



COMMENTS RECEIVED AND RESPONSES

WALLOPS FLIGHT FACILITY ALTERNATIVE ENERGY PROJECT

FINAL ENVIRONMENTAL ASSESSMENT



Image Credits: DIYSolarStore.com and SolarPanelsPlus.com

National Aeronautics and Space Administration

Goddard Space Flight Center

Wallops Flight Facility

Wallops Island, VA 23337

May 2011



COMMENTS RECEIVED



Douglas W. Domenech
Secretary of Natural Resources

COMMONWEALTH of VIRGINIA
Department of Game and Inland Fisheries

Robert W. Duncan
Executive Director

April 15, 2011

Joshua A. Bundick
Lead, Environmental Planning
NASA Wallops Flight Facility
Code 250.W
Wallops Island, VA 23337

RE: ESSLog 25379;
NASA WFF Alternative
Energy Project

Dear Mr. Bundick:

We have reviewed the NASA Wallops Flight Facility (WFF) Alternative Energy Project Final Environmental Assessment (FEA) and Finding of No Significant Impact (FONSI). The Department of Game and Inland Fisheries (DGIF), as the Commonwealth's wildlife and freshwater fish management agency, exercises 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 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 (DEQ), the Virginia Marine Resources Commission, the Virginia Department of Transportation, the U. S. Army Corps of Engineers, the Federal Energy Regulatory Commission, 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.

The Proposed Action (preferred alternative) would produce 10 GWh/year of electricity through installation of an 8.0 MW system of solar panels and two ancillary residential-scale wind turbines. The solar panel system would consist of approximately 38,000 15-square-foot panels. Panel configuration and spacing to avoid shading and facilitate maintenance would increase the required solar panel land area to approximately 80 acres. Electricity generated by the solar panels would be connected via underground transmission lines to switchgear enclosed in a 320 square-foot pre-fabricated building. Solar panels would be installed in open, grassy areas or over parking lots at Wallops Main Base. One of the residential-scale 2.4 kW wind turbines would be installed near the WFF Visitors Center, and a second would be installed near the entrance gate/security guard station on the Mainland. The residential-scale wind turbines would be installed with a setback of 100 feet from existing towers, buildings, and trees. No transformers

or interconnection switchgear are proposed for these turbines. According to the FEA, the residential-scale turbines would not contribute much to the percent of energy generated from renewable sources at WFF; their primary purpose would be educational outreach about renewable energy to WFF employees and the public.

The FEA and FONSI acknowledge that the preferred alternative would have both adverse and beneficial impacts on environmental resources, while stipulating that adverse impacts would be mitigated to the greatest extent practicable. As we recommended in our review of the draft EA, we endorse the currently proposed alternative because it utilizes solar panels and minimal (i.e., experimental and educational) construction and operation of two residential-scale turbines, rather than commercial-scale turbines. We concur that the preferred alternative provides an opportunity for NASA to achieve the objectives set forth by the 2005 Federal Energy Policy Act, thereby supporting NASA's goal to set an example of leadership in environmental stewardship.

That said, the impacts to wildlife of residential-scale wind turbines have not been extensively studied. Due to the occurrence of bald eagles, peregrine falcons, bats, and numerous	#1
other species of concern under the Endangered Species Act, the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act, the Virginia Endangered Species Act, and the Virginia Wildlife Action Plan, we encourage NASA to closely coordinate development, operation, and monitoring of this facility with us and with the U.S. Fish and Wildlife Service (USFWS), and to consider implementation of the following mitigatory measures. <ul data-bbox="235 1092 1450 1803" style="list-style-type: none">• To the greatest extent practicable, install solar panels on existing roof tops, above existing parking areas, and on other previously disturbed areas.• Avoid activities that would indirectly attract raptors to turbines through enhancement of cover or food for prey species, such as storing parts, materials, or equipment near turbines; or seeding forbs or maintaining rock piles that may attract rabbits and rodents.• Surround each turbine pad with gravel at least 2 inches deep, out to a perimeter of at least 5 feet in diameter. Maintain this perimeter to avoid creating cover or habitat for small mammals.• If animal burrows or holes are encountered near turbines, fill them as feasible.• Avoid use of guy wires on residential turbines, and install visual bird flight diverters as appropriate.• Coordinate with turbine manufacturers to select blades, if available, that would be highly visible to birds. A post-manufacture alternative, if feasible, would be to paint or pattern blades with UV paint to reduce visual "smear" (e.g., thick black stripes on each blade or one solid black blade and two lighter blades).• Curtail wind turbines on low-wind-speed nights (< 6.5 mps or < 14 mph), especially during fall migration when bats are most susceptible to turbine-related fatality and when energy generation is minimal.• Coordinate post-construction monitoring of this project with the DGIF and the USFWS.	#2

We are excited about this opportunity to work with NASA to develop a significant renewable energy facility, to study the impacts of residential-scale wind turbines on wildlife, and to cooperatively develop appropriate monitoring and mitigation protocols for such facilities.

Mr. Joshua A. Bundick
April 15, 2011
Page 3

Thank you for the opportunity to review this project and please call Ernie Aschenbach (804-367-2733) if we may be of further assistance.

Sincerely,

A handwritten signature in dark ink, appearing to read "Raymond T. Fernald", written in a cursive style.

Raymond T. Fernald, Manager
Environmental Services Section

CC: Julia Wellman, DEQ-OEIR



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

20 APR 2011

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

RE: Final Environmental Assessment (FEA) Wallops Flight Facility Alternative Energy Project, Wallops Island, Accomack County, Virginia, March, 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 Final Environmental Assessment for the Wallops Flight Facility (WFF) Alternative Energy Project located at the WFF in Wallops Island, Accomack County, Virginia. The proposed project involves the installation and operation of renewable, alternative energy technology, including wind and solar energy, at WFF to reduce the amount of greenhouse gas emissions by reducing the use of fossil fuels to generate electricity. The purpose and need of the proposed action is to generate clean, renewable energy at WFF in order to meet the requirements of the 2005 Federal Energy Act and Executive Orders 13423 and 13514. The project would also support the goal of setting an example of leadership in environmental stewardship and accountability.

