area.

(ii) Avian Species

The Peregrine falcon (*Falco peregrinus*, G4/S1BS2N/NL/LT), Northern Harrier (*Circus cyaneus*, G5/S1S2B,S3N/NL/SC), Piping plover (*Charadrius melodus*, G3/S2B,S1N/LT/LT), Wilson's plover (*Charadrius wilsonia*, G5/S1B/NL/LE), and Little blue heron (*Egretta caerulea*, G5/S2B,S3N/NL/NL) have been documented within the project area and the project vicinity. DCR supports the continued annual monitoring of the peregrine falcon use of the hacking tower, the bald eagle nest at the east end of the proposed airstrip's clear zone, annual shorebird monitoring and the monitoring of the effects of the aircraft on plovers and other shorebirds in conjunction with an adaptive management approach as described on p 3-39 of the *Draft EA, Chapter 3: Affected Environment and Environmental Consequences, 3.5.2.3 Special-Status Species Monitoring* and in *Chapter 4: Mitigation and Monitoring, Biological Resources*.

(iii) Threatened and Endangered Plant and Insect Species

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

VDACS has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act. Under a

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

Memorandum of Agreement established between VDACS and DCR, DCR has the authority to report for VDACS on state-listed plant and insect species. DCR finds that the current activity will not affect any documented state-listed plants or insects. In addition, VDACS reviewed statements in the EA concerning listed endangered species and compared them to available information. VDACS finds that no additional comments are necessary in reference to listed endangered plant and insect species with regard to the proposed project.

(iv) 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(c) Conclusion.

(i) Maritime Dune Woodland Community

The proposed project would directly impact the Maritime Dune Woodland community, a natural heritage resource. The EA (page 2-20) states that "this ecosystem is considered rare by the Commonwealth of Virginia; however, this impact would be minor when considered within the context of existing like habitat in the Mid-Atlantic region." In addition, the EA (page 3-35) states that "The UAS Airstrip project is proposing to remove a maximum of 0.93 hectares (2.3 acres) of this community. While this represents almost half of the black cherry xeric maritime dune woodland on Wallops Island, it is 1 percent of the type and the remaining 99 percent reside on protected conservation areas."

While DCR does not dispute the statistics cited above, these statements are somewhat misleading regarding the global status and significance of the proposed loss. There are essentially eight occurrences of this community type with an aggregate coverage of only 84 ha (208 acres) in the world. Based on well-established ranking standards employed by NatureServe and the Natural Heritage network, the community therefore ranks as one of the rarest and least extensive (acreage-wise) natural communities in eastern North America. Moreover, there is little likelihood of additional occurrences since the environmental requirements (xeric high dunes well removed from salt spray) are rare everywhere within the known Mid-Atlantic range.

In Virginia, the only other occurrence of this community is found on the Chincoteague National Wildlife Refuge; data from the purported occurrence on Fisherman's Island has been re-analyzed and that occurrence has been more appropriately re-classified as a maritime forest. Therefore, the Wallops Island occurrence is also the southernmost known occurrence of the type and one of two occurrences in the state. The loss of 1% of the global range of such a rare community is not minor, as stated in the EA

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

justification. In addition, the acreage of the Wallops occurrence that would remain, should the proposed airstrip be constructed, would be fragmented and questionably viable.

(ii) *Anomalous eupatorium*

Anomalous eupatorium is known from Virginia, North Carolina, Georgia, Florida, and Alabama. A species of hybrid origin, what is known as *Eupatorium anomalum* currently, may in fact need to be split into two entities, one with a *E. semiserratum* x *E. mohri* lineage (Florida, Alabama) and the other with a *E. serotinum* x *E. mohri* lineage. The recent DNA sequencing of the Wallops Island collections by Edward Schilling of the University of Tennessee confirmed that this Wallops Island population is similar to the Virginia Beach population and North Carolina material in being derived from *E. mohri* x *E. serotinum* (E. Schilling pers. com 2011). The Wallops Island plants may therefore be an even rarer entity than it is currently ranked.

The population at Wallops is highly threatened by a combination of the proposed airstrip project and the associated clearing that is planned as well as by succession/re-vegetation occurring along the seldom-used road which Wallops Flight Facility does not plan to keep open (Joel Mitchell pers. comm. 2011).

8(d) Recommendations.

• ***Maritime Dune Woodland and Anomalous eupatorium***

Due to the significance of the Maritime Dune Woodland and the Anomalous eupatorium, DCR-DNH strongly recommends avoiding impacts to this globally rare community and state rare plant and suggests relocating the airstrip to another site. In addition, DCR-DNH recommends maintaining the margins of the road bed, where the Anomalous eupatorium occurs, by periodic mowing/bush-hogging during the late winter/early spring. This should maintain the area in a more sunlit state to support the remaining plants.

• ***Peregrine Falcon and Wilson's Plover***

Due to the legal status of the Peregrine falcon and Wilson's plover, DCR recommends coordination with the Virginia Department of Game and Inland Fisheries (DGIF), to ensure compliance with the *Virginia Endangered Species Act* (§§ 29.1-563-570). Due to the legal status of the Piping plover, DCR also recommends continued coordination with the U.S. Fish and Wildlife Service and DGIF to ensure compliance with protected species legislation.

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

- **Natural Heritage Resource Information**

NASA should contact DCR-DNH at (804) 786-7951 to secure updated information on natural heritage resources if a significant amount of time passes before it is utilized. New and updated information is continually added to the Biotics Data System.

- **Protected Species**

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 by DCR. The DGIF database may be accessed at <http://vafwis.org/fwis/> or by contacting Shirli Dressler at (804) 367-6913.

9. Shellfish Resources. According to the EA (page 5-5), although Wallops Island is closed to public access, the adjacent waterways and marshes to the north and west are regularly used by the public for activities such as harvesting shellfish.

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

9(b) Agency Finding. According to VDH-DSS, the project is located in approved shellfish growing waters. However, the activity as described will not require a change in classification.

For additional information, contact VDH-DSS, Keith Skiles at (804) 864-7487.

10. Wildlife Resources and Protected Species. According to the EA (page 3-32), long term, the removal of upland and wetlands habitat at the proposed project site would cause birds, mammals, reptiles, and amphibians using the uplands and wetlands within the project footprint to be permanently displaced once the land is cleared. The document lists several listed species in the area including the loggerhead sea turtle, piping plover, red knot, bald eagle and peregrine falcon. The document finds that the proposed project is unlikely to adversely affect sea turtles; will not adversely impact piping plovers; will have minor but not long lasting impact to local populations of red

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

knots; and may have long term but minor impacts to raptor species (i.e. bald eagle, peregrine falcon).

10(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.

10(b) Agency Findings. DGIF reiterates (as stated in earlier correspondence with NASA and in the EA) that the state-listed threatened bald eagle and peregrine falcon, and federal-listed threatened piping plover and loggerhead sea turtle have been documented from the project area. In addition, the federal candidate red knot and state-listed endangered Wilson's plover may be found on or near the proposed work site. There are also a number of Species of Greatest Conservation Need, as designated in Virginia's Wildlife Action Plan (www.bewildvirginia.org), known from the project area.

10(c) Recommendations. DGIF offers the following recommendations with respect to the monitoring plans described in the EA as part of mitigation for possible impacts upon listed species:

- The monitoring of avian responses by human observers should be utilized in addition to video cameras and begin March 15 and continue through the fall migration, approximately November 15 of any year, as video cameras are effective at capturing responses of birds on nests, but are not effective for monitoring birds passing through or foraging in the area after the nests have hatched. This monitoring should occur for at least one year after the UAS is in operation.
- Human observers should be used to record flight behavior, direction, and the elevation of the eagles should they flush in response to UAS activities. Video cameras are an effective tool for monitoring the responses of bald eagles to UAS activities.
- Video cameras should be placed in view of any documented oystercatcher nests in order to provide a better understanding of their responses to UAS activities in addition to other video camera monitoring.
- Piping plover monitoring should begin during shorebird spring migration and at the onset of piping plover nest site selection, approximately March 15 of any year

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

to ensure that piping plover monitoring considers responses to take-off and landing activities from migrant as well as breeding birds. Monitoring should continue until all piping plover pairs have left their territories.

- Red knot monitoring by human observers should be performed from April 15 through June 15 of any year. Observers should record responses of all avian species present during take-off and landing during this period, in addition to recording responses by red knots.

In addition, the old airstrip should be abandoned and allowed to revert back to beach/overwash habitats which are necessary to many wildlife in the area. However, the area should be monitored for encroachments by invasive species if it is allowed to naturally revert back to vegetated dune.

10(d) Conclusion. DGIF agrees with the USFWS and NASA determinations that construction of the UAS at WFF is not likely to result in significant adverse impacts upon the listed species documented from the project area, and that not much is known about how operation of the UAS may impact nesting and foraging wildlife in the area, including listed species. DGIF supports the avoidance and minimization methods agreed upon by the USFWS and NASA; implementation of which is anticipated to greatly reduce impacts from construction and operation of the UAS at WFF on wildlife and their habitats. In addition, DGIF supports an adaptive management approach to the wildlife monitoring plan.

DGIF is available to assist in the development of monitoring plans, and requests a copy of the results of the monitoring as it may inform the understanding of wildlife responses to UAS and similar activities.

11. Forest Resources. According to the EA (page 1-7), vegetation alongside the length (out to 100 feet on each side) of the airstrip will be cleared. Trees will be cut to ground level; digging below ground to remove stumps and roots is not anticipated since the area for the airstrip will be elevated with up to 3 feet of fill material in most areas. Construction of the UAS airstrip will affect approximately 13 acres of vegetated areas from clearing.

11(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.

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

11(b) Agency Findings. VDOF did not respond to our request for comments on the proposal.

11(c) Recommendations. In general, trees not slated for removal should be left in groupings or clusters to provide aesthetic and environmental benefits, as well as reducing costs associated with maintaining open space, to the extent practicable. The following measures are recommended during construction to protect trees not slated for removal.

- Mark and fence trees at least to the dripline or the end of the root system, whichever extends farther from the tree stem.
- Mark trees with highly visible ribbon so that equipment operators can see the protected areas easily.
- Do not park heavy equipment, move or stack construction materials near trees which can damage root systems by compacting the soil.
- Use mats to minimize soil compaction and mechanical injury to plants.
- Stockpile soil away from trees to avoid killing the root systems.

Questions pertaining to mitigation and tree protection may be addressed to the Department of Forestry, Tom Harlan at (434) 220-9064.

12. Public Water Supply.

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

12(b) Agency Findings. According to VDH-ODW, the project site is not proximate to any identified public drinking water sources (groundwater wells, springs and surface water intakes).

Contact VDH, Diedre Forsgren at (804) 864-7241 for additional information.

13. Transportation Impacts. According to the EA (page 3-66), access to WFF is provided by Route 175 (Chincoteague Road), a two-lane minor arterial that connects to Atlantic Road and Mill Dam Road, both of which terminate at the Main Base gate. Wallops Island is accessed via Atlantic Road which intersects with Wallops Island Road. Wallops Island Road terminates at the Mainland gate. The proposed UAS airstrip would be located on a remote portion of Wallops Island. Because of its location, it is not routinely accessed by WFF personnel or contractors. Construction vehicles would present the greatest volume of traffic to the location.

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

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

13(b) Agency Findings. VDOT's preliminary review indicates that major impacts to the transportation system are not anticipated. There are no current road projects in the vicinity.

13(c) Requirements. According to VDOT, a land use permit will be required for any work in VDOT right-of-way.

For more information, contact VDOT, Kevin J. Thomas at (757) 925-1592.

14. Historic Structures and Archaeological Resources. According to the EA (page 3-53), this project has been coordinated with the Virginia Department of Historic Resources and it has been determined that no adverse impacts to archaeological and architectural resources would occur as a result of this project.

14(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.

14(b) Agency Comments. According to DHR, NASA initiated direct consultation with DHR regarding the potential impacts of this project on historic resources. DHR confirms its recommendation in a January 10, 2011 letter that it anticipates the project will not result in adverse effects to historic resources.

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

15. Aviation Impacts.

15(a) Agency Jurisdiction. The Virginia Department of Aviation's (DoAv) Airport Services Division provides airport sponsors and managers with technical assistance on a wide range of projects and issues, including the planning, design, construction and maintenance of airport facilities. The division manages funding programs for capital improvements, facilities and equipment, airport maintenance projects, and airport security; the General Aviation Voluntary Security Certification Program; the licensing

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

program for public-use airports; and the registration program for private-use airports. The division conducts statewide aviation system planning and maintains the Virginia Air Transportation System Plan.

15(b) Agency Findings. DoAv reviewed the EA and does not have any comments.

For additional information, contact DoAv, Rusty Harrington at (804) 236-3624.

16. 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.

16(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.

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.

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

FEDERAL CONSISTENCY UNDER THE COASTAL ZONE MANAGEMENT ACT

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

Federal Consistency Public Participation

In accordance with 15 CFR § 930.2, public notice of the proposed action was published on DEQ's web site from December 22, 2011 to January 20, 2012. 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.

REGULATORY AND COORDINATION NEEDS

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

2. 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*

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

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 5-50-60 *et seq.* governing fugitive dust emissions;
- 9 VAC 5-130 *et seq.* for open burning; and
- 9 VAC 5-80-1100 *et seq.* for stationary sources.

For additional information and coordination, contact DEQ-TRO, Troy Breathwaite at (757) 518-2006. 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).

Applicable federal regulations are as follows:

- *Resource Conservation and Recovery Act* (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

- *U.S. Department of Transportation Rules for Transportation of Hazardous Materials, 49 CFR Parts 107, 171.1-172.558.*

For additional information concerning location and availability of suitable waste management facilities in the project area or if free product, discolored soils, or other evidence of contaminated soils are encountered, contact DEQ-TRO, Milt Johnston at (757) 518-2151.

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.*). Please contact the DEQ Division of Land Protection and Revitalization, Linda Richardson at (804) 698-4318, and the Department of Labor and Industry, Ronald L. Graham at (804) 371-0444.

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.

4(c) Comprehensive Environmental Response Compensation and Liability Act. NASA should contact T.J. Meyer at (757) 824-1987 for information concerning Comprehensive Environmental Response, Compensation, and Liability Act obligations at the installation.

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 for more than 120 days will require that the tank(s) are registered with DEQ using *AST Registration Form 7540-AST*. Tank registration may be accomplished by contacting Tom Madigan, DEQ Tidewater Regional Office, at (757) 518-2115 or by e-mail at temadigan@deg.virginia.gov.

6. Natural Heritage Resources. Coordinate with DCR-DNH, Rene Hypes at (804) 371-2708, regarding potential project impacts to rare species.

Mr. Joshua A. Bundick
North Wallops Island Unmanned Aerial Systems

7. Protected Species. Coordination of this project with respect to potential impacts to the Peregrine falcon and Wilson's plover may be accomplished by contacting the Virginia Department of Game and Inland Fisheries, Amy Ewing at (804) 367-2211 to ensure compliance with the *Virginia Endangered Species Act* (§§ 29.1-563-570). In addition, DCR recommends continued coordination with the U.S. Fish and Wildlife Service to ensure compliance with protected species legislation. Also, for assistance in the development of monitoring plans for identified avian species in the area of the project site, contact DGIF, Amy Ewing at (804) 367-2211.

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

Sincerely,



Ellie Irons, Program Manager
Environmental Impact Review

Enclosures

Ec: Cindy Keltner, DEQ-TRO
Steve Coe, DEQ-DLPR
Kotur Narasimhan, DEQ-Air
Tony Watkinson, VMRC
Amy Ewing, DGIF
Robbie Rhur, DCR
Keith Tignor, VDACS
Tom Harlan, VDOF
Barry Matthews, VDH
Roger Kirchen, DHR
Chip Ray, VDOT
Rusty Harrington, DoAv

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



DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
ENVIRONMENTAL IMPACT REVIEW COMMENTS

January 19, 2012

RECEIVED

JAN 17 2012

DEQ-Office of Environmental
Impact Review

PROJECT NUMBER: 11-211F

PROJECT TITLE: North Wallops Island Unmanned Aerial Systems

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

Petroleum Storage Tank Cleanups:

DEQ records indicate that there have been no petroleum releases reported at or adjacent to the proposed project. If evidence of a petroleum release is discovered during implementation of this project, it must be reported to DEQ, as authorized by CODE # 62.1-44.34.8 through 9 and 9 VAC 25-580-10 et seq. Contact Ms. Lynne Smith at (757) 518-2055 or Mr. Gene Siudyla at (757) 518-2117. Petroleum-contaminated soils and ground water generated during implementation of this project must be properly characterized and disposed of properly.

Petroleum Storage Tank Compliance/Inspections:

Installation and operation of any regulated petroleum storage tank(s) either AST or UST must also be conducted in accordance with the Virginia Regulations 9 VAC 25-91-10 et seq and / or 9 VAC 25-580-10 et seq. Please contact Tom Madigan (757) 518-2115 for additional details.

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

Virginia Water Protection Permit Program (VWPP):

As proposed, the project will impact 2.47 acres of non-tidal wetlands which will likely require a VWP permit. In the EIR, you indicate that you have already obtained a wetland delineation confirmation from the Corps of Engineers and that you have already prepared a JPA. In the JPA, please be specific as to the type, amount, and location of wetlands that you will impact with this project. You mention that a Low Impact Development (LID) infiltration trench may be constructed to convey surface water runoff away from the airstrip. If this trench is constructed through or adjacent to wetlands, please be prepared to discuss possible drainage effects of this trench on nearby wetlands. Please ensure that all impacts are clearly depicted on the project plans, including impacts associated with the demolition of the existing airfield, maintenance of wetlands in the buffer zones, etc. You indicate that several threatened and/or endangered species are located in the vicinity of the project site. Impacts to these species will be evaluated during the



DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
ENVIRONMENTAL IMPACT REVIEW COMMENTS

January 19, 2012

PROJECT NUMBER: 11-211F

PROJECT TITLE: North Wallops Island Unmanned Aerial Systems

application process.

Air Permit Program :

Fossil fuel-fired portable generators used both during and post-construction may be subject to New Source Performance Standards and/or NESHAP regulations. Such units, dependent upon size, may also be subject to the permitting requirements of 9 VAC 5 Article 6 of the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution (the Regulations). Portable concrete/asphalt plants/crushers may also be subject to the permitting requirements of Article 6 of the Regulations.

Water Permit Program :

Water permits – no comments

Ground Water – No comments

Waste Permit Program :

All construction and demolition debris, including excess soil, generated during construction and all waste generated during operation must be characterized in accordance with the Virginia Hazardous Waste Management Regulations prior to disposal at an appropriate facility.

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

Sincerely,

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



RECEIVED

JAN 09 2012

DEQ-Office of Environmental
Impact Review

COMMONWEALTH of VIRGINIA

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

Douglas W. Domenech
Secretary of Natural Resources

Steven G. Bowman
Commissioner

January 9, 2012

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: 11-211F
(NASA, North Wallops Island, Unmanned Airstrip)

Dear Mr. Fisher:

You have inquired regarding the construction of a new UAS airstrip that would measure approximately 3,000 feet long (2,500 ft plus an additional 500 ft clear zone) by 75 ft wide on the north end of Wallops Island in Accomack County. The airstrip will be used for unmanned aircraft takeoffs and landings.

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 "Proposed Action" it would appear that your proposed landing strip will not fall within the Commission's jurisdiction, therefore, no authorization would be required from the Marine Resources Commission. If however any portion of your proposed project encroaches channelward of mean low water a permit would be required.

For your information it would appear a wetlands permit may be required from the Accomack County Wetlands Board.

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

Sincerely,

George H. Badger, III
Environmental Engineer

An Agency of the Natural Resources Secretariat

www.mrc.virginia.gov

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



Douglas W. Domenech
Secretary of Natural Resources

David A. Johnson
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-1712

RECEIVED

JAN 30 2012

DEQ-Office of Environmental
Impact Review

MEMORANDUM

DATE: January 30, 2012
TO: John Fisher, DEQ
FROM: Roberta Rhur, Environmental Impact Review Coordinator
SUBJECT: DEQ 11-211F, North Wallops Island Unmanned Aerial Systems Airstrip Draft EA

Division of Natural Heritage

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

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

Maritime Dune Woodland	<i>Prunus serotina/Smilax rotundifolia/</i>	
	<i>Schizachyrium littorale</i> Woodland	G1G2/S1/SOC/NL
Anomalous eupatorium	<i>Eupatorium anomalum</i>	G2G3/S1/NLNL

The Maritime Dune Woodland is a very rare community type known only from two sites in Virginia. This woodland comprises tall, temperate, deciduous maritime shrublands or scrub forests of the mid-Atlantic coast. It generally occurs on the lee side of sand dunes along the coast and is subject to salt spray and winds. The substrate varies from pure sand directly adjacent to the ocean to loamy sands in more sheltered areas of the coast. Although placed within the shrubland class at one time, the physiognomy of this vegetation can be variable and ranges from open woodland to stunted forest to dense nearly impenetrable thicket (this association has been placed back in the forest class). Individual trees tend to be

wind-pruned and multi-stemmed. The vegetation is dominated by *Prunus serotina*, *Amelanchier canadensis*, *Pinus taeda*, *Sassafras albidum*, *Photinia pyrifolia* (= *Aronia arbutifolia*), and *Diospyros virginiana* in varying proportions. *Morella cerifera* (= *Myrica cerifera*) and *Vaccinium corymbosum* may form a subcanopy, but if the community is particularly stunted, this species may contribute substantially to the canopy. Lianas are abundant in the canopy or over the ground layer, and species include *Smilax rotundifolia*, *Smilax glauca*, *Parthenocissus quinquefolia*, and *Toxicodendron radicans*. Herbs are generally scarce to lacking entirely, and when present are generally made up of tree and vine seedlings. (NatureServe, 2011)

The proposed project would directly impact this natural heritage resource. Regarding the Maritime Dune Woodland community, under "Biological Resources" (p. 2-20 of the *North Wallops Island Unmanned Aerial Systems Airstrip, Draft Environmental Assessment*), the statement is made that "this ecosystem is considered rare by the Commonwealth of Virginia; however, this impact would be minor when considered with the context of existing like habitat in the Mid-Atlantic region." On p. 3-35, the EA states that "The UAS Airstrip project is proposing to remove a maximum of 0.93 hectares (2.3 acres) of this community. While this represents almost half of the black cherry xeric maritime dune woodland on Wallops Island, it is 1 percent of the type and the remaining 99 percent reside on protected conservation areas."

While DCR does not dispute the statistics cited above, these statements are somewhat misleading regarding the global status and significance of the proposed loss. There are essentially eight occurrences of this community type with an aggregate coverage of only 84 ha (208 acres) in the world. Based on well-established ranking standards employed by NatureServe and the Natural Heritage network, the community therefore ranks as one of the rarest and least extensive (acreage-wise) natural communities in eastern North America. Moreover, there is little likelihood of additional occurrences since the environmental requirements (xeric high dunes well removed from salt spray) are rare everywhere within the known Mid-Atlantic range.

In Virginia, the only other occurrence of this community is found on the Chincoteague National Wildlife Refuge; data from the purported occurrence on Fisherman's Island has been re-analyzed and that occurrence has been more appropriately re-classified as a maritime forest. Therefore, the Wallops Island occurrence is also the southernmost known occurrence of the type and one of two occurrences in the state. The loss of 1% of the global range of such a rare community is not minor, as stated in the EA justification. In addition, the acreage of the Wallops occurrence that would remain, should the proposed airstrip be constructed, would be fragmented and questionably viable.

Anomalous eupatorium is a tall, perennial, rhizomatous herb in the aster family and grows in interdunal swales, moist savannas (Weakley in prep.) The usually opposite-leaved stem branches toward the top and produces multiple, flat to convex-topped, white-flowered inflorescences in August – October. Anomalous eupatorium was documented during a site visit in October 2011 as part of DCR's re-inventory of the North Wallops Island Conservation Site, on the edges of a seldom-used road through old sand dunes. With the finding of this eupatorium in 2011 along the old access road on North Wallops Island, two occurrences are now documented in Virginia, the other in the Virginia Beach-False Cape area.

Anomalous eupatorium is known from Virginia, North Carolina, Georgia, Florida, and Alabama. A species of hybrid origin, what is known as *Eupatorium anomalum* currently, may in fact need to be split into two entities, one with a *E. semiserratum* x *E. mohri* lineage (Florida, Alabama) and the other with a *E. serotinum* x *E. mohri* lineage. The recent DNA sequencing of the Wallops Island collections by Edward Schilling of the University of Tennessee confirmed that this Wallops Island population is similar to the Virginia Beach population and North Carolina material in being derived from *E. mohri* x *E. serotinum* (E. Schilling pers. com 2011). The Wallops Island plants may therefore be an even rarer entity

than it is currently ranked. The population at Wallops is highly threatened by a combination of the proposed airstrip project and the associated clearing that is planned as well as by succession / re-vegetation occurring along the seldom-used road which Wallops Flight Facility does not plan to keep open (Joel Mitchell pers. comm. 2011).

Due to the significance of the Maritime Dune Woodland and the Anomalous eupatorium, DCR-DNH strongly recommends avoiding impacts to this globally rare community and state rare plant and suggests relocating the airstrip to another site. In addition, DCR – DNH recommends maintaining the margins of the road bed, where the Anomalous eupatorium occurs, by periodic mowing/bush-hogging during the late winter / early spring. This should maintain the area in a more sunlit state to support the remaining plants.

Furthermore, Peregrine falcon (*Falco peregrinus*, G4/S1BS2N/NL/LT), Northern Harrier (*Circus cyaneus*, G5/S1S2B,S3N/NL/SC), Piping plover (*Charadrius melodus*, G3/S2B,S1N/LT/LT), Wilson's plover (*Charadrius wilsonia*, G5/S1B/NL/LE), and Little blue heron (*Egretta caerulea*, G5/S2B,S3N/NL/NL) have been documented within the project area and the project vicinity. DCR supports the continued annual monitoring of the peregrine falcon use of the hacking tower, the bald eagle nest at the east end of the proposed airstrip's clear zone, annual shorebird monitoring and the monitoring of the effects of the aircraft on plovers and other shorebirds in conjunction with an adaptive management approach as described as described on p 3-39 of the *Draft EA, Chapter 3: Affected Environment and Environmental Consequences, 3.5.2.3 Special-Status Species Monitoring* and in *Chapter 4: Mitigation and Monitoring, Biological Resources*.

Due to the legal status of the Peregrine falcon and Wilson's plover, DCR recommends coordination with Virginia's regulatory authority for the management and protection of these species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570). Due to the legal status of the Piping plover, DCR also recommends continued coordination with USFWS and VDGIF to ensure compliance with protected species legislation.

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

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the 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 Stormwater Management

Stormwater Management:

The applicant and their authorized agents conducting regulated land disturbing activities on private and public lands in the state must comply with the Virginia Erosion and Sediment Control Law and Regulations (VESCL&R), Virginia Stormwater Management Law and Regulations including coverage under the general permit for stormwater discharge from construction activities, and other applicable

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

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

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

Cc: Tylan Dean, USFWS
Amy Ewing, VDGIF

Literature Cited:

Joel Mitchell 2011. Personal communication. NASA, Natural Resources Program Manager/ Hazardous Waste and Air Programs.

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: January 26, 2012).

Weakley, A. In prep. Flora of the southern and mid-Atlantic states. Working draft of 15 May 2011. University of North Carolina Herbarium, North Carolina Botanical Garden, University of North Carolina at Chapel Hill, NC.

RECEIVED

JAN 11

DEQ Office of Environmental Impact Review

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR PROGRAM COORDINATION

ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY

TO: John E. Fisher

DEQ - OEIA PROJECT NUMBER: 11 - 211F

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

PROJECT TITLE: NORTH WALLOPS ISLAND UNMANNED AERIAL SYSTEMS AIRSTRIP

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 5-130 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: January 12, 2012



RECEIVED
JAN 13 2012
DEQ-Office of Environmental
Impact Review

MEMORANDUM

TO: John Fisher, Environmental Program Planner

FROM: *G. Stephen "Steve" Coe*
Steve Coe, Division of Land Protection & Revitalization Review Coordinator

DATE: January 18, 2012

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

SUBJECT: Environmental Impact Report: Project No. 11-211F

The Division of Land Protection & Revitalization has completed its review of the Environmental Impact report for the Unmanned Aerial Systems Airstrip project at Wallops Island, Virginia 23337. Project description: NASA proposes to construct a new UAS airstrip that would measure approximately 3,000 feet long by 75 feet wide at the Wallops Flight Facility.

We have the following comments concerning the waste issues associated with this project:

Only hazardous waste issues were addressed in the report. The report did not include a search of waste-related data bases. A GIS database search revealed waste sites within a half mile radius that may impact or be impacted by the subject site. The Division of Land Protection & Revitalization staff performed a cursory review of its data files and determined that there are waste sites located within the same zip code, however their proximity to the subject site is unknown. DEQ's Federal Facilities Program was contacted for a review of this determination and staff comments are included.

Cerclis – NASA Wallops Island. EPA ID VA8800010763. Not NPL.

RCRA/HW – 11 sites

- 1) Assateague Island National Seashore Tom's Cove, Chincoteague Road, Wallops Island. VAR000508770. Contact: Richard Barrett at 410-641-1443.
- 2) BAYSYS Technologies, Fulton Street, Wallops Island. VAR000518811. Contact: Dominick Scott at 757-877-6-7668, ext 2017.
- 3) Chesapeake & Potomac Telephone Co, Wallops Island. VAD980555387. Contact: Bartley Terry at 202-392-8284.
- 4) Cropper USAR Ctr, Kearsarg Circle, Wallops Island. VAR000007211. Contact: John Pontier at 301-677-7593.
- 5) Mid-Atlantic Regional Spaceport, 24200 Fulton Street, Wallops Island. VAR000518845. Contact: Richard Baldwin at 757-824-2335.

- 6) NASA GSFC Wallops Flight Facility, Fulton Street, Wallops Island. VA7800020888. Contact: Joel Mitchell at 757-824-1127.
- 7) NASA GSFC Wallops Flight Facility, Fulton Street, Wallops Island. VA8800010763. Contact: Joel Mitchell at 757-824-1127.
- 8) Navy Surface Combat Systems Center, Buildings R-2, R-30, R-20, 30 Battlegroup Way, Wallops Island. VAR000518829. Contact: Marilyn Ailes at 757-824-2082.
- 9) Navy Surface Combat Systems Center, Buildings V-10/20/21, Artist, Seaside Road, Wallops Island. VAR000518837. Contact: Marilyn Ailes at 757-824-2082.
- 10) NOAA, Wallops Command 7 Data Acquisition Station, 35663 Chincoteague Road, Wallops Island. VAR000518803. Contact: Stephen Howard at 757-824-7311.
- 11) Wallops FUDS Program, NASA Wallops Flight Facility, Wallops Island. VAR000509240. Contact: George Mears at 757-201-7181.

SW - none

VRP - none

FUDS – C03VA0301, VA9799F1697, Wallops Island.

Based on our cursory review of this project there are Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites in the immediate vicinity of the proposed demolition project. In this particular area certain CERCLA sites are managed by the U.S. Army Corps of Engineers Formerly Used Defense Site (FUDS) program. DEQ's Federal Facilities Restoration Program recommends the contractor selected to construct the airstrip contact Mr. Theodore J. Meyer, NASA Wallops Flight Facility Environmental Program Manager at (757) 824-1987 and Mr. Sher Zaman, U.S. Army Corps of Engineers FUDS Program Project Manager (410) 962-3134 for information concerning CERCLA obligations at this installation. The contractor should consult Mr. Meyer and Mr. Zaman prior to initiating any land, sediment, or groundwater disturbing activities associated with the construction of the North Wallops Island Unmanned Aerial Systems Airstrip.

If you have any questions or require further information, please contact Mr. Paul Herman, DEQ, at 804-698-4464.

Petroleum Releases - none

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

GENERAL COMMENTS:

Any soil that is suspected of contamination or wastes that are generated during construction-related activities must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations. Some of the applicable state laws and regulations are: Virginia Waste Management Act, Code of Virginia Section 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60); Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-80); Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal laws and regulations are: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous materials, 49 CFR Part 107.

Also, all structures being demolished/renovated/ removed should be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) 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. The local DEQ office contact for questions is Ms. Lisa Silvia at (757) 518-2175.

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

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

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:

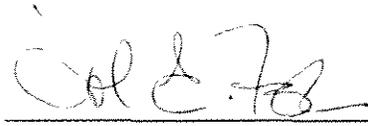
MR. JOHN E. FISHER
DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL IMPACT REVIEW
629 EAST MAIN STREET, SIXTH FLOOR
RICHMOND, VA 23219
FAX #804/698-4319
John.Fisher@deq.virginia.gov

RECEIVED

JAN 20 2012

DEQ-Office of Environmental
Impact Review

COMMENTS



JOHN E. FISHER
ENVIRONMENTAL PROGRAM PLANNER

Statements in the project document concerning endangered species were reviewed and compared to available information. VDACS encourages the minimal transfer of agricultural land to non-agricultural purposes in the development of this project. No additional comments are necessary in reference to endangered plant and insect species regarding this project.