In the Final EA, NASA proposed four alternatives, including the no action alternative, the preferred alternative, alternative one, and alternative two. The preferred alternative involves the construction of an 8.0 MW solar panel system located on the Main Base capable of generating 10 GWh/year of power, and the installation of two 2.4 kW residential scale turbines. Each action alternative includes the installation of two 2.4 kW residential scale turbines that are proposed to be located at the WFF visitors center and at the entrance to the Mainland. Alternative one involves the installation of one 2.0 MW utility scale turbine on Wallops Island, two residential scale turbines, and a 4 MW solar panel system with the combined generation of 10 GWh/year. Alternative two involves the construction of two 2.0 MW utility scale turbines on Wallops Island capable of generating 10 GWh/year, and two residential scale turbines.

There are several changes between alternatives presented in the Draft and Final EA. In the Draft Environmental Assessment (DEA), three alternatives were presented including the no action. At the time the proposed preferred alternative involved the installation of two utility scale turbines, presented as alternative two in the FEA. The currently proposed preferred alternative in the FEA was included in the DEA as alternative one. The FEA presents a new alternative, alternative one, which was not considered in the DEA. The DEA included the



installation of five residential scale turbines in each action alternative, which was reduced to two in the FEA.

EPA expressed several concerns about the project as it was proposed in the DEA, including adverse impacts to tidal wetlands, essential fish habitat, potential impacts to birds and bats, and effects on threatened and endangered species. NASA was urged not to proceed with the stated preferred alternative without additional investigation and study. Taking into account concerns raised by EPA, other resource agencies and members of the public, NASA has changed their preferred alternative, resulting in fewer adverse impacts while still meeting the needs of the project. EPA appreciates that the environmental concerns expressed in our comments on the DEA were given serious consideration in the FEA. EPA supports the selection of the solar panel

alternative as the preferred alternative. To continue to reduce adverse impacts and support NASA's goal to be a leader in environmental stewardship and accountability, the placement of panels on existing available infrastructure and over available parking area is encouraged. NASA is also encouraged to follow recommended minimization measures for the proposed turbines, such as avoiding the use of guy wires.

#1

EPA appreciates improvements made to the cumulative effects analysis, particularly providing an evaluation of historic baseline of resources. We urge NASA to continue to use this analysis and improve upon it in future NEPA documentation. Known future projects included in the cumulative effects analysis greatly differ between the draft and final EA. It is not clear why projects that were previously discussed were no longer included as part of the cumulative impact analysis. A complete list of known or reasonably foreseeable projects is critical to completing a cumulative effects analysis. EPA encourages NASA to include all reasonably foreseeable project in the analysis, maintain consistency between documents, and provide a rationale of why specific projects would not be carried forward.

#2

A monitoring plan and adaptive management plan were provided in the FEA. The FEA expressed that few monitoring studies have been conducted on small turbines, such as the ones proposed for use at WFF. In light of the fact, NASA is presented with a unique opportunity to conduct bird and bat monitoring for the proposed turbines and expand the base of known data.

EPA is supportive of long term bird and bat monitoring from the time of construction until the time of turbine decommissioning, as suggested in comments by U.S. Fish and Wildlife Service (FWS) and the Virginia Department of Game and Inland Fisheries. If NASA chooses to follow the two year monitoring period proposed in the FEA, EPA encourages NASA to meet with resource agencies at that time to present and discuss the monitoring results in order to determine if the appropriate length of monitoring or if additional minimization measures are necessary.

#3

It is unclear if a specific threshold for the maximum allowable level of take has been determined. This value would serve as an important signal that a stoppage or restriction of use may be necessary. It is also unclear what threshold is being used to trigger the implementation of adaptive management strategies. NASA should work with resource agencies to determine what these appropriate thresholds should be. In the event that high rates of bird and bat mortality are encountered or unanticipated impacts to rare, threatened and/or endangered species occur, NASA should seek consultation with the appropriate local, state, and federal resource agencies.

#4



Thank you for allowing EPA the opportunity to review and comment on the FEA for the Wallops Flight Facility Alternative Energy Project. If you need assistance in the future, the staff contact for this project is Ms. Alaina DeGeorgio; she can be reached at 215-814-2741.

Sincerely,



Barbara Rudnick
NEPA Team Leader
Office of Environmental Programs

cc. Kim Smith, FWS
Ernie Aschenbach, VDGIF





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

April 21, 2011

Mr. Joshua A. Bundick
250/NEPA Program Manager
WFF Alternative Energy Project
NASA Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337

RE: Final Environmental Assessment and Draft Finding of No Significant Impact (FONSI) for the NASA Wallops Alternative Energy Project (DEQ 11-055F)

Dear Mr. Bundick:

The Commonwealth of Virginia has completed its review of the above-referenced final environmental assessment (EA) and the draft Finding of No Significant Impact (FONSI). The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of federal environmental documents prepared pursuant to the National Environmental Policy Act and responding to appropriate federal officials on behalf of the Commonwealth. DEQ is also responsible for coordinating state reviews of federal consistency determinations (FCDs) submitted under the Coastal Zone Management Act. The following agencies joined in this review:

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

The Department of Health, Department of Mines, Minerals and Energy, Department of Transportation, State Corporation Commission Accomack County, Accomack-Northampton Planning District Commission also were invited to comment on the proposed project.