(signed)  (date) _____
(title) _____ (Keith R. Tignor) _____ January 18, 2012
(agency) Endangered Species Coordinator
VDACS, Office of Plant Industry Service

RECEIVED

FEB 10 2012

DEQ-Office of Environmental
Impact Review



COMMONWEALTH of VIRGINIA

Douglas W. Domenech
Secretary of Natural Resources

Department of Game and Inland Fisheries

Robert W. Duncan
Executive Director

February 10, 2012

John Fisher
Environmental Impact Review Coordinator
VA Dept. of Environmental Quality
PO Box 1105
Richmond, VA 23218

RE: Wallops Flight Facility
Unmanned Aerial Systems
Airstrip Draft EA
ESSLog # 31176

Dear Mr. Fisher:

We have reviewed the Draft Environmental Assessment (Draft EA) for the construction and operation of NASA's proposed Unmanned Aerial Systems Airstrip (UAS) at Wallops Flight Facility (WFF) in Accomack County, VA. Based on our review of that document and our data, we offer the following comments and recommendations. The Virginia Department of Game and Inland Fisheries (VDGIF), as the Commonwealth's wildlife and freshwater fish management agency, exercises law enforcement and regulatory jurisdiction over those resources, inclusive of State or Federally *Endangered* or *Threatened* species, but excluding listed insects. We are a consulting agency under the U. S. Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*), and we provide environmental analysis of projects or permit applications coordinated through the Virginia Department of Environmental Quality, the Virginia Marine Resources Commission, the Virginia Department of Transportation, the U. S. Army Corps of Engineers, and other state or federal agencies. Our role in these procedures is to determine likely impacts upon fish and wildlife resources and habitats, and to recommend appropriate measures to avoid, reduce, or compensate for those impacts.

As stated both in earlier correspondence with NASA and in the Draft EA, state Threatened bald eagles, state Threatened peregrine falcons, federal Threatened piping plovers, and federal Threatened loggerhead sea turtles have been documented from the project area. In addition, federal Candidate red knot and state Endangered Wilson's plover may be found on or near the proposed work site. There are also a number of Species of Greatest Conservation Need, as designated in Virginia's Wildlife Action Plan (www.bewildvirginia.org), known from the project area.

We agree with the determinations made by the USFWS and NASA that construction of the UAS at WFF is not likely to result in significant adverse impacts upon the listed species documented from the project area. We also agree with USFWS and NASA, however, that not much is known about how operation of the UAS may impact nesting and foraging wildlife in the area, including listed species. We are supportive of the avoidance and minimization methods agreed upon by the USFWS and NASA, implementation of which is anticipated to greatly reduce impacts from construction and operation of the UAS at WFF on wildlife and their habitats. We do, however offer the following comments and recommendations about the monitoring plans described in the Draft EA as part of mitigation for possible impacts upon listed species:

- We agree with the Draft EA that video cameras are effective at capturing responses of birds on nests, but they are not effective for monitoring birds passing through or foraging in the area after the nests have hatched. Therefore, we recommend that monitoring of avian responses by human observers also be utilized and begin March 15 and continue through the fall migration, approximately November 15 of any year. We recommend this monitoring occur for at least one year after the UAS is in operation. We would be happy to assist NASA in the development of such an avian monitoring plan. 1
- We agree with the Draft EA that video cameras are an effective tool for monitoring the responses of bald eagles to UAS activities. However, we also recommend that human observers be used to record flight behavior, direction, and the elevation of the eagles should they flush in response to UAS activities.
- In addition to other video camera monitoring suggested by the Draft EA, we recommend video cameras also be placed in view of any documented oystercatcher nests in order to provide a better understanding their responses to UAS activities.
- To ensure that piping plover monitoring considers responses to take-off and landing activities from migrant as well as breeding birds, we recommend that piping plover monitoring begin during shorebird spring migration and at the onset of piping plover nest site selection, approximately March 15 of any year. We recommend that monitoring continue until all piping plover pairs have left their territories. 2
- Finally, we recommend that red knot monitoring by human observers be performed from April 15 through June 15 of any year. We recommend that observers record responses of all avian species present during take-off and landing during this period, in addition to recording responses by red knots.

We support an adaptive management approach to the wildlife monitoring plan. We are happy to assist in the development of monitoring plans, and are interested to see the results of the monitoring as it may inform understanding of wildlife responses to UAS and similar activities.

We note that the Draft EA does not state what NASA plans for the existing UAS airstrip at the southern end of the facility. Based on our knowledge of the area and its use by wildlife, including listed species, we believe that it would be beneficial for the old airstrip to be abandoned and allowed to revert back to beach/overwash habitats which are necessary to many wildlife in the area. We would advise NASA, however, to monitor the area for encroachment by invasive species if it is allowed to naturally revert back to vegetated dune.

John Fisher
February 10, 2012
Page 3 of 3

Thank you for the opportunity to provide input on the Draft Environmental Assessment for NASA's proposed Unmanned Aerial Systems Airstrip at Wallops Flight Facility. Please contact me or Amy Ewing at 804-367-0909 if we may be of further assistance.

Sincerely,



Raymond T. Fernald, Manager
Environmental Programs

RTF/AME

Cc: Robert W. Duncan, VDGIF
Richard Weeks, VDEQ
Sheri Kattan, VDEQ
Hank Badger, VMRC

Fisher, John (DEQ)

From: Forsgren, Diedre (VDH)
Sent: Wednesday, January 18, 2012 9:38 AM
To: Fisher, John (DEQ)
Subject: (11-211F) EA/CD: North Wallops Island Unmanned Aerial Systems Airstrip

DEQ Project #: 11-211F
Name: North Wallops Island Unmanned Aerial Systems Airstrip
Sponsor: NASA
Location: Accomack County

The Department of Health has reviewed the above captioned project and the information provided.

The project is not proximate to any identified public drinking water sources (groundwater wells, springs and surface water intakes).

The project is located in approved shellfish growing waters, however the activity as described will not require a change in classification.



11-211F Shellfish
Comment.pdf

Diedre Forsgren

Office Services Specialist
VIRGINIA DEPARTMENT OF HEALTH
Office of Drinking Water, Room 622-A
109 Governor Street
Richmond, VA 23219
Phone: (804) 864-7241
email: diedre.forsgren@vdh.virginia.gov



COMMONWEALTH of VIRGINIA

Department of Health DIVISION OF SHELLFISH SANITATION

109 Governor Street, Room 614-B
Richmond, VA 23219

Ph: 804-864-7487
Fax: 804-864-7481

MEMORANDUM

DATE: 1/10/2012
TO: John E. Fisher
Department of Environmental Quality
FROM: B. Keith Skiles, MPH, Classification Chief
Division of Shellfish Sanitation
SUBJECT: NASA North Wallops UAS airstrip

City / County: Accomack

Waterbody: Cow Gut, Chincoteague Inlet, Atlantic Ocean

Type: VPDES VMRC VPA VWP JPA Other: Federal Consistency Determination

Application / Permit Number: 11-211F

- The project will not affect shellfish growing waters.
- The project is located in approved shellfish growing waters, however, the activity as described will not require a change in classification.
- The project is located in condemned shellfish growing waters and the activity, as described, will not cause an increase in the size or type of the existing closure.
- The project will affect condemned shellfish waters and will not cause an increase in the size of the total condemnation. However, a prohibited area (an area from which shellfish relay to approved waters for self-purification is not allowed) will be required within a portion of the currently condemned area. See comments.
- A buffer zone (including a prohibited area) has been previously established in the vicinity of this discharge, however, the closure will have to be revised. Map attached.
- This project will affect approved shellfish waters. If this discharge is approved, a buffer zone (including a prohibited area) will be established in the vicinity of the discharge. Map attached.
- Other.

ADDITIONAL
COMMENTS:



COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION

1700 North Main Street
SUFFOLK, VIRGINIA 23434

Greg Whirley
Commissioner

January 18, 2012

MEMORANDUM

To: A.C. (Chip) Ray, Environmental Program Planner

From: Eric L. Stringfield, District Planning Engineer

Subject: Federal Consistency Determination

Project: North Wallops Island Unmanned Aerial Systems Airstrip

Location: Accomack, VA

The Hampton Roads Transportation Planning section has reviewed the above referenced Federal Consistency Determination report for impacts to existing and proposed transportation facilities. Our preliminary review does not indicate any major impacts to the transportation system at this time nor are there any current road projects in the vicinity.

The VDOT has no problem with this project moving forward but will require a Land Use permit if any work is located in the VDOT right of way.

If any additional information is required notify Kevin J. Thomas at 757-925-1592 or by e-mail kevin.thomas@vdot.virginia.gov.

kjt

RECEIVED

JAN 18

Office of Environmental
Impact Review

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
John.Fisher@deq.virginia.gov

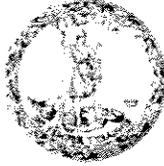


JOHN E. FISHER
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

See attached letter.

(signed) M. Amanda Chee (date) 17 January 2012
(title) Historic Preservationist, Office of Review and Compliance
(agency) Department of Historic Resources



RECEIVED

JAN 17 2012

OEI-Office of Environmental Impact Review

COMMONWEALTH of VIRGINIA

Department of Historic Resources

Douglas W. Domenech
Secretary of Natural Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Kathleen S. Kilpatrick
Director

Tel. (804) 367-2323
Fax. (804) 367-2391
TDD (804) 367-2386
www.dhr.virginia.gov

January 17, 2012

Mr. Joel T. Mitchell, Natural Resources Program Manager
Goddard Space Flight Center
NASA Wallops Flight Facility, Code 250 W
Wallops Island, Virginia 23337

Re: Draft North Wallops Island Unmanned Aerial Systems Airstrip Environmental Assessment
Accomack County
DHR File No. 2009-0696

Dear Mr. Mitchell,

On December 27, 2011 the Virginia Department of Historic Resources (DHR) received a copy of the draft North Wallops Island Unmanned Aerial Systems Airstrip Environmental Assessment (EA) for our review and comment pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended.

We have reviewed the EA against previous documentation in the associated project file and maintain our January 10, 2011 recommendation of no adverse effect to historic properties, specifically archaeological site 44AC0089, by the proposed project. Should you have any questions, I may be reached via email at amanda.lee@dhr.virginia.gov.

Sincerely,

M. Amanda Lee, Historic Preservationist
Office of Review and Compliance

Cc: Randall M. Stanley, Historic Preservation Officer, NASA WFF
Shari A. Silbert, NASA WFF
John E. Fisher, Virginia Department of Environmental Quality

Administrative Services
10 Courthouse Ave
Petersburg, VA 23803
Tel: (804) 862-6416
Fax: (804) 862-6196

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

Tidewater Region Office
14415 Old Courthouse Way, 2nd
Floor
Newport News, VA 23608
Tel: (757) 886-2807
Fax: (757) 886-2808

Western Region Office
762 Kame Lane
Salem, VA 24153
Tel: (540) 387-5428
Fax: (540) 387-5446

Northern Region Office
835 1/2 Main Street
PO Box 519
Stephens City, VA 22655
Tel: (540) 868-7031
Fax: (540) 868-7033



COMMONWEALTH of VIRGINIA

Randall P Burdette
Director

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

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

January 27, 2012

Mr. John E. Fisher
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, 6th Floor
Richmond, Virginia 23219

**Re: National Aeronautics and Space Administration
North Wallops Island Unmanned Aerial Systems Airstrip
Environmental Assessment Consistency Determination (11-211F)**

Dear Mr. Fisher:

Thank you for requesting our comments on the Project concerning the Environmental Assessment for the North Wallops Island Unmanned Aerial Systems Airstrip, Project Number 11-211F.

The Virginia Department of Aviation has reviewed the document and does not have any comments concerning this project at this time. The Department of Aviation appreciates the opportunity to comment on this project.

Sincerely,

R. N. (Rusty) Harrington
Manager, Planning and Environmental Section
Airport Services Division

tbm/



Douglas W. Domenech
Secretary of Natural Resources



David A. Johnson
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-1712

MEMORANDUM

DATE: January 30, 2012
TO: John Fisher, DEQ
FROM: Roberta Rhur, Environmental Impact Review Coordinator
SUBJECT: DEQ 11-211F, North Wallops Island Unmanned Aerial Systems Airstrip Draft EA

Division of Natural Heritage

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

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

Maritime Dune Woodland	<i>Prunus serotina/Smilax rotundifolia/</i> <i>Schizachyrium littorale</i> Woodland	G1G2/S1/SOC/NL
Anomalous eupatorium	<i>Eupatorium anomalum</i>	G2G3/S1/NLNL

The Maritime Dune Woodland is a very rare community type known only from two sites in Virginia. This woodland comprises tall, temperate, deciduous maritime shrublands or scrub forests of the mid-Atlantic coast. It generally occurs on the lee side of sand dunes along the coast and is subject to salt spray and winds. The substrate varies from pure sand directly adjacent to the ocean to loamy sands in more sheltered areas of the coast. Although placed within the shrubland class at one time, the physiognomy of this vegetation can be variable and ranges from open woodland to stunted forest to dense nearly impenetrable thicket (this association has been placed back in the forest class). Individual trees tend to be

wind-pruned and multi-stemmed. The vegetation is dominated by *Prunus serotina*, *Amelanchier canadensis*, *Pinus taeda*, *Sassafras albidum*, *Photinia pyrifolia* (= *Aronia arbutifolia*), and *Diospyros virginiana* in varying proportions. *Morella cerifera* (= *Myrica cerifera*) and *Vaccinium corymbosum* may form a subcanopy, but if the community is particularly stunted, this species may contribute substantially to the canopy. Lianas are abundant in the canopy or over the ground layer, and species include *Smilax rotundifolia*, *Smilax glauca*, *Parthenocissus quinquefolia*, and *Toxicodendron radicans*. Herbs are generally scarce to lacking entirely, and when present are generally made up of tree and vine seedlings. (NatureServe, 2011)

The proposed project would directly impact this natural heritage resource. Regarding the Maritime Dune Woodland community, under “Biological Resources” (p. 2-20 of the *North Wallops Island Unmanned Aerial Systems Airstrip, Draft Environmental Assessment*), the statement is made that “this ecosystem is considered rare by the Commonwealth of Virginia; however, this impact would be minor when considered with the context of existing like habitat in the Mid-Atlantic region.” On p. 3-35, the EA states that “The UAS Airstrip project is proposing to remove a maximum of 0.93 hectares (2.3 acres) of this community. While this represents almost half of the black cherry xeric maritime dune woodland on Wallops Island, it is 1 percent of the type and the remaining 99 percent reside on protected conservation areas.”

While DCR does not dispute the statistics cited above, these statements are somewhat misleading regarding the global status and significance of the proposed loss. There are essentially eight occurrences of this community type with an aggregate coverage of only 84 ha (208 acres) in the world. Based on well-established ranking standards employed by NatureServe and the Natural Heritage network, the community therefore ranks as one of the rarest and least extensive (acreage-wise) natural communities in eastern North America. Moreover, there is little likelihood of additional occurrences since the environmental requirements (xeric high dunes well removed from salt spray) are rare everywhere within the known Mid-Atlantic range.

In Virginia, the only other occurrence of this community is found on the Chincoteague National Wildlife Refuge; data from the purported occurrence on Fisherman’s Island has been re-analyzed and that occurrence has been more appropriately re-classified as a maritime forest. Therefore, the Wallops Island occurrence is also the southernmost known occurrence of the type and one of two occurrences in the state. The loss of 1% of the global range of such a rare community is not minor, as stated in the EA justification. In addition, the acreage of the Wallops occurrence that would remain, should the proposed airstrip be constructed, would be fragmented and questionably viable.

Anomalous eupatorium is a tall, perennial, rhizomatous herb in the aster family and grows in interdunal swales, moist savannas (Weakley in prep.) The usually opposite-leaved stem branches toward the top and produces multiple, flat to convex-topped, white-flowered inflorescences in August – October. Anomalous eupatorium was documented during a site visit in October 2011 as part of DCR’s re-inventory of the North Wallops Island Conservation Site, on the edges of a seldom-used road through old sand dunes. With the finding of this eupatorium in 2011 along the old access road on North Wallops Island, two occurrences are now documented in Virginia, the other in the Virginia Beach-False Cape area.

Anomalous eupatorium is known from Virginia, North Carolina, Georgia, Florida, and Alabama. A species of hybrid origin, what is known as *Eupatorium anomalum* currently, may in fact need to be split into two entities, one with a *E. semiserratum* x *E. mohri* lineage (Florida, Alabama) and the other with a *E. serotinum* x *E. mohri* lineage. The recent DNA sequencing of the Wallops Island collections by Edward Schilling of the University of Tennessee confirmed that this Wallops Island population is similar to the Virginia Beach population and North Carolina material in being derived from *E. mohri* x *E. serotinum* (E. Schilling pers. com 2011). The Wallops Island plants may therefore be an even rarer entity

than it is currently ranked. The population at Wallops is highly threatened by a combination of the proposed airstrip project and the associated clearing that is planned as well as by succession / re-vegetation occurring along the seldom-used road which Wallops Flight Facility does not plan to keep open (Joel Mitchell pers. comm. 2011).

Due to the significance of the Maritime Dune Woodland and the Anomalous eupatorium, DCR-DNH strongly recommends avoiding impacts to this globally rare community and state rare plant and suggests relocating the airstrip to another site. In addition, DCR – DNH recommends maintaining the margins of the road bed, where the Anomalous eupatorium occurs, by periodic mowing/bush-hogging during the late winter / early spring. This should maintain the area in a more sunlit state to support the remaining plants.