PROJECT DESCRIPTION

In 2010, the National Aeronautics and Space Administration (NASA) submitted a draft EA and FCD for an alternative energy project at Wallops Flight Facility in Accomack County. The purpose of the proposed project was to implement a technologically proven renewable energy source to meet requirements under the federal Energy Policy Act of 2005 and federal executive orders. The EA considers the proposed action, two alternatives and the no action alternative. The proposed action, NASA's preferred alternative, includes constructing two 2.0-megawatt (MW) utility-scale wind turbines on Wallops Island and five 2.4-kilowatt (kW) residential-scale wind turbines on the main base and mainland. Under alternative one, NASA would construct one utility-scale wind turbine and five residential-scale turbines as proposed in the preferred alternative. This alternative also includes the installation of solar panels at the main base. Alternative two proposes the installation of five residential-scale turbines and solar panels. Under the no action alternative, the alternative energy project would not be implemented. According to the document, the EA encompasses a 25-year planning horizon, which is the expected life span of the proposed wind turbines and solar panels.

NASA issued the final EA and draft Finding of No Significant Impact (FONSI) in March 2011. The final EA includes responses to the draft EA, which was reviewed under DEQ # 10-037F. The final EA states that based on concerns raised by stakeholders regarding potential impacts on birds and bats from the construction of utility-scale wind turbines on Wallops Island, NASA revised its proposed action. Under the proposed action, NASA's Preferred Alternative, NASA would install a system of solar panels on approximately 80 acres at the main base that would be capable of generating 10 gigawatt hour per year of power. Additionally, two 2.4 kW residential-scale wind turbines would be installed; no utility-scale turbines are included. Alternative One consists of a combination of solar panels, a single utility-scale wind turbine and residential-scale wind turbines. Alternative Two, which was NASA's proposed action in the draft EA, consists of constructing two utility-scale wind turbines and residential-scale wind turbines. Two residential-scale wind turbines are included in all three alternatives carried forward in the final EA instead of the five residential-scale turbines proposed in the draft EA.

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. DEQ coordinates the review of FCDs with agencies administering the enforceable and advisory policies of the VCP. The FCD within the EA finds the proposed project to be consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Zone Management Program (previously called the Virginia Coastal Resources Management Program) (VCP). On April 29, 2010, DEQ concurred (under its DEQ # 10-037F review) with NASA

that the proposed activities are consistent with the VCP, provided that NASA complies with all requirements of applicable permits and other authorizations that may be required.

ENVIRONMENTAL IMPACTS AND MITIGATION

1. Subaqueous Lands. The EA (pages 101 and 102) does not indicate that subaqueous lands or tidal wetlands will be affected.

1(a) Agency Jurisdiction. The Virginia Marine Resources Commission (VMRC) regulates encroachments in, on or over state-owned subaqueous beds as well as tidal wetlands pursuant to *Virginia Code* § 28.2-1200 through 1400.

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

- 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 (VWP) permit;
- VMRC for encroachments on or over state-owned subaqueous beds as well as tidal wetlands; and
- local wetlands board for impacts to wetlands.

The VMRC will distribute the completed JPA to the appropriate agencies. Each agency will conduct its review and respond.

1(b) Agency Comments. VMRC 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 property of the Commonwealth.

1(c) Agency Finding. VMRC states that based upon a review of the final EA, it appears that the proposed action and alternatives would not fall within the Commonwealth's jurisdiction. Therefore, no authorization would be required from VMRC.

2. Water Quality and Wetlands. The EA (page 102) states that potential areas identified for the residential-scale wind turbines and solar panels were selected to exclude wetlands; therefore, no impacts on wetlands would occur under the proposed action.

2(a) Agency Jurisdiction. The State Water Control Board promulgates Virginia's water regulations, covering a variety of permits to include Virginia Pollutant Discharge Elimination System Permit (VDPES), Virginia Pollution Abatement Permit, Surface and Groundwater Withdrawal Permit, and the VWP Permit. The VWP Permit is a state permit which governs wetlands, surface water and surface water withdrawals and impoundments. It also serves as § 401 determination of the federal Clean Water Act § 404 permits for dredge and fill activities in waters of the United States. The VWP

program is under the Office of Wetlands and Water Protection and Compliance, within the DEQ Division of Water Quality Programs. In addition to central office staff members who review and issue VWP permits for transportation and water withdrawal projects, the six DEQ regional offices perform permit application reviews and issue permits for the covered activities.

2(b) Agency Finding. The DEQ Tidewater Regional Office (TRO) states that if the preferred alternative is implemented, no wetland or surface water impacts are proposed. Therefore, no further authorization would be required from the VWP Program. DEQ TRO also states that no discharge-related permits are required for this project.

3. Erosion and Sediment Control, and Stormwater Management. The EA (page 101) states that NASA would develop and implement a site-specific stormwater pollution prevention plan (SWPPP) and an erosion and sediment control plan.

3(a) Agency Jurisdiction. The Department of Conservation and Recreation (DCR) Division of Soil and Water Conservation (DSWC) 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. NASA and its authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with the VESCL&R and VSWML&R, including coverage under the General Permit for Discharges of Stormwater 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 10,000 square feet would be regulated by VESCL&R.

Accordingly, NASA must prepare and implement an erosion and sediment control plan to ensure compliance with state law and regulations. The erosion and sediment control 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.

3(c) Virginia Stormwater Management Program (VSMP) General Permit for Stormwater Discharges from Construction Activities. According to DCR, the operator or owner of construction activities involving land-disturbing activities equal to or greater than 1 acre are required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project-specific SWPPP. The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit, and it must address water quality and quantity in accordance with the VSMP Permit Regulations. General information and registration forms for the General Permit for Discharges of Stormwater from

Construction Activities are available on DCR's website at www.dcr.virginia.gov/soil_and_water/index.shtml.

4. Solid and Hazardous Waste Management. The EA (page 113) states that construction activities would include the use of hazardous materials. Proper handling, storage and disposal procedures would be followed.

4(a) Agency Jurisdiction. Solid and hazardous wastes in Virginia are regulated by DEQ, the Virginia Waste Management Board 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 Virginia Waste Management Board and reviews permit applications for completeness and conformance with facility standards and financial assurance requirements. All Virginia localities are required, under the Solid Waste Management Planning Regulations, to identify the strategies they will follow on the management of their solid wastes to include items such as facility siting, long-term (20-year) use and alternative programs such as materials recycling and composting.