1

Furthermore, Peregrine falcon (*Falco peregrinus*, G4/S1BS2N/NL/LT), Northern Harrier (*Circus cyaneus*, G5/S1S2B,S3N/NL/SC), Piping plover (*Charadrius melodus*, G3/S2B,S1N/LT/LT), Wilson’s plover (*Charadrius wilsonia*, G5/S1B/NL/LE), and Little blue heron (*Egretta caerulea*, G5/S2B,S3N/NL/NL) have been documented within the project area and the project vicinity. DCR supports the continued annual monitoring of the peregrine falcon use of the hacking tower, the bald eagle nest at the east end of the proposed airstrip’s clear zone, annual shorebird monitoring and the monitoring of the effects of the aircraft on plovers and other shorebirds in conjunction with an adaptive management approach as described as described on p 3-39 of the *Draft EA, Chapter 3: Affected Environment and Environmental Consequences*, 3.5.2.3 *Special-Status Species Monitoring* and in *Chapter 4: Mitigation and Monitoring, Biological Resources*.

Due to the legal status of the Peregrine falcon and Wilson’s plover, DCR recommends coordination with Virginia's regulatory authority for the management and protection of these species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570). Due to the legal status of the Piping plover, DCR also recommends continued coordination with USFWS and VDGIF to ensure compliance with protected species legislation.

2

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

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the 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 Stormwater Management

Stormwater Management:

The applicant and their authorized agents conducting regulated land disturbing activities on private and public lands in the state must comply with the Virginia Erosion and Sediment Control Law and Regulations (VESCL&R), Virginia Stormwater Management Law and Regulations including coverage under the general permit for stormwater discharge from construction activities, and other applicable

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

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

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

Cc: Tylan Dean, USFWS
Amy Ewing, VDGIF

Literature Cited:

Joel Mitchell 2011. Personal communication. NASA, Natural Resources Program Manager/ Hazardous Waste and Air Programs.

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: January 26, 2012).

Weakley, A. In prep. Flora of the southern and mid-Atlantic states. Working draft of 15 May 2011. University of North Carolina Herbarium, North Carolina Botanical Garden, University of North Carolina at Chapel Hill, NC.



COMMONWEALTH of VIRGINIA

Department of Historic Resources

Douglas W. Domenech
Secretary of Natural Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Kathleen S. Kilpatrick
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
TDD: (804) 367-2386
www.dhr.virginia.gov

January 17, 2012

Mr. Joel T. Mitchell, Natural Resources Program Manager
Goddard Space Flight Center
NASA Wallops Flight Facility, Code 250 W
Wallops Island, Virginia 23337

Re: Draft North Wallops Island Unmanned Aerial Systems Airstrip Environmental Assessment
Accomack County
DHR File No. 2009-0696

Dear Mr. Mitchell,

On December 27, 2011 the Virginia Department of Historic Resources (DHR) received a copy of the draft North Wallops Island Unmanned Aerial Systems Airstrip Environmental Assessment (EA) for our review and comment pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended.

We have reviewed the EA against previous documentation in the associated project file and maintain our January 10, 2011 recommendation of no adverse effect to historic properties, specifically archaeological site 44AC0089, by the proposed project. Should you have any questions, I may be reached via email at amanda.lee@dhr.virginia.gov.

Sincerely,

M. Amanda Lee, Historic Preservationist
Office of Review and Compliance

Cc: Randall M. Stanley, Historic Preservation Officer, NASA WFF
Shari A. Silbert, NASA WFF
John E. Fisher, Virginia Department of Environmental Quality

Administrative Services
10 Courthouse Ave.
Petersburg, VA 23803
Tel: (804) 862-6416
Fax: (804) 862-6196

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

Tidewater Region Office
14415 Old Courthouse Way 2nd
Floor
Newport News, VA 23608
Tel: (757) 886-2807
Fax: (757) 886-2808

Western Region Office
962 Kime Lane
Salem, VA 24153
Tel: (540) 387-5428
Fax: (540) 387-5446

Northern Region Office
5357 Main Street
PO Box 519
Stephens City, VA 22655
Tel: (540) 868-7031
Fax: (540) 868-7033



COMMONWEALTH of VIRGINIA

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

Douglas W. Domenech
Secretary of Natural Resources

Steven G. Bowman
Commissioner

January 9, 2012

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: 11-211F
(NASA, North Wallops Island, Unmanned Airstrip)

Dear Mr. Fisher:

You have inquired regarding the construction of a new UAS airstrip that would measure approximately 3,000 feet long (2,500 ft plus an additional 500 ft clear zone) by 75 ft wide on the north end of Wallops Island in Accomack County. The airstrip will be used for unmanned aircraft takeoffs and landings.

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 "Proposed Action" it would appear that your proposed landing strip will not fall within the Commission's jurisdiction, therefore, no authorization would be required from the Marine Resources Commission. If however any portion of your proposed project encroaches channelward of mean low water a permit would be required.

For your information it would appear a wetlands permit may be required from the Accomack County Wetlands Board.

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

Sincerely,



George H. Badger, III
Environmental Engineer

An Agency of the Natural Resources Secretariat

www.mrc.virginia.gov

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

Hoffman, Charee

From: Silbert, Shari A. (WFF-200.C)[EG&G, Inc. (WICC)] <shari.a.silbert@nasa.gov>
Sent: Tuesday, January 10, 2012 12:55 PM
To: Beacham, Deanna (GOV)
Cc: Stanley, Randall M. (WFF-2280); Mitchell, Joel T. (WFF-2500); Hoffman, Charee
Subject: RE: Release of the Draft UAS EA

Ms. Beacham,

Thank you for your review and comment on our Draft EA. We appreciate your involvement with this process.

Shari A. Silbert

URS Corporation
 Environmental Scientist
 NASA Wallops Flight Facility
 Wallops Island, VA 23337
 ph (757) 824-2327
 fx (757) 824-1819
Shari.A.Silbert@nasa.gov

Please visit our website at [WFF Environmental Office](#)

"The contents of this message do not reflect any position of the National Aeronautics and Space Administration or Goddard Space Flight Center."

From: Beacham, Deanna (GOV) [\[mailto:Deanna.Beacham@governor.virginia.gov\]](mailto:Deanna.Beacham@governor.virginia.gov)
Sent: Tuesday, January 10, 2012 12:52 PM
To: Silbert, Shari A. (WFF-200.C)[EG&G, Inc. (WICC)]
Subject: RE: Release of the Draft UAS EA

Thank you for the opportunity to comment on the draft of the NASA Wallops Flight Facility North Wallops Island UAS EA. I enjoyed reading the report, but have no comments to offer, as there are no expected impacts on any known American Indian cultural resources.

Sincerely,
 Deanna Beacham

Deanna Beacham
 Virginia Council on Indians
 Office of the Governor
 P. O. Box 1475
 Richmond, VA 23218
 804.225.2084
deanna@governor.virginia.gov
<http://indians.vipnet.org>

From: Silbert, Shari A. (WFF-200.C)[EG&G, Inc. (WICC)] [\[mailto:shari.a.silbert@nasa.gov\]](mailto:shari.a.silbert@nasa.gov)
Sent: Wednesday, December 21, 2011 9:12 AM
To: undisclosed-recipients
Subject: Release of the Draft UAS EA

Sent on behalf of Joe Mitchell:

Good Morning,

I am pleased to announce the release of the Draft of the NASA Wallops Flight Facility North Wallops Island Unmanned Aerial Systems (UAS) Airstrip Environmental Assessment (EA). This Draft EA analyzes the potential environmental consequences resulting from the construction and operation of a new UAS airstrip on the north end of Wallops Island in Accomack County, Virginia.

The Draft EA and its appendices may be accessed from the following website:

http://sites.wff.nasa.gov/code250/UAS_DEA.html

The comment period for the Draft EA extends through February 6, 2012. Copies of the document have been sent to persons and organizations that have previously expressed an interest in the project. If you have not received a copy and would like one, please let me know.

Thank you for your interest in this project.

Sincerely,

Joel Mitchell
Natural Resources Manager
NASA Wallops Flight Facility
757-824-1127
Joel.T.Mitchell@nasa.gov



TOWN OF CHINCOTEAGUE, INC.

February 3, 2012

Joel T. Mitchell, Natural Resources Manager
NASA Wallops Flight Facility, Code 250.W
Wallops Island, VA 23337

RE: North Wallops Island – UAS Airstrip
Environmental Assessment Comments

Dear Mr. Mitchell:

The following comments are submitted on behalf of the Town of Chincoteague, Virginia regarding the Draft EA that you sent for our review. We appreciate the opportunity to learn about the proposed airstrip improvements and expansion of use on Wallops Island. There is one issue that is very important to Chincoteague Island residents that was not addressed by the Environmental Assessment.

On an annual basis, the Town of Chincoteague contracts with Allen Chorman & Son, Inc. to provide aerial application of insecticide for mosquito control. Even though this application only occurred 4 times last year on May 27th, May 28th, June 25th, and July 1st, the timing of the flights are of critical importance. They are typically scheduled 8 to 10 days after a significant period of rainfall, when there is evidence of a hatch that cannot be controlled with ground application, and weather conditions permit the application as close to a prime tourist weekend as possible.

This last year there were several times when the delay of the necessary aerial application by even a day caused a crisis in the community as our campgrounds, rental homes and hotels worried about losing business from cancellations due to the clouds of mosquitoes. Mr. Chorman typically will time the application for 6:30 a.m. taking advantage of early morning light-wind conditions. He requires time to fly from Delaware and to complete multiple north/south applications over Chincoteague Island including approximately 1/2 mile area south of the island to turn around. This process is completed within approximately 60 to 90 minutes.

Our concern is the more frequent closure of airspace shown on the EA Figure 2 that may occur 5 days each week; 4 operations per day; from 7am to 5pm with occasional night and weekend operations. This airspace management issue was not identified in the EA and we hope that you will consider some flexibility to accommodate the limited but critical need for Mr. Chorman to 'call ahead' and reserve a few hours for aerial spraying of Chincoteague Island.

Thank you for considering this important issue for the Town of Chincoteague.

Sincerely,

Robert G. Ritter, Jr.
Town Manager

North Wallops Island Unmanned Aerial Systems Airstrip Environmental Assessment

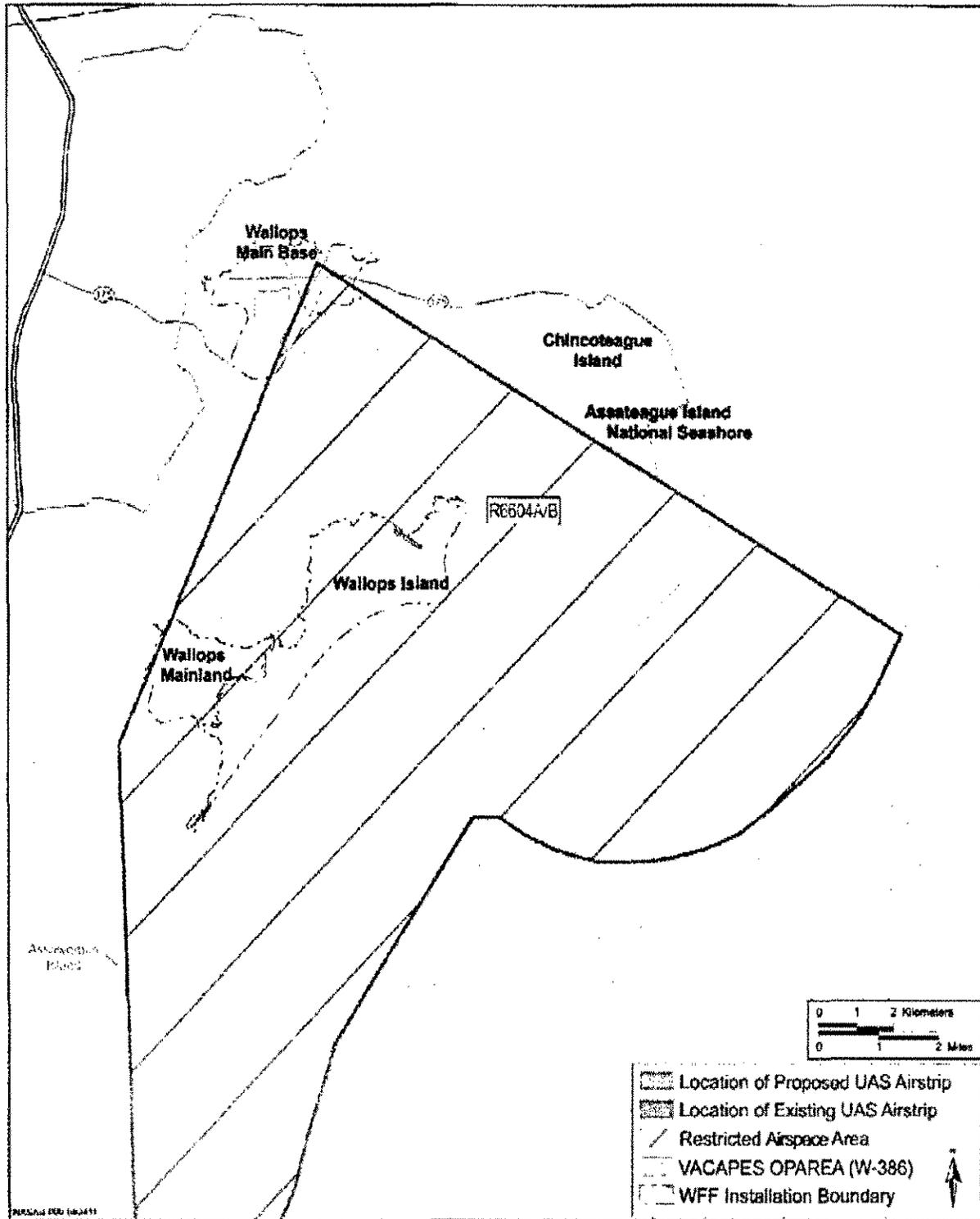


Figure 2. NASA Controlled/Restricted Airspace R-6604A/B and Location of the Existing and Proposed UAS Airstrip

NORMAN H. CONWAY
Legislative District 38B
 Wicomico and Worcester Counties



Annapolis Office
 The Maryland House of Delegates
 6 Bladen Street, Room 121
 Annapolis, Maryland 21401
 410-841-3407
 800-492-7122 Ext. 3407
 Fax 410-841-3416
 Norman.Conway@house.state.md.us

Chair
 Appropriations Committee

THE MARYLAND HOUSE OF DELEGATES
 ANNAPOLIS, MARYLAND 21401

District Office
 1312 Whittier Drive
 Salisbury, Maryland 21801-3241
 410-543-9060
 Fax 410-543-9060

February 3, 2012

Mr. Joel T. Mitchell
 Lead, Natural Resources
 NASA Goddard Space Flight Center's
 Wallops Flight Facility, Code 250.W
 Wallops Island, VA 23337

Dear Mr. Mitchell:

I am writing about the importance of the proposed North Wallops Island Unmanned Aerial Systems (UAS) Airstrip on the states of Maryland and Virginia. The new airstrip for unmanned vehicles will add to the diversity of the Mid-Atlantic Regional Spaceport (MARS).

I represent a rural area on the Lower Eastern Shore of Maryland that strives to remain competitive with the more urban areas of the state. We are struggling to keep our state and region in competition for increased tourism and the creation of new jobs. The continued growth of the Mid-Atlantic Regional Spaceport (MARS) is critical to the economic future of our area and the small business community.

I continue to support MARS and the funding to construct the airstrip and I look forward to the opportunities the favorable approval of the project will provide. Our rural area of the state needs a better economic future and the facilities at MARS and Wallops create a favorable impact on the region's economy.

Thank you for your consideration. Please feel free to call me if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Norman H. Conway". The signature is written in a cursive style with a large, prominent "N" and "C".

Norman H. Conway

NHC/kr

JAMES N. MATHIAS, JR.
Legislative District 38
 Somerset, Wicomico,
 and Worcester Counties

Finance Committee



THE SENATE OF MARYLAND
 ANNAPOLIS, MARYLAND 21401

Annapolis Office
 Miller Senate Office Building
 11 Bladen Street, Suite 401
 Annapolis, Maryland 21401
 410-841-3645 • 301-858-3645
 800-492-7122 Ext. 3645
 Fax 410-841-3006 • 301-858-3006
 James.Mathias@senate.state.md.us

District Office
 410-352-3096
 Fax 410-352-3087

February 9, 2012

Mr. Joel T. Mitchell
 Lead, Natural Resources
 NASA Goddard Space Flight Center's
 Wallops Flight Facility, Code 250.W
 Wallops Island, VA 23337

Dear Mr. Mitchell:

Thank you for sending me the draft report of the North Wallops Island Unmanned Aerial Systems Airstrip Environmental Assessment, dated December 2011. As a former Delegate from Maryland District 38B and currently the State Senator for Somerset, Worcester, and Wicomico Counties, I am writing to urge that you build a new airstrip at the northern end of the island.

As you know, the NASA Wallops Flight Facility has been engaged in the research, development, testing, and evaluation of unmanned aerial systems (UAS) since the late 1970's. Maryland and Virginia are two of the leading states in the nation for business activity related to such systems, so it is important to maintain the presence of the unmanned aerial system at Wallops Island. The existing, temporary airstrip is vulnerable to storm damage, which limits its availability for UAS testing. The proposed new airstrip would be located on higher, more protected ground that is less subject to storm damage.