4(b) Database and Data File Searches. The DEQ Division of Land Protection and Revitalization (formally known as the Waste Division) states that the report addresses solid and hazardous waste issues. The EA does not identify the databases searched but cites waste regulations wherein lists of wastes are found. A Geographic Information System (GIS) database search did not reveal any waste sites within a half-mile radius that would impact or be impacted by the subject site. The division staff performed a cursory review of its data files and determined that there are hazardous and formerly used defense sites (FUDS) located within the same zip code; however, their proximities to the subject site are unknown:

Hazardous Waste

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

FUDS

- Wallops Island (C03VA0301, VA9799F1697)

The following website may prove helpful in locating additional information for these identification numbers: www.epa.gov/enviro/html/rcris/rcris_query_java.html.

4(c) Asbestos-Containing Materials and Lead-Based Paint. If structures are proposed to be demolished, they should be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to demolition. If these materials are found, in addition to the federal waste-related regulations mentioned above, state regulations 9VAC20-80-640 for ACM and 9VAC20-60-261 for LBP must be followed.

4(d) Agency Comments. The DEQ TRO states that multiple petroleum releases have been reported at the Wallops Flight Facility.

4(e) Agency Recommendations. DEQ has the following recommendations:

- Report evidence of a petroleum release, if discovered during construction of this project, to DEQ TRO (Lynne Smith at 757-518-2055 or Gene Siudyla at 757-518-2117).
- Petroleum-contaminated soils generated during construction of this project must be characterized and disposed of properly.
- DEQ encourages all construction projects and facilities to implement pollution prevention principles, including:
 - the reduction, reuse and recycling of all solid wastes generated; and
 - the minimization and proper handling of generated hazardous wastes.
- Report the installation or use of any portable aboveground petroleum storage tank (greater than 660 gallons pursuant to 9VAC25-91-10 *et seq.*) to DEQ (Tom Madigan at 757-518-2115) or submit documentation, if necessary, to DEQ TRO, Tom Madigan, 5636 Southern Blvd., Virginia Beach, VA 23462.
- Prior to initiating any activities that disturb land, sediment or groundwater, contact NASA Wallops (T.J. Meyer at 757-824-1987) for information concerning Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) obligations.

4(f) Requirements.

- 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.
- The installation of any regulated petroleum storage tank(s) as part of this proposed project must be conducted in accordance with the requirements of the Virginia Storage Tank Regulations 9VAC25-580-10 *et seq.* (underground tanks) and / or 9VAC25-91-10 *et seq.* (aboveground tanks).

5. Natural Heritage Resources. The EA (page 117) states that the development is proposed in areas that are marginally suitable as wildlife habitat.

5(a) Agency Jurisdiction. The mission of DCR is to conserve Virginia's natural and recreational resources. DCR supports a variety of environmental programs organized within seven divisions including the Division of Natural Heritage (DNH). DNH's mission is conserving Virginia's biodiversity through inventory, protection and stewardship. The Virginia Natural Area Preserves Act, 10.1-209 through 217 of the Code of Virginia, was passed in 1989 and codified DCR's powers and duties related to statewide biological inventory: maintaining a statewide database for conservation planning and project review, land protection for the conservation of biodiversity, and the protection and

ecological management of natural heritage resources (the habitats of rare, threatened and endangered species, significant natural communities, geologic sites, and other natural features).

5(b) Agency Findings.

(i) Resident and Migratory Birds and Bats

The DCR DNH searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. According to the information currently in DCR's files, the proposed project location at the Wallops Flight Facility on the Eastern Shore of Virginia is within a significant migratory bird area that also supports breeding populations of numerous federally- and state-listed species including: Piping Plover (*Charadrius melodus*, G3/S2B, S1N/LT/LT), Least Tern (*Sterna antillarum*, G4/S2B/NL/SC), Wilson's Plover, (*Charadrius wilsonia*, G5/S1B/NL/LE), Peregrine falcon (*Falco peregrinus*, G4/S1B, S2N/NL/LT) and Bald Eagle, (*Haliaeetus leucocephalus*, G5/S2S3B, S3N/NL/LT). In addition, this area supports populations of wading birds such as the Great Egret (*Ardea alba*, G5/S2B, S4N/NL/SC), Tricolored heron (*Egretta tricolor*, G5/S2B, S3N/NL/SC) and Little Blue Heron (*Egretta caerulea*, G5/S2B, S3N/NL/SC). One of the major migratory corridors for neotropical migrant songbirds, as well as waterfowl and shorebirds, is the Atlantic Coast of North America south to Florida (Salathe, 1991; Watts and Mabey, 1994). It has been demonstrated that some of the most significant migration and stopover areas for landbirds in the Atlantic Flyway is the Eastern Shore of Maryland and Virginia (Mabey et al, 1993; Watts and Mabey, 1994). Many species of migratory birds, particularly neotropical migrant songbirds that breed in North America and spend the non-breeding season in the sub-tropics and tropics, are experiencing population declines. For southbound migrants, the Chesapeake Bay is one of the largest physical barriers along the east coast. A combination of geographical, biological and meteorological conditions serves to concentrate birds and keep them bottled up for short periods of time on the Eastern Shore. Habitats within these stopover concentration areas should be considered critical to the persistence of bird populations that depend on them in passage (Watts and Mabey, 1994). The proposed construction of wind turbines, especially those of "utility scale," has the potential to adversely impact resident and migratory birds and bats.

(ii) Wallops Flight Facility Visitor Center

According to the information currently in DCR's files, Little Mosquito Creek Conservation Site is within the vicinity of the Wallops Flight Facility Visitor Center. 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

#1

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 to 5 with 1 being most significant. Little Mosquito Creek Conservation Site has been given a biodiversity significance ranking of B3, which represents a site of high significance. The natural heritage resource of concern at the Little Mosquito Creek is the Bald eagle (*Haliaeetus leucocephalus*, G5/S2S3B,S3N/NL/LT). The Bald eagle breeds from Alaska eastward through Canada and the Great Lakes region, along coastal areas off the Pacific and Atlantic oceans, and the Gulf of Mexico, and in pockets throughout the western United States (NatureServe, 2009). In Virginia, it primarily breeds along the large Atlantic slope rivers (James, Rappahannock, Potomac, etc.) with a few records at inland sites near large reservoirs (Byrd, 1991). Bald eagle nest sites are often found in the midst of large wooded areas near marshes or other bodies of water (Byrd, 1991). Bald eagles feed on fish, waterfowl, seabirds (Campbell et. al., 1990), various mammals and carrion (Terres, 1980). This species is currently classified as threatened by the Department of Game and Inland Fisheries (DGIF). Threats to this species include human disturbance of nest sites (Byrd, 1991), habitat loss, biocide contamination, decreasing food supply and illegal shooting (Herkert, 1992).

#1
cont.

(iii) Entrance Gate to Wallops Mainland and Island

According to information currently in DCR's files, Wallops Island Causeway Marshes Conservation Site is in the Entrance Gate vicinity. Wallops Island Causeway Marshes Conservation Site has been given a biodiversity significance ranking of B4, which represents a site of moderate significance. The natural heritage resources of concern are the saltmarsh sharp-tailed sparrow (*Ammodramus caudacutus*, G4/S2B,S3N/ NL/NL) and the northern harrier (*Circus cyaneus*, G5/S1S2B,S3N/NL/NL). The secretive saltmarsh sharp-tailed sparrow is a small songbird that breeds in a narrow strip of salt marshes along the Atlantic seaboard from southern Maine all the way south to the Florida Peninsula (NatureServe, 2009). Until 1995 this and Nelson's sharp-tailed sparrow were considered a single species. In Virginia, Saltmarsh sharp-tailed sparrows are uncommon winter residents, but they rarely start to breed with only a few nesting locations in tidal marshes of the Atlantic coast and Chesapeake Bay known each summer (Wilds, 1991). This sharp-tailed sparrow has a streaked back and breast with alternating gray and orange-buff colored stripes on its head. It has a distinctive gray nape and a gray cheek surrounded by a rather bright orange triangle. Nests are built low to the ground just above the water. Eggs are laid from May to August with double broods typical (Wilds, 1991). Widespread loss, degradation, and fragmentation of coastal salt marshes along the eastern seaboard are the biggest threats to this species. Alteration of the habitat from the invasion of the exotic common reed (*Phragmites australis*; Benoit and Askins, 1999 per NatureServe, 2009) and spraying for mosquito and other pest control (Byrd and Johnston, 1991) may also be concerns.

#2

The Northern Harrier is a slender bird of prey that breeds throughout the northern parts of the northern hemisphere in Canada, the northernmost United States, and in northern Eurasia (Bazuin, 1991). Marsh Hawk is a disused common name for the American form. Northern Harriers hunt small mammals and birds, surprising them as they drift low over fields and marshes they inhabit. While Northern Harriers are common in Virginia during the winter, they rarely breed this far south, with only a few nesting locations known each summer in the coastal plain. There are scattered, non-breeding summer records from across the state. In the early 20th century, hunting posed a great threat to the Northern Harrier (Bazuin, 1991). Later, it suffered from the effects of DDT, a widely used pesticide, which resulted in the thinning of its egg shells and thus failed reproduction (NatureServe). Current threats to the Northern Harrier include human disturbances to nesting birds and destruction of breeding habitats, including the alterations of wetlands and the conversion of grasslands from native grasses to monotypic farmland (Bazuin, 1991; NatureServe, 2009).

Additionally, the Powells Bay Conservation site with a biodiversity significance ranking of G5, which represents a site of general significance, is within the project vicinity. The natural heritage resource of concern at this site is the Bald eagle. Bat hibernacula have not been documented within 5 miles of the project site nor have maternity and bachelor colonies been documented within 12 miles of the project sites.

(iv) Mines, Rock Outcrops, Cliffs and Wetlands

DCR does not have any information to report. Contact the Department of Mines, Minerals and Energy for information on mines.

(v) Invasive Species

DCR does not track or maintain locational information on invasive species in its database. However, DCR recommends referencing the Invasive Species List located on DCR's website (www.dcr.virginia.gov/natural_heritage/documents/invlist.pdf) for mapping any invasive species within the disturbance zone.

(vi) Coastal Avian Protection Zones

The proposed residential turbine project areas are located within Zone 3 on the Coastal Avian Protection Zones map (attached map). Zone 3 is a Barrier island/seaside lagoon system, including a 100-meter (328-foot) offshore buffer. In this zone, the relevant avian species and other avian mitigation factors are threatened and endangered species (breeding and migratory Piping Plovers, Wilson's Plovers, Gull-billed Terns, Peregrine falcons and Bald Eagles) and hemispherically important staging and wintering areas for shorebirds, seabirds and waterfowl.

#3

(vii) Managed Lands

The Wallops Flight Facility Visitor Center and Entrance Gate to Wallops Mainland project areas are within the Wallops Island Flight Facility managed land under the jurisdiction of the U.S. Fish and Wildlife Service (FWS) (the attached managed lands map identifies the location of these protected lands).

5(c) Agency Comments. DCR strongly supports the use of alternative energy sources in the Commonwealth. However since the project areas are within an area of global ecological significance according to the Coastal Avian Protection Zones map, if the No Build Alternative is not feasible, DCR supports the proposed action, which is the construction of two smaller residential scale turbines (one placed at the entrance gate and security guard station at the mainland and one near the visitor center) and solar panels in open grassy areas or over parking lots at Wallops Main Base. Due to the smaller turbines and the ability of the hybrid system to produce energy utilizing the solar panels instead of the turbines during low wind speeds potentially reducing bird/bat mortality, this build alternative appears to be the least impactful to documented natural heritage resources. DCR also supports the proposed post-construction monitoring for bird and bat fatalities and adaptive management for any potential mitigation strategies.