The Wallops Island facility already has restricted airspace. That airspace plus the proposed new UAS airstrip would make the facility an ideal candidate for one of the six new sites that the FAA is selecting in 2012 to test the integration of the UAS into the National Airspace System.

In conclusion, I urge you to continue and strengthen the unmanned aerial systems program at NASA's Wallops Flight Facility.

Sincerely,
 Senator James N. Mathias, Jr.

cc: The Honorable Martin O'Malley
 The Honorable Christian Johansson
 Mrs. Caroline R. Massey

Mr. Jerry Redden

Somerset County
Economic Development Commission

11916 Somerset Avenue, Suite 202
 Princess Anne, Maryland 21853
www.somersetcountyedc.org



Daniel K. Thompson
 Executive Director

Telephone: 410.651.0500
 Fax: 410.651.3836
 Email: edc@co.somerset.md.us

Via E-Mail to: Joel.T.Mitchell@nasa.gov

Mr. Joel T. Mitchell
 Lead, Natural Resources
 NASA Goddard Space Flight Center's
 Wallops Flight Facility, Code 250.W
 Wallops Island, VA 23337

RE:Draft - North Wallops Island Unmanned Aerial Systems Airstrip Environmental Assessment

Dear Mr. Mitchell:

Thank you for the opportunity to view the document entitled "Draft - North Wallops Island Unmanned Aerial Systems Airstrip Environmental Assessment," dated December 2011.

Since the late 1970's, the NASA Wallops Flight Facility (WFF) has been engaged in the research, development, testing, and evaluation (RDT&E) of unmanned aerial systems (UAS).

The existing temporary UAS airstrip situated at the southern end of the island often receives storm damage that limits and impacts its availability for UAS testing. Limitations on the size and use of the existing airstrip have driven the necessity for a new, longer, and wider airstrip at WFF to meet UAS test and research operations. The proposed new UAS airstrip is to be located on higher ground that is more adequately protected and less subject to storm damage. This would provide an adequately-sized UAS airstrip that would be capable of supporting the testing and deployment of existing and future UAS and UAS-based scientific instruments at WFF.

Unmanned aerial systems (UAS) are a very crucial function of NASA Wallops, including NASA's Global Hawk as well as those from the U. S. Navy at Patuxent. Two of the four leading states in the nation in regards to UAS is Maryland and Virginia. It is important to maintain the well-established UAS presence at WFF that has continued for more than 30 years.

With the existing restricted airspace available at WFF, establishment of this new UAS airstrip makes WFF an ideal candidate for the FAA to select in 2012 as one of the six new UAS sites to test the integration of UAS into the National Airspace System (NAS).

Attraction of new aerospace industries along with maintaining the ones already established is very important and I support the continuation and strengthening of the unmanned aerial systems program at the NASA Wallops Flight Facility.

Sincerely,

Daniel K. Thompson
 Executive Director

cc: The Honorable Martin O'Malley
 The Honorable Christian Johansson
 Mrs. Caroline R. Massey
 Mr. Jerry Redden



The Nature Conservancy in Virginia
 Virginia Coast Reserve
 P.O. Box 158
 11332 Brownsville Road
 Nassawadox, VA 23413

tel [757] 442.3049
 fax [757] 442.5418
nature.org

Via email: hard copy to follow

February 6, 2012

Mr. Joel Mitchell
 Code 250.W.
 NASA Goddard Space Flight Center's Wallops Flight Facility
 Wallops Island, Virginia 23337

Re: Comments on the Draft Environmental Assessment, North Wallops Island Unmanned Aerial Systems Airstrip

Dear Mr. Mitchell:

On behalf of The Nature Conservancy in Virginia (Conservancy), I am writing to submit our response to the National Aeronautics and Space Administration's (NASA) Draft Environmental Assessment (EA) for the proposed North Wallops Island Unmanned Aerial Systems Airstrip (UAS). We appreciate the opportunity to comment on NASA's plans and the impacts of the project.

As we have mentioned in previous public comment letters to NASA, the Conservancy greatly appreciates NASA's continued receptivity to informed public input through this and other environmental impact reviews. Additionally, the Conservancy supports both the mission and the work of NASA's Wallops Flight Facility (WFF) and appreciates the critical national security functions, the opportunities for sub-orbital research programs and commercial launches it provides, and the important economic development it brings to the Eastern Shore.

As you know well, the Conservancy has worked to conserve the rich diversity of natural habitats and wildlife on the Eastern Shore for over 40 years. Working with public and private conservation partners, we have protected over 114,000 acres, including the 14 barrier islands we own and manage just to the south of NASA's operations at Wallops. This network of islands, called the Virginia Coast Reserve, is acknowledged as the best example of a naturally functioning barrier island system on the U.S. Atlantic coast and one of the best remaining examples of a coastal wilderness anywhere in America. Because of its outstanding human and natural values, it has been recognized as a United Nations Man and the Biosphere Reserve, a U.S. Department of the Interior National Natural Landmark, a National Science Foundation Long-Term Ecological Research Site and a Western Hemisphere International Shorebird Reserve Network Site.

These outstanding conservation values are why the Conservancy evaluates projects at the Wallops Flight Facility not only for their potential ecological impacts to natural resources on Wallops Island itself, but also for their potential impacts to the larger barrier island and associated coastal lagoon and seaside saltmarsh ecosystem. As NASA clearly recognizes, Wallops Island--as the only barrier island with significant infrastructure between Ocean City Inlet and the mouth of the Chesapeake Bay--has a unique position and responsibility to approach new infrastructure development with careful consideration for the larger ecological and geological context of which Wallops is part.

With that context in mind, our analysis of the draft UAS EA leads us to conclude that the project appears to have limited negative impacts on the barrier island system's larger natural processes. While some of the direct impacts to important biological resources on Wallops Island are locally significant, we believe these to be manageable provided NASA takes special steps to avoid and minimize physical impacts to habitats and operational impacts to species to the greatest extent possible.

Our specific comments are:

General

We are satisfied that no reasonable alternative exists to the general location of UAS air-strip site NASA has selected on the north end of Wallops Island. We recommend that NASA work in collaboration with partners to very carefully place the final location of the airstrip and access road to minimize impacts on maritime dune woodland, palustrine scrub-shrub and emergent wetlands, and rare plants. Invasive *Phragmites* must be carefully monitored and controlled. In the EA NASA acknowledges both the diversity and number of productive habitats and biological elements in and around the UAS site. Wallops Island is endowed with a very high concentration of important biological resources in a very small area. Formal construction and operational protocols should be designed and implemented to protect these resources.

1
2

Avian Resources

Many shorebird species are highly vulnerable to stress and disturbance when migrating (e.g. red knots) and nesting (e.g. piping and Wilson's plovers). Little is known about their responses to UAS over-flights. The small size of UAS aircraft may amplify the impacts, as they may more closely approximate natural avian predators. The bald eagle and peregrine falcon nests are also of concern, as are migratory and nesting songbirds. The proposed 1000 ft. buffer may or may not be sufficient. NASA-WFF can determine if the buffer is adequate and gain other valuable information to help protect populations of these birds by working with experienced partners to develop specific, replicable and scientifically-valid monitoring protocols that measure and evaluate noise and startle responses. The results of this monitoring should be shared with other scientists and the general public. We greatly appreciated NASA's commitment to alter flight paths and/or shut down operations, if necessary, based on monitoring results. Any impacts to

3

migratory and nesting songbirds, particularly neo-tropical migratory birds due to the proposed action are best addressed through protection of the undisturbed plants communities and habitats remaining during and after construction.

Maritime Dune Woodlands

The Conservancy strongly recommends careful fine tuning of the final site plan to minimize the loss of the maritime dune woodlands, an extremely rare natural community type. In the EA, it appears that the project would destroy nearly half of the island's maritime dune woodlands, an outcome we submit must be avoided if at all practicable. Based on the maps and overlays NASA provided in the EA, it appears that slight readjustments to the location of the airstrip could substantially reduce these impacts. We urge NASA to work with the Virginia's Department of Conservation and Recreation Division of Natural Heritage and other interested stakeholders on these refinements to minimize loss of this rare community type.

4

Palustrine Scrub-Shrub and Emergent Wetlands

It also appears that a slight re-working of the airstrip and access road locations would lessen the impacts on palustrine scrub-shrub and palustrine emergent wetlands. The loss of these wetlands will be exacerbated by the almost certain invasion of the common reed, *Phragmites australis*, which thrives in disturbed wetlands and can quickly crowd out more diverse communities of beneficial native plants. NASA should pay special attention to the airstrip access road, which appears to bisect the scrub-shrub and emergent wetland communities. Again, staff at the Division of Natural Heritage would be a great help with this issue.

5

Florida Thoroughwort

The rareness of the Florida thoroughwort (*Eupatorium* genus) both in terms of the occurrence of the species and the indications that it may be genetically distinct from *Eupatorium anomalum*, making it a new, even rarer, species present a unique opportunity to protect and study this plant. We commend NASA for seeking partners to research and preserve the unique occurrences found on Wallops Island, and suggest that NASA develop a formal plan for this work. Construction and operations can be carefully planned and performed to minimize damage to this rare plant population.

6

Invasive Phragmites

NASA can prevent the spread of invasive *Phragmites* by rigorously avoiding the disturbance and re-distribution of rhizomes and seeds by construction equipment and/or workers, and by aggressively monitoring and treating existing and emergent *Phragmites* before, during and after construction. The plant communities, habitats and individual occurrences of species that remain on and around the UAS site can be best protected if the monitoring and control of *Phragmites* is integrated into the design, construction and management of the UAS site, and should be made part of standard operating procedures of the facility.

7

We are pleased that the draft EA acknowledges the importance of Wallops Island as part of a larger geological and ecological system that is unique, fragile and highly dynamic. As we have stressed in previous communications, it is also important that NASA evaluate the potential vulnerability of WFF to climate change impacts including sea level rise, increased coastal flooding, and heightened storm surges. This larger perspective is essential for NASA to work with federal, state and local partners to maintain and enhance the resiliency of both natural and human systems and strategically adapt to heightened challenges to its infrastructure and operations in the future. We emphasize that maintaining the overall integrity of the barrier island system itself so that these islands may continue protecting economically and ecologically important salt marshes, coastal bays, beaches and mainland shoreline, as well as the human community and NASA's facilities, is an essential element of any plan to ensure the continued health of both human and natural communities on Virginia's Eastern Shore.

We appreciate the opportunity to comment on the draft EA and look forward to continuing our work with NASA-WFF in the future. Thank you for your time and consideration.

Yours truly,



Stephen N. Parker

Director, The Nature Conservancy's Virginia Coast Reserve

cc:

Tylan Dean, Assistant Supervisor, Ecological Services, Virginia Field Office, USFWS

Lou Hinds, Superintendent, Chincoteague National Wildlife Refuge, USFWS

Trish Kicklighter, Superintendent, Assateague Island National Seashore, NPS

Laura McKay, Director, Virginia Coastal Zone Management Program, DEQ

Karen McGlathery, Director, Virginia Coast Reserve Long-Term Ecological Research, UVA

Tom Smith, Director, Division of Natural Heritage, DCR

Tony Watkinson, Chief, Habitat Management Division, VMRC

David Whitehurst, Director, Wildlife Diversity Division, DGIF



The Nature Conservancy in Virginia
 Virginia Coast Reserve
 P.O. Box 158
 11332 Brownsville Road
 Nassawadox, VA 23413

tel [757] 442.3049
 fax [757] 442.5418
nature.org

Via email: hard copy to follow

February 6, 2012

Mr. Joel Mitchell
 Code 250.W.
 NASA Goddard Space Flight Center's Wallops Flight Facility
 Wallops Island, Virginia 23337

Re: Comments on the Draft Environmental Assessment, North Wallops Island Unmanned Aerial Systems Airstrip

Dear Mr. Mitchell:

On behalf of The Nature Conservancy in Virginia (Conservancy), I am writing to submit our response to the National Aeronautics and Space Administration's (NASA) Draft Environmental Assessment (EA) for the proposed North Wallops Island Unmanned Aerial Systems Airstrip (UAS). We appreciate the opportunity to comment on NASA's plans and the impacts of the project.

As we have mentioned in previous public comment letters to NASA, the Conservancy greatly appreciates NASA's continued receptivity to informed public input through this and other environmental impact reviews. Additionally, the Conservancy supports both the mission and the work of NASA's Wallops Flight Facility (WFF) and appreciates the critical national security functions, the opportunities for sub-orbital research programs and commercial launches it provides, and the important economic development it brings to the Eastern Shore.

As you know well, the Conservancy has worked to conserve the rich diversity of natural habitats and wildlife on the Eastern Shore for over 40 years. Working with public and private conservation partners, we have protected over 114,000 acres, including the 14 barrier islands we own and manage just to the south of NASA's operations at Wallops. This network of islands, called the Virginia Coast Reserve, is acknowledged as the best example of a naturally functioning barrier island system on the U.S. Atlantic coast and one of the best remaining examples of a coastal wilderness anywhere in America. Because of its outstanding human and natural values, it has been recognized as a United Nations Man and the Biosphere Reserve, a U.S. Department of the Interior National Natural Landmark, a National Science Foundation Long-Term Ecological Research Site and a Western Hemisphere International Shorebird Reserve Network Site.

These outstanding conservation values are why the Conservancy evaluates projects at the Wallops Flight Facility not only for their potential ecological impacts to natural resources on Wallops Island itself, but also for their potential impacts to the larger barrier island and associated coastal lagoon and seaside saltmarsh ecosystem. As NASA clearly recognizes, Wallops Island--as the only barrier island with significant infrastructure between Ocean City Inlet and the mouth of the Chesapeake Bay--has a unique position and responsibility to approach new infrastructure development with careful consideration for the larger ecological and geological context of which Wallops is part.

With that context in mind, our analysis of the draft UAS EA leads us to conclude that the project appears to have limited negative impacts on the barrier island system's larger natural processes. While some of the direct impacts to important biological resources on Wallops Island are locally significant, we believe these to be manageable provided NASA takes special steps to avoid and minimize physical impacts to habitats and operational impacts to species to the greatest extent possible.

Our specific comments are:

General

We are satisfied that no reasonable alternative exists to the general location of UAS air-strip site NASA has selected on the north end of Wallops Island. We recommend that NASA work in collaboration with partners to very carefully place the final location of the airstrip and access road to minimize impacts on maritime dune woodland, palustrine scrub-shrub and emergent wetlands, and rare plants. Invasive *Phragmites* must be carefully monitored and controlled. In the EA NASA acknowledges both the diversity and number of productive habitats and biological elements in and around the UAS site. Wallops Island is endowed with a very high concentration of important biological resources in a very small area. Formal construction and operational protocols should be designed and implemented to protect these resources.

1
2

Avian Resources

Many shorebird species are highly vulnerable to stress and disturbance when migrating (e.g. red knots) and nesting (e.g. piping and Wilson's plovers). Little is known about their responses to UAS over-flights. The small size of UAS aircraft may amplify the impacts, as they may more closely approximate natural avian predators. The bald eagle and peregrine falcon nests are also of concern, as are migratory and nesting songbirds. The proposed 1000 ft. buffer may or may not be sufficient. NASA-WFF can determine if the buffer is adequate and gain other valuable information to help protect populations of these birds by working with experienced partners to develop specific, replicable and scientifically-valid monitoring protocols that measure and evaluate noise and startle responses. The results of this monitoring should be shared with other scientists and the general public. We greatly appreciated NASA's commitment to alter flight paths and/or shut down operations, if necessary, based on monitoring results. Any impacts to

3

migratory and nesting songbirds, particularly neo-tropical migratory birds due to the proposed action are best addressed through protection of the undisturbed plants communities and habitats remaining during and after construction.

Maritime Dune Woodlands

The Conservancy strongly recommends careful fine tuning of the final site plan to minimize the loss of the maritime dune woodlands, an extremely rare natural community type. In the EA, it appears that the project would destroy nearly half of the island's maritime dune woodlands, an outcome we submit must be avoided if at all practicable. Based on the maps and overlays NASA provided in the EA, it appears that slight readjustments to the location of the airstrip could substantially reduce these impacts. We urge NASA to work with the Virginia's Department of Conservation and Recreation Division of Natural Heritage and other interested stakeholders on these refinements to minimize loss of this rare community type.

4

Palustrine Scrub-Shrub and Emergent Wetlands

It also appears that a slight re-working of the airstrip and access road locations would lessen the impacts on palustrine scrub-shrub and palustrine emergent wetlands. The loss of these wetlands will be exacerbated by the almost certain invasion of the common reed, *Phragmites australis*, which thrives in disturbed wetlands and can quickly crowd out more diverse communities of beneficial native plants. NASA should pay special attention to the airstrip access road, which appears to bisect the scrub-shrub and emergent wetland communities. Again, staff at the Division of Natural Heritage would be a great help with this issue.

5

Florida Thoroughwort

The rareness of the Florida thoroughwort (*Eupatorium* genus) both in terms of the occurrence of the species and the indications that it may be genetically distinct from *Eupatorium anomalum*, making it a new, even rarer, species present a unique opportunity to protect and study this plant. We commend NASA for seeking partners to research and preserve the unique occurrences found on Wallops Island, and suggest that NASA develop a formal plan for this work. Construction and operations can be carefully planned and performed to minimize damage to this rare plant population.

6

Invasive Phragmites

NASA can prevent the spread of invasive *Phragmites* by rigorously avoiding the disturbance and re-distribution of rhizomes and seeds by construction equipment and/or workers, and by aggressively monitoring and treating existing and emergent *Phragmites* before, during and after construction. The plant communities, habitats and individual occurrences of species that remain on and around the UAS site can be best protected if the monitoring and control of *Phragmites* is integrated into the design, construction and management of the UAS site, and should be made part of standard operating procedures of the facility.

7

We are pleased that the draft EA acknowledges the importance of Wallops Island as part of a larger geological and ecological system that is unique, fragile and highly dynamic. As we have stressed in previous communications, it is also important that NASA evaluate the potential vulnerability of WFF to climate change impacts including sea level rise, increased coastal flooding, and heightened storm surges. This larger perspective is essential for NASA to work with federal, state and local partners to maintain and enhance the resiliency of both natural and human systems and strategically adapt to heightened challenges to its infrastructure and operations in the future. We emphasize that maintaining the overall integrity of the barrier island system itself so that these islands may continue protecting economically and ecologically important salt marshes, coastal bays, beaches and mainland shoreline, as well as the human community and NASA's facilities, is an essential element of any plan to ensure the continued health of both human and natural communities on Virginia's Eastern Shore.

We appreciate the opportunity to comment on the draft EA and look forward to continuing our work with NASA-WFF in the future. Thank you for your time and consideration.

Yours truly,



Stephen N. Parker

Director, The Nature Conservancy's Virginia Coast Reserve

cc:

Tylan Dean, Assistant Supervisor, Ecological Services, Virginia Field Office, USFWS

Lou Hinds, Superintendent, Chincoteague National Wildlife Refuge, USFWS

Trish Kicklighter, Superintendent, Assateague Island National Seashore, NPS

Laura McKay, Director, Virginia Coastal Zone Management Program, DEQ

Karen McGlathery, Director, Virginia Coast Reserve Long-Term Ecological Research, UVA

Tom Smith, Director, Division of Natural Heritage, DCR

Tony Watkinson, Chief, Habitat Management Division, VMRC

David Whitehurst, Director, Wildlife Diversity Division, DGIF



Monday 06 February, 2012

Mr. Joel.T.Mitchell Lead Natural Resources (via email joel.t.mitchell@nasa.gov)
 Code 250.W
 Goddard Space Flight Center's Wallops Flight Facility
 National Aeronautics and Space Administration
 Wallops Island, VA 23337

Re: Draft Environmental Assessment
 Reconfiguration of the Wallops Flight Facility Main Entrance
 March 2011

Dear Mr. Mitchell

The Eastern Shore Defense Alliance (ESDA) respectfully extends its thanks for the opportunity to review the draft report for the above reference.

The ESDA is a group of more than 75 businesses, business people, and other citizens that fosters and supports the missions of the National Aeronautics and Space Administration (NASA), United States Navy (USN), National Oceanic and Atmospheric Administration (NOAA), United States Coast Guard (USCG), Mid-Atlantic Regional Spaceport (MARS), and Marine Science Consortium which operate from the federal facilities at Wallops Island, Virginia, where approximately 1,800 civilian government and civilian contractor personnel are employed. On the Delmarva Peninsula, the ESDA is the largest independent support organization and the Wallops Island facilities have the largest concentration of high tech employees.

In reading the background we support the expansion of UAS activities at the proposed site on the North Side of Wallops Island. We look forward to the multifunctional use of the strip as it is described and the applications to further the studies of those scientific communities that are finally realizing the applicability of such UAS systems. This Airstrip will also serve well as the NASA facility is a prime location for the recent FAA Re Authorization Bill that identifies up to six test sites for UAS activities. NASA Wallops is set in a prime position on the east coast to service both this opportunity with the FAA as well as addressing national security roles with UAS technology.

We look forward to hearing of the next steps.

Thank you.

Respectfully submitted,

Peter J. Bale
 Chairman

cc: Mrs. Caroline R. Massey, Assistant Director (via e-mail to caroline.r.massey@nasa.gov)
 Management Operations Directorate, Code 200
 Goddard Space Flight Center's Wallops Flight Facility
 National Aeronautics and Space Administration
 Wallops Island, VA 23337-5099



February 6, 2012

Joel T. Mitchell
Lead, Natural Resources
NASA Goddard Space Flight Center's
Wallops Flight Facility, Code 250.W
Wallops Island, VA 23337

Subject: VCSFA Comment on North Wallops Island UAS Airstrip

Reference (a): "Draft - North Wallops Island Unmanned Aerial Systems Airstrip
Environmental Assessment," dated December 2011

Dear Mr. Mitchell:

In response to Reference (a), the Virginia Commercial Space Flight Authority (VCSFA) would like to express its support of the tentative plan to move the Unmanned Aerial Systems (UAS) Airstrip from South to North Wallops Island. UAS research and capabilities have become a National need, which support Homeland Security, agriculture, resource management, and more.

Relocating the UAS airstrip to North Wallops Island would also support other National need programs conducted on the Island, such as sounding rocket research flights, Antares/Cygnus resupply of the International Space Station (ISS), DoD Operationally Responsive Space (ORS) missions, and the NASA Lunar Atmosphere and Dust Environment Explorer (LADEE) mission.

Thank you for consideration in this important matter, which significantly affects National needs.

Sincerely,

(Signed)

Zigmond V. Leszczynski
Deputy Director
Virginia Commercial Space Flight Authority (VCSFA)
4111 Monarch Way, Suite 201
Norfolk, VA 23508
757.440.4020



Room 2147 Richard A. Henson Center ♦ University of Maryland Eastern Shore ♦ Princess Anne, MD 21853
410-651-6183 phone ♦ 410-651-6512 fax ♦ dskuennen@mdhawk.org

2/5/2012

Joel T. Mitchell
Lead, Natural Resources
NASA Goddard Space Flight Center's
Wallops Flight Facility, Code 250.W
Wallops Island, VA 23337

Dear Mr. Mitchell:

Please accept this as a wholehearted endorsement for the above UAS/UAV project at NASA Wallops by the Maryland Hawk Corporation. The evidence for our support and that of the University of Maryland Eastern Shore and its collaborators is presented by the various programs initiated by this cooperative effort in support of UAV development in the region.

UMES established a university-affiliated 501(c) 3 not-for-profit to streamline the university's ability to provide contractual services to corporate and government clients, commercialize the university's intellectual property, spin off for-profit corporations, and facilitate economic development in the region.

The Maryland Hawk Corporation (MHC) generated \$1.8 million in gross revenues in its first year of operation and has spun off the Hawk Institute for Space Sciences that achieved annual gross revenues in excess of \$5 million and a staff of 52 employees. A major program for is the development UAVs on Delmarva.

In furtherance of the State of Maryland's policy to develop the emerging Lower Eastern Shore cluster of space and defense businesses, emphasizing commercial launches from MARS, as well as the research range, mobile systems, UAVs and other aeronautical and space technologies UMES and MHC have been engaged in various UAS related activities and programs for over 3 years. The State and Governor have encouraged more linkages

A non-profit organization affiliated with the University of Maryland Eastern Shore, an 1890 land-grant institution.

between Wallops and Maryland's military facilities such as the Naval Research Laboratory and the Naval Air Station Patuxent River and academic institutions including the UMES.

UMES in cooperation with MHC has constructed a 25'x 300' Unmanned Aerial Systems (drones) Runway on the campus to support commercial research and development. Applied for a Certificate of Authority from the FAA to use surrounding airspace for research and training purposes. As you may know pending faculty approval and budget allocation, UMES is developing a BS program in Unmanned Aerial Systems to accommodate needs in this growing industry.

UMES is currently in the planning phase for a Engineering and Aviation Sciences Building (\$84 million) and has received the first \$3M of planning funds for this new facility that will be completed in the next four years.

Consistent with STEM initiatives throughout Maryland's technology sectors, UMES builds onto these existing efforts to prepare students for careers in space and Earth sciences.

UMES continues to **STEP-UP Technical Internship Program** with NASA's Wallops Flight Facility and the Worcester County Department of Economic Development to create technical internship opportunities for local high school and college students. The program is currently entering its seventh year. **Reach for the Stars Middle School STEM Program is a second program** students in which one third of the students had a physical challenge, one third had a learning disability, and one third were considered to be academically gifted. The program is currently entering its fifth year.

In support of the continued development and support of UAS, the Hawk Institute for Space Sciences (HISS) launched an Unmanned Aircraft Systems (UAS) Maintenance Training program for dislocated workers on the Lower Eastern Shore of Maryland. In partnership with the Lower Shore Workforce Alliance (LSWA), the workforce development division of Tri-County Council for the Lower Eastern Shore of Maryland, HISS is providing classroom instruction, hands on training, and job placement assistance for program participants. The 9-week training program covers topics such as: UAS air vehicle construction and manufacturing processes, ground support equipment construction and manufacturing processes, testing and maintenance tools, technical manual and blueprint comprehension, quality control procedures and configuration management, and inspection processes and approvals. The initial class consists of 13 dislocated workers residing in Somerset, Wicomico, and Worcester counties. Additionally, priority of selection was provided to veterans who have been honorably separated from service within the past 3 years. This

program was funded by the Workforce Investment Act (WIA) Dislocated Worker funding provided by the Maryland Department of Labor, Licensing & Regulation (DLLR).

I hope the aforementioned is evidence of our progress to encourage UAV development.

In closing I would like to reiterate the continuous and ongoing support from MHC for all of the efforts at NASA Wallops for their support of the UAV industry in the region.

Thanks for the opportunity to voice our support.

Daniel S. Kuennen
Executive Director

Hoffman, Charee

From: Silbert, Shari A. (WFF-200.C)[EG&G, Inc. (WICC)] <shari.a.silbert@nasa.gov>
Sent: Friday, February 03, 2012 1:01 PM
To: Hoffman, Charee; Bartlett, Matthew E.
Cc: Mitchell, Joel T. (WFF-2500)
Subject: FW: North Wallops Island Unmanned Aerial Systems Airstrip

For the record...

Shari A. Silbert

URS Corporation
 Environmental Scientist
 NASA Wallops Flight Facility
 Wallops Island, VA 23337
 ph (757) 824-2327
 fx (757) 824-1819
Shari.A.Silbert@nasa.gov

Please visit our website at [WFF Environmental Office](#)

"The contents of this message do not reflect any position of the National Aeronautics and Space Administration or Goddard Space Flight Center."

From: Mitchell, Joel T. (WFF-2500)
Sent: Friday, February 03, 2012 12:40 PM
To: Underwood, Bruce E. (WFF-8020); Hitch, Michael G. (WFF-8020); Bull, Paul C. (WFF-2280); Turner, Carolyn (WFF-2500); Bundick, Joshua A. (WFF-2500); Silbert, Shari A. (WFF-200.C)[EG&G, Inc. (WICC)]
Subject: FW: North Wallops Island Unmanned Aerial Systems Airstrip

FYI

Joel Mitchell
 Environmental Engineer
 NASA Wallops Flight Facility
 757-824-1127

From: James Thomas [<mailto:jthomas0745@gmail.com>]
Sent: Friday, February 03, 2012 11:59 AM
To: Mitchell, Joel T. (WFF-2500)
Subject: North Wallops Island Unmanned Aerial Systems Airstrip

Dear Mr. Mitchell,

Please consider this my unqualified endorsement of the referenced project to be built and operated on Wallops Island.

I have been very involved, from an economic development standpoint, with creating more opportunities for Wallops Island. It seems that it is still space and aeronautics' unknown jewel.

I am a former Chair of the Mid-Atlantic Institute of Space and Technology and still sit on the Board. My day job, before retirement in January, 2011, was CEO of George, Miles & Buhr, LLC, Engineers and Architects, headquartered in Salisbury.

If you would like to contact me regarding the matter, use the contact information below.

**Best Regards,
Jim Thomas**

Phone: (410) 726-8144

E-Mail: jthomas0745@gmail.com

January 19, 2012

The Honorable Raymond H. LaHood
Secretary of Transportation
1200 New Jersey Avenue, S.E.
Washington, DC, 20590-9898

Dear Secretary LaHood:

As the Department of Transportation prepares to implement the Unmanned Aircraft Systems (UAS) Test Range provisions in the recently passed National Defense Authorization Act and the FAA Reauthorization bill, we encourage you to establish a Mid-Atlantic UAS Test Range in the Maryland–Virginia region to leverage our UAS facilities, airspace and talent.

We would like to highlight a few critical points. First, Maryland and Virginia have joined together in this effort because we realize no single installation or region can do what we can do together. We offer thousands of square miles of restricted and special-use airspace and modern UAS infrastructure at the Atlantic Test Range, NASA Wallops Flight Facility, NASA Langley Research Center, and Naval Air Station Patuxent River. Our airspace exists today and does not need to be created. Nearly every UAS operated by the United States Government has been flown in and tested from our flight test facilities.

Second, provisions in both bills direct the FAA to take on the challenging task of integrating UAS into the national air space almost immediately and without an accompanying Congressional appropriation. We urge you to consider the use of the DoD, NASA, industry and academic institutions in our states that will provide the FAA with a solution at no cost to the taxpayer. Today's budget reality demands a smarter way of doing business. We urge you to take advantage of Virginia and Maryland's existing infrastructure and capabilities, which are ready for operations today and able to provide a savings for the taxpayer and relieve some pressure on the Federal budget.

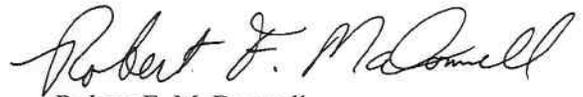
Finally, a UAS Test Range based in the MD-VA region offers the FAA the lowest risk and highest value proposition. Industry, academia and Federal agencies in Maryland and Virginia design, test and operate every category of UAS. Facilities in both states have extensive experience integrating UAS into the national air space. Our states have the capability to be the center of gravity for UAS operations. Our workforce offers the ability to complete the UAS integration task with the right people and a flat learning curve while having the finest UAS infrastructure in the nation at their disposal.

We look forward to discussing this important endeavor with you and commend you for your leadership on this vitally important task.

Sincerely,



Martin O'Malley
Governor



Robert F. McDonnell
Governor

North Wallops Island UAS Airstrip Draft EA
December 2011

Public and Agency Review Comments

#	Letter	Commenter	Page / Resource	Comment	Response
1.	001	U.S. Environmental Protection Agency, Barbara Rudnick 1		A Clean Water Act (CWA) Section 404 permit would be necessary for the construction of the proposed action, as it is currently designed. The CWA 404 b(1) Guidelines only allows the least environmentally damaging practicable alternative (LEDPA) to be permitted. As described in this EA, it is not clear that the proposed alternative represents the LEDPA.	<p><i>Section 3.7.2 detail the avoidance and minimization steps that NASA undertook to limit the impacts to wetlands to the least damaging practicable.</i></p> <p><i>Section 2.2.1 has been modified to read:</i></p> <p>“The UAS airstrip would incorporate typical manned aircraft runway design elements. The airstrip width would be based upon the 75 foot width requirements in Table 3.2 of the Federal Aviation Administration (FAA) Airport Design Advisory Circular 150/5300-13 for Airplane Design Group I which includes aircraft with up to but not including 49 feet wingspan or tail height up to but not including 20 feet. The proposed airstrip would support flying both UAS with a great deal of heritage and known parameters of performance (e.g., Viking 400-class) and similarly sized UAS that are prototypical in design that, consequently, do not have known performance parameters. The latter would require greater safety margins in the length of the airstrip during take-off and landing.</p> <p>The proposed UAS airstrip length requirements would be based upon safety constraints for flying unproven UAS as well as those for the envelope vehicle of the Viking 400-class. There is not a standard airstrip length requirement for the Viking 400 as this length varies with weather conditions, i.e., on a perfect weather day, the Viking 400 might be able to take-off/land on a 1,500 foot airstrip while conversely, on a bad weather day, the Viking 400 may require a 3,000 foot airstrip. Most weather days at WFF would be in the middle of these two extremes such that the Viking 400 would be safe when flying from/to a 2,500 foot airstrip. The unpaved shoulders of the airstrip would provide passage of maintenance or other vehicles and the occasional UAS that may veer off course. The clear zones would extend beyond</p>