#4

5(d) 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 VDACS to conserve, protect and manage endangered species of plants and insects. VDACS Virginia Endangered Plant and Insect Species Program personnel cooperates with the U.S. FWS, DCR DNH and other agencies and organizations on the recovery, protection or conservation of listed threatened or endangered species and designated plant and insect species that are rare throughout their worldwide ranges. In those instances where recovery plans, developed by FWS, are available, adherence to the order and tasks outlined in the plans should be followed to the extent possible. VDACS has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act. Under a Memorandum of Agreement established between the VDACS and DCR, DCR has the authority to report for VDACS on state-listed plant and insect species. The current activity will not affect any documented state-listed plants or insects.

5(e) State Natural Area Preserves. DCR states that there are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

5(f) Agency Recommendations.

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

- If the “No Build” alternative is not feasible, DCR supports the proposed action.

6. Fish and Wildlife Resources, and Protected Species. The EA (page 117) states there would be short-term adverse impacts to wildlife under the proposed action.

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

6(b) Agency Findings. DGIF responded directly to NASA on April 15, 2011. The comments are attached for your convenience. DGIF states that it endorses the proposed action because it uses solar panels and minimal construction and operation of two residential-scale turbines, rather than commercial-scale turbines. DGIF concurs that the preferred alternative provides an opportunity for NASA to achieve the objectives set forth by the 2005 Federal Energy Policy Act.

6(c) Agency Comments. DGIF states that impacts to wildlife of residential-scale wind turbines have not been extensively studied.

6(d) Agency Recommendations. Due to the occurrence of bald eagles, peregrine falcons, bats and numerous other species of concern under the Endangered Species Act, the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act, the Virginia Endangered Species Act and the Virginia Wildlife Action Plan, DGIF encourages NASA to coordinate development, operation and monitoring with DGIF and the FWS and to implement the following measures:

- Install solar panels on existing roof tops, above existing parking areas and on other previously disturbed areas to the greatest extent practicable.
- Avoid activities that would indirectly attract raptors to turbines through enhancement of cover or food for prey species, such as storing parts, materials or equipment near turbines, seeding forbs or maintaining rock piles that may attract rabbits and rodents.
- Surround each turbine pad with gravel at least 2 inches deep to a perimeter of at least 5 feet in diameter. Maintain the perimeter to avoid creating cover or habitat for small mammals.
- Fill animal borrows or holes near turbines.
- Avoid the use of guy wires on residential turbines and install visual bird flight diverters as appropriate.

- Coordinate with turbine manufactures to select blades, if available, that would be highly visible to birds. A post-manufacture alternative, if feasible, would be to paint the blades with ultraviolet (UV) paint (e.g., thick black stripes on each blade or one solid black blade and two lighter blades) to reduce visual “smear.”
- Curtail wind turbines on low-wind-speed nights, especially during fall migration when bats are most susceptible to turbine-related fatality and when energy generation is minimal.
- Coordinate post-construction monitoring of this project with DGIF and the FWS.

Contact DGIF (Ernie Aschenbach at 804-367-2733) for additional information about these comments and recommendations.

7. Historic Structures. The EA (page 139) indicates that there would be no adverse effect to historic properties or archaeological resources with the implementation of appropriate mitigation measures under the proposed action.

7(a) Agency Jurisdiction. DHR conducts reviews of projects to determine their effect on historic structures or cultural resources under its jurisdiction. DHR, as the designated Historic Preservation Office for the Commonwealth, ensures that federal actions comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulation at 36 Code of Federal Regulations 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 (NRHP). Section 106 also applies if there are any federal involvements, such as licenses, permits, approvals or funding. DHR also provides comments to DEQ through the state environmental impact report review process.

7(b) Agency Findings. DHR has been in direct consultation with NASA regarding this project and reached consensus that the proposed project will not adversely affect historic properties.

8. Energy Resources.

8(a) Agency Jurisdiction. The General Assembly passed legislation in 2009 requiring DEQ to develop one or more permits-by-rule for the construction and operation of small renewable energy projects with rated capacity not exceeding 100 MW. DEQ’s regulations must take the form of permits by rule. The first permit-by-rule – for wind projects – became effective in December 2010. The solar permit by rule is undergoing Executive Review, which will be followed by a public comment period.

8(b) Agency Findings. DEQ’s renewable energy program states that it appears that requirements pursuant to DEQ’s final wind permit-by-rule (PBR) regulation (9VAC15-40-130 A) would not be applicable to the proposed action. It appears that the proposed solar project would involve a rated capacity of 8 MW and approximately 15 acres, and these characteristics might be subject to the requirements of DEQ’s upcoming solar PBR. DEQ has developed a proposed solar PBR regulation, which has been approved

#5

by DEQ's director and is currently undergoing Executive Review. Until this proposed regulation becomes final and effective, authority over solar projects remains with the State Corporation Commission (SCC). After DEQ's solar PBR becomes final, there will likely be requirements for projects such as the one proposed for the NASA site. As provided in the currently-proposed regulation, solar projects with a rated capacity greater than 5 MW and a disturbance zone greater than 10 acres will be required to meet the solar PBR requirements (9VAC15-60), provided that the projects do not otherwise meet the criteria set forth in 9VAC15-60-130. Section 9VAC15-60-130 provides, among other things, that solar projects mounted over existing parking lots are not required to submit any notification or certification to DEQ.

#5
cont.

8(c) Agency Recommendation. Coordinate with the SCC (Wayne Smith at Wayne.Smith@scc.virginia.gov) if the project is implemented prior to the effective date of DEQ's solar PBR and coordinate with DEQ (Carol Wampler at Carol.Wampler@deq.virginia.gov) after DEQ's solar PBR becomes effective, as necessary.

9. Pesticides and Herbicides. Should maintenance activities require the use of herbicides or pesticides, these chemicals should be used 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 Virginia Department of Agriculture and Consumer Services (VDACS) at (804) 786-3501 for more information.