#	Letter	Commenter	Page / Resource	Comment	Response
					<p>the end of the airstrip and would provide additional area for takeoff operations.</p> <p>Lastly, the airstrip was designed to ensure that the surface area is flat, without humps, depressions, or other surface variations. The airstrip grading was designed to provide as flat as possible surface area with positive drainage towards the natural drainage features and to ensure that low spots on the airstrip that could hold water would not be created. An infiltration trench was designed to encircle the entire airstrip for effective drainage of the entire surface area. The airstrip grading was designed to provide as flat as possible surface area with positive drainage towards the natural drainage features and to ensure that low spots on the airstrip that could hold water would not be created.”</p> <p>Additionally, NASA performed a desktop GIS study of shifting and/or rotating the proposed airstrip. Each iteration resulted in greater wetland impacts than the proposed orientation.</p>
2.	001	U.S. Environmental Protection Agency, Barbara Rudnick 2		Also of concern to EPA is proposed compensatory mitigation for unavoidable wetland impacts. NASA is currently proposing to mitigate by paying into Virginia's in lieu fee (ILF) program for use in the Virginia Aquatic Resources Trust Fund which is administered in partnership with the U.S. Army Corps of Engineers (Corps), Virginia Department of Environmental Quality (DEQ) and the Nature Conservancy. EPA is concerned that the proposed mitigation technique will not adequately compensate for lost functions and values in the subwatershed where the project is located.	<i>WFF is preparing a mitigation plan in conjunction with the requirements for obtaining a permit under Section 404 of the Clean Water Act.</i>
3.	001	U.S. Environmental Protection Agency, Barbara Rudnick 3		It is not clear to EPA that a specific project through ILF has been identified at this time, nor has investigation occurred for on-site mitigation opportunity. Full avoidance and minimization should be demonstrated prior to commitment of compensatory mitigation. At this time, EPA is	<p><i>See Responses #1 and #2.</i></p> <p><i>Refer to Section 3.7.2, Wetlands, Avoidance and Minimization</i></p>

#	Letter	Commenter	Page / Resource	Comment	Response
				concerned that adequate mitigation to offset for unavoidable impacts may not be available.	
4.	001	U.S. Environmental Protection Agency, Barbara Rudnick 4	Purpose and Need & Alternatives Analysis	It is the concern of EPA that natural resources will be impacted multiple times. Clarify the intended lifespan for the proposed airstrip and how long the proposed action is expected to meet the needs of the scientific community.	<p><i>Section 1.3.2, 4th bullet. Added...</i> “The Viking 400-class UAS, a 20-year planning vehicle for WFF, would require....”</p> <p><i>Section 1.3.2, Page 1-9. Added to the paragraph under Figure 6....</i> “The Viking 400-class UAS would be the largest UAS to be flown from the new airstrip. UAS larger than the Viking 400-class would be flown from the Main Base runways.”</p> <p><i>Page 2-16, Maintenance. This section has been broken out to include “Vegetation” and “Airstrip Surface”.</i></p> <p><i>Airstrip Surface includes the following statement:</i> “The UAS airstrip would be inspected on a regular basis (i.e., annually). When signs of wear begin to show, the asphalt surface would be repaired or resurfaced, as needed. It is anticipated that resurfacing would be required approximately every 10 years to maintain efficient and safe UAS operations.”</p>
5.	001	U.S. Environmental Protection Agency, Barbara Rudnick 4a	Purpose and Need & Alternatives Analysis	Discuss any plans or restrictions being discussed at NASA that might help ensure operational and safety limitations, currently occurring at the southern airstrip, are prevented for the proposed northern airstrip.	<p><i>See Attachment 1.</i></p> <p><i>No changes required.</i></p>
6.	001	U.S. Environmental Protection Agency, Barbara Rudnick 5	Page 2-2, Criterion 3	Page 2-2, Criterion 3 mentions a proposal to construct a payload processing and fueling complex less than 2 miles from the launch range. Is this being proposed to be moved as part of this project? Is separate NEPA documentation being prepared for the payload processing facility?	<p><i>Sentence has been rewritten to read:</i></p> <p>“As previously analyzed, a new Payload Processing and Fueling Complex will be constructed approximately 3km (1.75 mi) from the northern extent of the launch range to meet the expanding needs of the NASA and MARS rocket programs (NASA 2009a).”</p>
7.	001	U.S. Environmental Protection Agency, Barbara Rudnick 6	Page 2-4, Criterion 4 Airstrip Dimension	Page 2-4 states that clear zones are typically unpaved. It is not clear to EPA why clear zones proposed for this project would need to be paved if they are typically left unpaved. Please clarify why in this case paving of the clear zone was determined to be necessary. It is also not clear why an additional grass buffer is required beyond the proposed 250 ft clear zone. What purpose does	<p><i>See Response #1.</i></p>

#	Letter	Commenter	Page / Resource	Comment	Response
				the grass buffer serve that the clear zone does not? Discuss the selection of a buffer/clearing width.	
8.	001	U.S. Environmental Protection Agency, Barbara Rudnick 7		Please provide documentation that clearly states that the proposed craft Viking 400-class UAS, which has a wingspan of less than 20 ft, requires a 2,500 runway with a 75 ft width.	<i>See Response #1.</i>
9.	001	U.S. Environmental Protection Agency, Barbara Rudnick 8		What is the predicted percent of the maximum 1,040 UAS flights annually that will be the larger Viking 400-class or equivalent? What percent of the total annual flights will be Viking 300-class or smaller that can be flown on the existing airstrip?	<i>As stated on page 2-17, "The number and frequency of operations would be dictated by the type of UAS test and UAS-based research being conducted in a given year." The following has been added to page 2-17 under Operations at the New UAS Airstrip: "The south Wallops Island UAS airstrip would be decommissioned for UAS operations when the north Wallops Island UAS airstrip has been activated."</i>
10.	001	U.S. Environmental Protection Agency, Barbara Rudnick 9	Page 2-5	The Naval Air Station Patuxent River was one off-site locations considered but not carried forwarded for detailed analysis. In Table 2, this alternative meets 5 of the 6 criterion applied in considering alternatives outside of WFF. Please clarify why this location was not considered further as it appears to meet all of the defined criteria.	<i>Section 2.1 has been modified to read: Naval Air Station Patuxent River is a U.S. Naval Air Station located on the Chesapeake Bay in St. Mary's County, Maryland approximately 320 km (200 mi) from WFF. The Naval Air Station is home to three major Navy commands and is the Navy's primary location for research, development, test, evaluation, engineering and fleet support for naval aircraft and support systems; over 165,000 aircraft operations occur at the Naval Air Station each year. As such, Navy UAS operate from the Air Station's Webster Field Annex located approximately 13 miles southwest of the Navy's Patuxent River Complex. The auxiliary field is primarily used by the Navy's VC-6 squadron responsible for maintaining the Pioneer UAS. Overall, the Navy's Webster Field Annex would meet the requirements under Criterion 2 through 6; however, the Naval Air Station and its associated Webster Field Annex is not a NASA-supported Center; the Navy would receive priority scheduling of the runways and airspace providing limited opportunities for other users. In addition, due to the location of the Webster Field Annex in the mouth of the St. Mary's River, coastal zone/ocean research objectives would not be available rendering this location unable to meet the needs of the WFF UAS scientific and research community as required under Criterion 1.</i>

#	Letter	Commenter	Page / Resource	Comment	Response
					Accordingly, further consideration of Naval Air Station Patuxent River is not warranted.
11.	001	U.S. Environmental Protection Agency, Barbara Rudnick 10	Page 2-6	It is not clear why an off-site parcel could not be included in an expansion.	<p><i>Section 2.1 has been modified to read:</i></p> <p><i>Purchase of off-site land parcels</i> surrounding the entrance to Wallops Mainland and north towards the Main Base was considered; however, multiple considerations preclude this from being a viable alternative. First, if adjacent off-site land parcels were available for purchase, a constructed airstrip would not be located under NASA-controlled restricted airspace R-6604A/B thereby failing to meet the requirements described under Criterion 2. Second, per NASA's range safety regulations, UAS operating under the management and oversight of WFF are permitted only to fly over unpopulated areas; this means areas where people, vehicles, or homes and businesses would not be located and overflights of these areas would not occur. Although rural, the areas around both the Mainland and Main Base are populated. UAS operating from an off-site location would need to transit from the airstrip, fly over populated areas, operate within R-6604 A/B and VACAPES, and then fly back over populated areas to return to the airstrip. Risk analyses for all UAS flight operations are conducted to determine the probability of hazard to the public. The risk to the public cannot exceed 30×10^{-6}. WFF has determined that conducting flight operations of untested/unproven UAS over populated areas would pose an unacceptable risk to the public (refer to section 3.3.1, <i>Flight Safety</i>). As such Criterion 6 would not be met resulting in a failure to also meet the requirements under Criterion 1. Lastly, the cost of purchasing and securing an off-site land parcel when NASA already possesses available land and restricted airspace is impractical and unwarranted.</p>
12.	001	U.S. Environmental Protection Agency, Barbara Rudnick 11		It is also not clear why UAS represent and pose an unacceptable risk to the public and residential property from mishaps that could occur with untested/unproven UAS.	<i>See Response #11.</i>
13.	001	U.S. Environmental Protection Agency, Barbara Rudnick		The EA also details that UAS crashes do not represent a severe risk to unexploded ordinances that are located surrounding the proposed airstrip	<i>Refer to Section 3.3.1, Flight Safety, which describes the few</i>

#	Letter	Commenter	Page / Resource	Comment	Response
		12		and also do not represent a crash risk to piping plover nests that are located on the north end beach. Please make clear what the risk of UAS crashes/near misses is.	<i>incidents that have occurred out of 312 UAS flights at WFF.</i>
14.	001	U.S. Environmental Protection Agency, Barbara Rudnick 13		Please provide documentation that emergency and support vehicles cannot drive on the airstrip or transition from a concrete surface to an asphalt surface. The existing runway has two pads that can only be accessed by driving on the runway; it is not clear why this does not represent a reasonable and practicable alternative for the proposed project.	<i>Upon further analysis of the load bearing capacity of the proposed airstrip, it was determined that the surface could support limited vehicular traffic (2 large support and/or emergency vehicles, 2 passenger vehicles, and numerous UAS passes, daily). Consequently, the staging pad will be redesigned and relocated further east along the airstrip to avoid wetland impacts.</i>
15.	001	U.S. Environmental Protection Agency, Barbara Rudnick 14		Evaluation of alternate pad size, shape and material, for example can the pad be put on piers, is needed.	<i>See Response #14.</i>
16.	001	U.S. Environmental Protection Agency, Barbara Rudnick 15		A Clean Water Act (CWA) Section 404 would be necessary for the construction of the proposed action, as it is currently designed. The CWA 404 b(1) Guidelines only allows the least environmentally damaging practicable alternative (LEDP A) to be permitted. As described in this EA, it is not clear that the proposed alternative represents the LEDP A.	<i>See Response #1.</i>
17.	001	U.S. Environmental Protection Agency, Barbara Rudnick 16	Page 2-14 and Figure 11	Elevation of the airstrip is proposed to be 3 ft above existing ground; this is stated to be this height needed in order to accommodate the storm water infiltration trench that would surround the airstrip. Drawings of design cross-sections for airstrip and bio-trenches should be clear and legible.	<i>Figure 11 has been enhanced for better clarity.</i>
18.	001	U.S. Environmental Protection Agency, Barbara Rudnick 17	Page 2-14	Why do trenches need to be elevated? As currently designed, below the base of trenches would be additional compacted fill, and trenches do not connect to existing uncompacted ground levels or groundwater. It is not apparent how this disconnect enhances or promotes infiltration. Please clarify the design and intended rates of infiltration volume or velocity that the design will	<i>In order for the drainage trench to work effectively, the base must be above the current water table such that storm water can flow into the trench then infiltrate through the base into the ground water table. If the base of the trench is within the ground water table, the trench would quickly fill with water and potentially overflow the airstrip during storm events. If trenching was only established on one side of the airstrip, the airstrip would be required to be designed on a slope. To provide maximum control of UAS aircraft, the primary</i>

#	Letter	Commenter	Page / Resource	Comment	Response
				<p>achieve. If trenches do not have to be elevated and can put in closer to existing ground levels, the amount of fill needed and the footprint of the project would be smaller. A smaller footprint that is not as elevated may allow for additional avoidance and minimization opportunities. This opportunity should also be considered despite the known presence of unexploded ordinances, which can be remediated if necessary.</p> <p>It is also not clear if the trench can only be located on one side to further minimize impacts.</p>	<p><i>surface area of the airstrip has been designed to be as flat as possible with minimal slope in any direction.</i></p> <p><i>Section 2.2.1 has been modified and includes the following:</i></p> <p>“The airstrip grading was designed to provide as flat as possible surface area with positive drainage towards the natural drainage features and to ensure that low spots on the airstrip that could hold water would not be created. An infiltration trench was designed to encircle the entire airstrip for effective drainage of the entire surface area.”</p>
19.	001	<p>U.S. Environmental Protection Agency, Barbara Rudnick</p> <p>18</p>	Resource Impacts	<p>Please clarify what the expected noise levels from construction and operation of the proposed action. It appears that noise levels on this remote part of Wallops Island could raise from 47-57 dBA to a high of 73 dBA. It is not clear what the operational noise would be at 500 ft or below the flight path at ground level.</p> <p>Discuss if noise during take-off or landing would be louder than during flight, and if these conditions were taken into account for the noise analysis.</p>	<p><i>Refer to Table 6, page 3-11 for predicted construction noise levels.</i></p> <p><i>As presented on page 3-11, Operations, “Of the UAS currently operating and proposed for operations at the new UAS airstrip, the Viking 300 has been determined to be the loudest. The basic sound level of the Viking 300 is 70 dB at 300 m (1,000 ft) flight altitude at 100 kilometers per hour (56 knots) (this is the L_{max} occurring during the flyover). For aircraft flyovers at these speeds, the SEL is approximately 10 dB greater than the L_{max}, which would give an estimated SEL value of 80 dB for a 300 m (1,000 ft) flyover. A 150 m (500 ft) minimum cruise altitude near the airstrip is proposed. The reduction of the altitude by a factor of 2 would increase the SEL by 3 dB. Thus, the estimated SEL underneath the flight track near the airstrip at 150 m (500 ft) would be approximately 83 dB. Under the Proposed Action, it is projected that the average operational day would consist of no more than four UAS sorties, which means eight operations per day (one sortie equals one departure and one arrival).”</i></p> <p><i>“UAS sorties would occur during daylight hours, with the potential for an occasional nighttime operation taking place under special circumstances (e.g., hurricane monitoring). Therefore, the estimated maximum DNL value underneath the flight track was calculated to be DNL= 43 dB. The SEL values from these events ranged from 56 dBA to 88 dBA</i></p>

#	Letter	Commenter	Page / Resource	Comment	Response
					(BRRC 2011).
20.	001	U.S. Environmental Protection Agency, Barbara Rudnick 19	Page 3-14	Page 3-14 states that maritime habitats are well outside the project ground disturbance zone. Does this include maritime forests shown on Figure 12?	<i>To clarify between the Maritime Dune Woodland and Coastal Habitats, the subheader Maritime Habitats has been changed to Coastal Habitats; coastal habitats are well outside the project ground disturbance zone.</i>
21.	001	U.S. Environmental Protection Agency, Barbara Rudnick 20		It is not clear how many acres of wetland will be impacted by conversion and clearing. EPA suggests that compensatory mitigation for conversion of wetlands also be considered. Discuss any temporary impacts to wetlands for construction and staging. Indirect impacts from changes in flow and water movement should also be included.	<i>No acreage would be converted; .92 hectares (2.28 acres) would be filled. This has been clarified in the text on page 3-30. The following has been incorporated into section 3.5.2.1: "A site specific Sediment and Erosion Control Plan would be developed. Staging would occur only on the access road or developed portions of the airstrip. Orange construction fencing would be placed on the perimeter of the area of disturbance. At a minimum, silt fencing would be placed near the edge of the wetlands. In addition, oversight during construction operations to avoid wetlands would be implemented."</i>
22.	001	U.S. Environmental Protection Agency, Barbara Rudnick 21	Page 3-40 (Essential Fish Habitat)	Page 3-40 mentions the use of retaining walls and trenches. More information about the use of retaining walls and trenches is needed. Show where the retaining wall is proposed for use. Would the use of retaining walls reduce the amount of impact to wetlands? Stormwater management should not be located in wetlands.	<i>Discussion of retaining walls is provided on page 3-50. Figure 13 has been modified to show location of retaining walls. Stormwater discussion (page 3-50) has been removed.</i>
23.	001	U.S. Environmental Protection Agency, Barbara Rudnick 22		An invasive species management plan may be necessary to prevent further spread of common reed during the construction of the proposed project. Further spread of this invasive species and loss of native wetland vegetation is of concern to EPA.	<i>A site-specific Invasive Species Management Plan is located in Appendix F of the Final EA.</i>
24.	001	U.S. Environmental Protection Agency, Barbara Rudnick 23	Page 5-9	Page 5-9 discusses potential cumulative effects on wetlands, saying that the wetland loss "would represent a long-term impact; however, WFF has compensated for more wetlands impacts than have	