REGULATORY AND COORDINATION NEEDS

1. Erosion and Sediment Control, and Stormwater Management.

1(a) Erosion and Sediment Control. NASA and its authorized agents conducting regulated land-disturbing activities of 10,000 square feet or more must comply with the Virginia Erosion and Sediment Control Law and Regulations (VESCL&R), Virginia Stormwater Management Law and Regulations. NASA must prepare and implement an erosion and sediment control plan to ensure compliance with state law and regulations. The erosion and sediment control plan should be submitted to the DCR Suffolk Regional Office at (757) 925-2468 (Reference: VESCL §10.1-567).

1(b) Virginia Stormwater Management Program General Permit for Stormwater Discharges from Construction Activities. For land-disturbing activities equal to or greater than 1 acre, NASA is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project specific stormwater pollution prevention plan (SWPPP). The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit, and it must address water quality and quantity in accordance with the VSMP Permit Regulations. Specific questions regarding the Stormwater Management Program requirements should be directed to DCR (Holly Sepety at 804-225-2613) (Reference: Virginia Stormwater Management Law §10.1-603.1 *et seq.*; VSMP Permit Regulations §4VAC-50 *et seq.*).

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

- Virginia Waste Management Act (Code of Virginia Section 10.1-1400 *et seq.*);
- Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC20-60);
- Virginia Solid Waste Management Regulations (VSWMR) (9VAC20-80);
- Virginia Vegetative Waste Management Regulations (9VAC20-101 *et seq.*); and
- Virginia Regulations for the Transportation of Hazardous Materials (9VAC20-110).

Some of the applicable federal laws and regulations are:

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

2(a) Asbestos-Containing Material. It is the responsibility of the owner or operator of a renovation or demolition activity, prior to the commencement of the renovation or 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, as applicable. Upon classification as friable or non-friable, all asbestos-containing material shall be disposed of in accordance with the Virginia Solid Waste Management Regulations (9VAC20-80-640) and transported in accordance with the Virginia regulations governing Transportation of Hazardous Materials (9VAC20-110-10 *et seq.*). Contact the DEQ Division of Land Protection and Revitalization (804-698-4145) for additional information and the Department of Labor and Industry (Ronald L. Graham at 804-786-0574).

2(b) Lead-Based Paint. This 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 at (David Dick at 804-367-8588).

3. Natural Heritage Resources. Contact the DCR DNH at (804) 786-7951 for an update on natural heritage information if a significant amount of time passes before it is utilized.

4. Protected Species Legislation. Due to the legal status of several resources documented in this area, coordinate with the U.S. FWS (Tylan Dean at

Mr. Joshua A. Bundick
NASA Wallops Alternative Energy Project
Final EA and FONSI
11-055F

Tylan_Dean@fws.gov) and DGIF (Ernie Aschenbach at *Ernie.Aschenbach@dgif.virginia.gov*) to ensure compliance with federal (16 U.S.C. sections 1531 *et seq.*) and state (Virginia Code §29.1-563 *et seq.*) protected species legislation, as necessary.

5. Storage Tanks.

- Report evidence of a petroleum release, if discovered during construction of this project, to DEQ TRO (Lynne Smith at 757-518-2055 or Gene Siudyla at 757-518-2117).
- Report the installation or use of any portable aboveground petroleum storage tank (greater than 660 gallons pursuant to 9VAC25-91-10 *et seq.*) to DEQ (Tom Madigan at 757-518-2115) or submit documentation, if necessary, to DEQ TRO, Tom Madigan, 5636 Southern Blvd., Virginia Beach, VA 23462.

6. Federal Facilities Program Concerns. Prior to initiating any activities that disturb land, sediment or groundwater, contact NASA Wallops (T.J. Meyer at 757-824-1987) for information concerning Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) obligations.

7. Solar Requirements or Regulations. Coordinate with the SCC (Wayne Smith at *Wayne.Smith@scc.virginia.gov*) if the project is implemented prior to the effective date of DEQ's solar PBR and coordinate with DEQ (Carol Wampler at *Carol.Wampler@deq.virginia.gov*) after DEQ's solar PBR becomes effective, as necessary.

Thank you for the opportunity to review the final EA for this undertaking. Detailed comments of reviewing agencies are attached for your review. Please contact me at (804) 698-4325 or Julia Wellman at (804) 698-4326 for clarification of these comments.

Sincerely,



Ellie L. Irons, Manager
Office of Environmental Impact Review

Enclosures

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

ec: Joshua Bundick, NASA
Amy Ewing, DGIF
Robbie Rhur, DCR
Barry Matthews, VDH

Mr. Joshua A. Bundick
NASA Wallops Alternative Energy Project
Final EA and FONSI
11-055F

Sanjay Thirunagari, DEQ ORP
Kotur S. Narasimhan, DEQ DAPC
Chris Adkins, VDOT
Cindy Keltner, DEQ TRO
George Badger, VMRC
Roger Kirchen, DHR
Laura McKay, VCP
Carol Wampler, DEQ
Wayne Smith, SCC



COMMONWEALTH of VIRGINIA

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

Douglas W. Donnench
Secretary of Natural Resources

Steven G. Bowman
Commissioner

March 30, 2011

Ms. Julia H. Wellman
c/o Department of Environmental Quality
Office of the Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, Virginia 23219

Re: 11-055 (Final Alternative Energy Project, Wallops Island)
(See 10-037F)

Dear Ms. Wellman:

You have inquired regarding the construction of an 80-acre system of solar panels at the Main Base that would be capable of generating 10 gigawatt-hours per year of electricity. Additionally, two 2.4 kilowatt residential-scale wind turbines would be installed near the WFF Visitor Center and the entrance gate/security guard station at the Mainland, respectively. (This is the Proposed Action/Preferred Alternative.) The purpose of the proposed Alternative Energy Project is to generate clean, renewable energy at WFF from a technologically proven source in order to meet the requirements of the 2005 Federal Energy Policy Act and EOs 13423 and 13514.

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 "Final Environmental Assessment for the Alternative Energy Project", dated March 2011, it would appear that your "Proposed Action and Alternatives" will not fall within the Commission's jurisdiction, therefore, no authorization would be required from the Marine Resources Commission.