#	Letter	Commenter	Page / Resource	Comment	Response
				<p>occurred in the recent past for activities outside of the geographic scope of this proposal." While it may be true that WFF has compensated for past wetland impacts, it has not been determined that the compensatory mitigation be used to offset lost functions and values of resources considered and cannot be used to offset the adverse wetland impacts associated with this or other future projects.</p> <p>It is the concern of EPA that adverse cumulative effects to wetlands may be occurring at Wallops Island and may continue to occur in the future.</p>	<p><i>WFF will continue to comply with all federal, state, and local regulations regarding wetland impacts and compensation.</i></p>
25.	001	<p>U.S. Environmental Protection Agency, Barbara Rudnick</p> <p>24</p>	Page 5-1 and 5-10	<p>What is the rationale for cumulative impact spatial and temporal boundaries that were used for the analysis? The spatial boundary for this EA was limited to only the north end of Wallops Island. EPA may suggest that a larger spatial boundary be considered.</p>	<p><i>Section 5.2 on page 5-1 has been modified to include the following:</i></p> <p><i>“Potential impacts from the construction and operation of the Proposed Action are generally considered minor and temporary in nature. Construction activities would be limited to WFF’s north Wallops Island. UAS would fly from the airstrip and directly out to the Warning Areas over VACAPES and would thus not impact mid and southern areas of the Island.”</i></p>
26.	002	<p>USFWS, Lou Hinds</p>		<p>The Service appreciates the opportunity to work with NASA to promote conservation of fish, wildlife, plants, and their habitats, while implementing their mission.</p>	<p><i>No changes required.</i></p>
27.	003	<p>NOAA National Marine Fisheries Service, Mary Colligan</p>		<p>As noted in our August 24, 2010, letter to NASA regarding this proposal, several species of sea turtles listed by NOAA's National Marine Fisheries Service (NMFS) as threatened and endangered occur seasonally in the coastal waters of Virginia. However, as no in water work is proposed, no listed species will be affected by the construction of the Unmanned Aerial Systems Airstrip. Based on this information, NMFS does not intend to offer additional comments on the Draft EA and thus, no further coordination with NMFS Protected Resources Division is needed.</p>	<p><i>No changes required.</i></p>
28.	004	<p>Navy, Marilyn Ailes</p>	Noise	<p>You are using loudspeakers at the launch sites which are exceedingly loud; they are enough to</p>	

#	Letter	Commenter	Page / Resource	Comment	Response
		1		startle my dog inside my home, about 2 miles away. Will you be using such loudspeakers on the north end? They would be quite disruptive, but you don't mention them.	<i>Loudspeakers are not anticipated to be used. No changes required.</i>
29.	004	Navy, Marilyn Ailes 2	Traffic (page 3-67)	You mention about six vehicles per launch going up the road, up to three times a day (1,000 launches/year). This is a lot of traffic, but you don't address this disturbance. Would it affect peregrines? Probably not, but you should mention it. It would be a disturbance to migrating birds coming south in the fall. Probably significant.	<i>The following has been incorporated into section 3.1.3.2:</i> “It is anticipated that for any given day, only 1 model of UAS would be flown from the airstrip and the majority of the associated vehicles would remain at the airstrip for the duration of the flight day.” <i>Associated vehicular noise would be less than construction and operational noise; no impact.</i>
30.	004	Navy, Marilyn Ailes 3	Page 3-13; Page 3-31	Myrtle plants are now 'Morella'. Taxonomists playing their games.	<i>Revised as indicated.</i>
31.	004	Navy, Marilyn Ailes 4	Page 5-3	ARTIST isn't included.	<i>ARTIST is located within an existing impervious surface area in Figure 15.</i>
32.	004	Navy, Marilyn Ailes 5	Page 5-9	There is currently no program to control common reed or other invasives. Will you be starting a program? If not, you shouldn't say it would be controlled, except by mowing along the sides of the runway. That'll happen, anyway.	<i>See Response #23.</i>
33.	005	Department of Environmental Quality, Ellie Irons		Based on the information provided in the Draft Environmental Assessment and comments from reviewers, reviewing agencies generally have no objections to the proposal as presented. However, due to the significance of the Maritime Dune Woodland Conservation Site and the state rare plant (<i>Anomalous eupatorium</i>) documented there, the Department of Conservation and Recreation strongly recommends avoiding impacts to this globally rare community and state rare plant and suggests relocating the airstrip to another site (see section 8. Natural Heritage Resources , page 10).	<i>Refer to Appendix G for the Rare Plant and Community Action Plan for Northern Wallops Island prepared by WFF through consultation with DCR. The Plan provides preservation strategies WFF will take to mitigate impacts on rare plant species and communities.</i>
34.	005	Department of Game and Inland Fisheries, Raymond Fernald	Page 2	We agree with the Draft EA that video cameras are effective at capturing responses of birds on nests, but they are not effective for monitoring birds passing through or foraging in the area after the	

#	Letter	Commenter	Page / Resource	Comment	Response
		1		<p>nests have hatched. Therefore, we recommend that monitoring of avian responses by human observers also be utilized and begin March 15 and continue through the fall migration, approximately November 15 of any year. We recommend this monitoring occur for at least once year after the UAS is in operation. We would be happy to assist NASA in the development of such an avian monitoring plan.</p> <p>We agree with the Draft EA that video cameras are an effective tool for monitoring the responses of bald eagles to UAS activities. However, we also recommend that human observers be used to record flight behavior, direction, and the elevation of the eagles should they flush in response to UAS activities.</p> <p>In addition to other video camera monitoring suggested by the Draft EA, we recommend video cameras also be placed in view of any documented oystercatcher nests in order to provide a better understanding their responses to UAS activities.</p>	<p><i>WFF will cooperate with VDGIF to develop and implement an Avian Response Monitoring Plan for UAS activities that will include bald eagles and oystercatchers. This Plan will employ both human and video observations.</i></p>
35.	005	Department of Game and Inland Fisheries, Raymond Fernald 2	Page 2	<p>To ensure that piping plover monitoring considers responses to take-off and landing activities from migrant as well as breeding birds, we recommend that piping plover monitoring begin during shorebird spring migration and at the onset of piping plover nest site selection, approximately March 15 of any year. We recommend that monitoring continue until all piping plover pairs have left their territories.</p> <p>Finally, we recommend that red knot monitoring by human observers be performed from April 15 through June 15 of any year. We recommend that observers record responses of all avian species present during take-off and landing during this period, in addition to recording responses by red knots.</p>	<p><i>WFF currently performs this monitoring as part of the WFF Protected Species Monitoring Plan. Results are reported annually to the USFWS and VDGIF. No changes required.</i></p>

#	Letter	Commenter	Page / Resource	Comment	Response
36.	006	Department of Conservation and Recreation, Roberta Rhur/John Fisher 1		Due to the significance of the Maritime Dune Woodland and the Anomalous eupatorium, DCR-DNH strongly recommends avoiding impacts to this globally rare community and state rare plant and suggests relocating the airstrip to another site. In addition, DCR – DNH recommends maintaining the margins of the road bed, where the Anomalous eupatorium occurs, by periodic mowing/bush-hogging during the late winter / early spring. This should maintain the area in a more sunlit state to support the remaining plants.	<i>See Response #33.</i>
37.	006	Department of Conservation and Recreation, Roberta Rhur/John Fisher 2		Due to the legal status of the Peregrine falcon and Wilson’s plover, DCR recommends coordination with Virginia’s regulatory authority for the management and protection of these species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570). Due to the legal status of the Piping plover, DCR also recommends continued coordination with USFWS and VDGIF to ensure compliance with protected species legislation.	<i>No changes required.</i> <i>No changes required.</i>
38.	007	Department of Historic Resources, Amanda Lee		We have reviewed the EA against previous documentation in the associated project file and maintain our January 10, 2011 recommendation of no adverse effect to historic properties, specifically archaeological site 44AC0089, by the proposed project.	<i>No changes required.</i>
39.	008	Marine Resources Commission, George Badger, III		Based upon my review of the “Proposed Action”, it would appear that your proposed landing strip will not fall within the Commission’s jurisdiction; therefore, no authorization would be required from the Marine Resources Commission. For your information, it would appear a wetlands permit may be required from the Accomack County Wetlands Board.	<i>No changes required.</i>
40.	009	Virginia Council on Indians, Deanna Beacham		Thank you for the opportunity to comment on the draft of the NASA Wallops Flight Facility North	

#	Letter	Commenter	Page / Resource	Comment	Response
				Wallops Island UAS EA. I enjoyed reading the report, but have no comments to offer, as there are no expected impacts on any known American Indian cultural resources.	<i>No changes required.</i>
41.	010	Town of Chincoteague, Robert Ritter, Jr.		<p>On an annual basis, the Town of Chincoteague contracts with Allen Chorman & Son, Inc, to provide aerial application of insecticide for mosquito control. Even though this application only occurred 4 times last year on May 27th, May 28th, June 25th, and July 1st, the timing of the flights are of critical importance. They are typically scheduled 8 to 10 days after a significant period of rainfall, when there is evidence of a hatch that cannot be controlled with ground application, and weather conditions permit the application as close to a prime tourist weekend as possible.</p> <p>Our concern is the more frequent closure of airspace shown on the EA Figure 2 that may occur 5 days each week; 4 operations per day; from 7am to 5pm with occasional night and weekend operations. This airspace management issue was not identified in the EA and we hope that you will consider some flexibility to accommodate the limited but critical need for Mr. Chorman to 'call ahead' and reserve a few hours for aerial spraying of Chincoteague Island.</p>	<i>WFF would schedule UAS operations around aerial spraying operations upon notice provided by Mr. Chorman.</i>
42.	011	Maryland House of Delegates, Norman Conway		endorsement/support	<i>No changes required.</i>
43.	012	Maryland Senate, Senator Mathias, Jr.		endorsement/support	<i>No changes required.</i>
44.	013	Somerset County Economic Development Commission, Daniel Thompson		endorsement/support	<i>No changes required.</i>
45.	014	The Nature Conservancy, Stephen Parker 1	General	We recommend that NASA work in collaboration with partners to very carefully place the final location of the airstrip and access road to minimize impacts on maritime dune woodland, palustrine scrub-shrub and emergent	<i>See Response #33.</i>

#	Letter	Commenter	Page / Resource	Comment	Response
				wetlands, and rare plants.	
46.	014	The Nature Conservancy, Stephen Parker 2	General	Invasive <i>Phragmites</i> must be carefully monitored and controlled.	<i>See Response #23.</i>
47.	014	The Nature Conservancy, Stephen Parker 3	Avian Resources	The bald eagle and peregrine falcon nests are also of concern, as are migratory and nesting songbirds. The proposed 1,000 ft. buffer may or may not be sufficient. NASA WFF can determine if the buffer is adequate and gain other valuable information to help protect populations of these birds by working with experienced partners to develop specific, replicable and scientifically-valid monitoring protocols that measure and evaluate noise and startle responses. The results of this monitoring should be shared with other scientists and the general public.	<i>A commitment to further study Bald eagles or peregrine falcons has not been made. As written on page 3-37, "To mitigate the potential adverse effects during construction, NASA would employ a 200 m (660 ft) buffer around the eagle nest within which no clearing or construction activities would occur. The establishment of such a buffer is consistent with recommendations of the National Bald Eagle Management Guidelines (USFWS 2007). Peregrine falcon nests have been found well outside of the project area (page 3-37). USFWS has partnered with NASA on mutually beneficial projects related to management of special status and other species found within the unique barrier island system including Wallops Island. WFF will consider future monitoring efforts with USFWS to study these species as well as partnering opportunities with academia and through NASA's internship programs.</i>
48.	014	The Nature Conservancy, Stephen Parker 4	Maritime Dune Woodlands	The Conservancy strongly recommends careful fine tuning of the final site plan to minimize the loss of the maritime dune woodlands, an extremely rare natural community type. In the EA, it appears that the project would destroy nearly half of the island's maritime dune woodlands, an outcome we submit must be avoided if at all practicable. Based on the maps and overlays NASA provided in the EA, it appears that slight readjustments to the location of the airstrip could substantially reduce these impacts.	<i>See Response #33.</i>
49.	014	The Nature Conservancy, Stephen Parker 5	Palustrine Scrub-Shrub and Emergent Wetlands	NASA should pay special attention to the airstrip access road, which appears to bisect the scrub-shrub and emergent wetland communities.	<i>Based on the wetland delineations, the wetlands on each side of the road are connected with other wetland areas and tidal wetlands and would not be hydrologically isolated.</i>
50.	014	The Nature Conservancy, Stephen Parker	Florida Thoroughwort	The rareness of the Florida thoroughwort (<i>Eupatorium</i> genus) both in terms of the	

#	Letter	Commenter	Page / Resource	Comment	Response
		6		occurrence of the species and the indications that it may be genetically distinct from <i>Eupatorium anomalum</i> , making it a new, even rarer species present a unique opportunity to protect and study this plant. We commend NASA for seeking partners to research and preserve the unique occurrences found on Wallops Island, and suggest that NASA develop a formal plan for this work.	<i>WFF will consider future monitoring efforts to study these species through partnering opportunities with academia and through NASA's internship programs.</i>
51.	014	The Nature Conservancy, Stephen Parker 7	Invasive Phragmites	The plant communities, habitats and individual occurrences of species that remain on and around the UAS site can be best protected if the monitoring and control of <i>Phragmites</i> is integrated into the design, construction and management of the UAS site.	<i>See Response #23.</i>
52.	014	The Nature Conservancy, Stephen Parker 8		As we have stressed in previous communications, it is also important that NASA evaluate the potential vulnerability of WFF to climate change impacts including sea level rise, increased coastal flooding, and heightened storm surges. This larger perspective is essential for NASA to work with federal, state and local partners to maintain and enhance the resiliency of both natural and human systems and strategically adapt to heightened challenges to its infrastructure and operations in the future.	<i>Sea level rise for this proposal was addressed on page 2-12 and in Cumulative Effects on page 5-8. No changes required.</i>
53.	015	Eastern Shore Defense Alliance, Peter Bale		endorsement/support	<i>No changes required.</i>
54.	016	Virginia Commercial Space Flight Authority, Zigmond Leszczynski		endorsement/support	<i>No changes required.</i>
55.	017	Maryland Hawk Corporation, Daniel Kuennen		endorsement/support	<i>No changes required.</i>
56.	018	Jim Thomas		endorsement/support	<i>No changes required.</i>
57.	019	Governor McDonnell and Governor O'Malley		endorsement/support	<i>No changes required.</i>

ATTACHMENT 1

Reason for Location of Launch Facilities at the South End of Wallops Island

The geographic location of WFF's launch range has been a critical factor in its continued ability to safely and successfully conduct science, technology, and educational flight projects aboard rockets. WFF's launch range location is farthest away from the general public; it is also the safest part of WFF for hazardous operations. NASA's primary concern is limiting the risk of harm to private property, its employees, and the general public resulting from hazardous operations. Regarding public safety, one concept prevails: the farther the hazardous activity is from the general public, the smaller the risk of harm. NASA's safety policy is that such activities must be conducted as far away from the public as possible.

Safety Considerations

When a rocket is being prepared for launch, it possesses certain hazards based upon the types and quantities of explosive charges and propellants onboard. To ensure employee and public safety, an off-limits area is established as a radius around the pad. Only specially trained, mission-essential personnel are allowed within this off-limits area once established. This area is commonly referred to as the Pre-Launch Danger Area (PLDA), and can range from several hundred feet for small weather rockets to more than 380 meters (m) (1,250 feet [ft]) for larger orbital rockets. A PLDA can be in effect as long as the hazard exists on the launch pad, but is typically established for several weeks preceding the launch.

Several hours prior to launch, a Launch Hazard Area (LHA) is established. The purpose of the LHA is to protect the general public from direct harm from the launch (i.e., debris from a rocket flying off course). These areas are sized based on the types and quantities of propellant onboard, rocket reliability, flight trajectory, and types of debris expected if the flight were terminated. The LHAs are considerably larger than PLDAs and can range in size from 380 m (1,250 ft) for small sounding rockets up to more than 3,050 m (10,000 ft) for larger orbital rockets. LHAs must be clear of people prior to launch; this is part of the go/no-go criteria during a launch countdown. The LHA typically requires evacuation several hours prior to launch until liftoff. Recent orbital launches have had several postponements when conditions do not permit a launch at the originally scheduled time. Postponed launches would require hazard area clearance at the next launch window until either the launch is completed or completely rescheduled.

In addition to the hazards presented by explosion or debris, other safety considerations include distance focused overpressure (DFO) and toxic materials dispersion. DFO is a term that refers to acoustical energy transferred through the atmosphere that would result from a rocket explosion, the primary hazard being injuries inflicted by shattered windows. Toxics include a variety of hazardous materials that could be transported through the atmosphere from either a normal or terminated flight, and may include rocket exhaust products such as hydrogen chloride and carbon monoxide (CO), or propellants such as hydrazines and oxides of nitrogen. The effects of DFO and toxic materials cannot be contained within a certain pre-defined hazard area as they are dictated by atmospheric conditions. As such, the effects of these hazards are analyzed real-time during launch countdown using industry accepted computer models. As the extent of potential hazards could change with the weather, the areas requiring clearance are also subject to change. To ensure maximum operational flexibility while also upholding NASA's rigorous safety standards during variable weather conditions, one concept prevails: the farther the hazardous activity is from the general public, the smaller the risk of harm. It is standing NASA safety policy that such activities must be conducted as absolutely far away from the public as possible.

While creating launch facilities and infrastructure further north on Wallops Island would reduce the risk of mission conflicts, the public would be exposed to greater safety risks, which is absolutely unacceptable to NASA and its partners.