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

Sincerely,

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

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



COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

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

MEMORANDUM

DATE: April 6, 2011
TO: Julia Wellman, DEQ
FROM: Roberta Rhur, DCR, Environmental Impact Review Coordinator
Subject: DEQ 11-055F, NASA Wallops Island Alternative Energy Project Re-Review

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.

DCR-DNH has reviewed the Final Environmental Assessment (EA) for the proposed Wallops Flight Facility Alternative Energy Project and reiterates the comments provided in a memo dated April 5, 2010, as well as the following:

Documented Natural Heritage Resources

Wallops Flight Facility Visitors Center

According to the information currently in our files, Little Mosquito Creek Conservation Site is within the vicinity of the Wallops Flight Facility Visitors Center. 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. Little Mosquito Creek Conservation Site has been given a biodiversity significance ranking of B3, which represents a site of high significance,

The natural heritage resource of concern at the Little Mosquito Creek is:

Haliaeetus leucocephalus

Bald eagle

G5/S2S3B,S3N/NL/LT

The Bald eagle breeds from Alaska eastward through Canada and the Great Lakes region, along coastal areas off the Pacific and Atlantic Oceans, and the Gulf of Mexico, and in pockets throughout the western United States (NatureServe, 2009). In Virginia, it primarily breeds along the large Atlantic slope rivers (James, Rappahannock, Potomac, etc) with a few records at inland sites near large reservoirs (Byrd, 1991). Bald eagle nest sites are often found in the midst of large wooded areas near marshes or other bodies of water (Byrd, 1991). Bald eagles feed on fish, waterfowl, seabirds (Campbell et. al., 1990), various mammals and carrion (Terres, 1980). Please note that this species is currently classified as threatened by the Virginia Department of Game and Inland Fisheries (VDGIF).

Threats to this species include human disturbance of nest sites (Byrd, 1991), habitat loss, biocide contamination, decreasing food supply and illegal shooting (Herkert, 1992).

DCR recommends utilizing the Center for Conservation Biology 's Virginia Bald Eagle Information Website at <http://www.ccb-wm.org/virginiaeagles/eagleData.php> to obtain updated Bald eagle information. If Bald eagle nests are identified within .25 miles of the project area, DCR also recommends coordination with VDGIF to ensure compliance with protected species legislation.

Entrance Gate to Wallops Mainland and Island

According to information currently in our files, Wallops Island Causeway Marshes Conservation Site is in the Entrance Gate vicinity. Wallops Island Causeway Marshes Conservation Site has been given a biodiversity significance ranking of B4, which represents a site of moderate significance. The natural heritage resources of concern are:

<i>Ammodramus caudacutus</i>	Saltmarsh Sharp-tailed sparrow	G4/S2B,S3N/NL/NL
<i>Circus cyaneus</i>	Northern harrier	G5/S1S2B,S3N/NL/NL

The secretive Saltmarsh Sharp-tailed sparrow is a small songbird that breeds in a narrow strip of salt marshes along the Atlantic seaboard from southern Maine all the way south to the Florida Peninsula (NatureServe, 2009). Until 1995 this and Nelson's Sharp-tailed sparrow were considered a single species. In Virginia, Saltmarsh Sharp-tailed Sparrows are uncommon winter residents, but they rarely start to breed with only a few nesting locations in tidal marshes of the Atlantic coast and Chesapeake Bay known each summer (Wilds, 1991).

This Sharp-tailed sparrow has a streaked back and breast with alternating gray and orange-buff colored stripes on its head. It has a distinctive gray nape and a gray cheek surrounded by a rather bright orange triangle. Nests are built low to the ground just above the water. Eggs are laid from May to August with double broods typical (Wilds, 1991).

Widespread loss, degradation, and fragmentation of coastal salt marshes along the eastern seaboard are the biggest threats to this species. Alteration of the habitat from the invasion of the exotic common reed (*Phragmites australis*; Benoit and Askins, 1999 per NatureServe, 2009) and spraying for mosquito and other pest control (Byrd and Johnston, 1991) may also be concerns.

The Northern Harrier is a slender bird of prey that breeds throughout the northern parts of the northern hemisphere in Canada, the northernmost USA, and in northern Eurasia (Bazuin, 1991). Marsh Hawk is a disused common name for the American form. Northern Harriers hunt small mammals and birds, surprising them as they drift low over fields and marshes they inhabit. While Northern Harriers are common in Virginia during the winter, they rarely breed this far south, with only a few nesting locations known each summer in the coastal plain. There are scattered, non-breeding summer records from across the state.

In the early 20th century, hunting posed a great threat to the Northern Harrier (Bazuin, 1991). Later, it suffered from the effects of DDT, a widely used pesticide, which resulted in the thinning of its egg shells and thus failed reproduction (NatureServe). Current threats to the Northern Harrier include human disturbances to nesting birds and destruction of breeding habitats, including the alterations of wetlands and the conversion of grasslands from native grasses to monotypic farmland (Bazuin, 1991; NatureServe, 2009).

Additionally, the Powells Bay Conservation site, with a biodiversity significance ranking of G5, which represents a site of general significance, is within the project vicinity. The natural heritage resource of concern at this site is the Bald eagle.

Bat hibernacula have not been documented within 5 miles of the project site nor have maternity and bachelor colonies been documented within 12 miles of the project sites.

Mines; Rock Outcrops; Cliffs and Wetlands

DCR does not track or maintain locational information on invasive species in our database. Please contact the Department of Mines, Minerals and Energy for information on mines and the Virginia Department of Environmental Quality for information on wetlands

Invasive Species

DCR does not track or maintain locational information on invasive species in our database. However, DCR recommends referencing the Invasive Species List located on DCR's website (http://www.dcr.virginia.gov/natural_heritage/documents/invlist.pdf) for mapping any invasive species within the disturbance zone.

Other

Coastal Avian Protection Zones

The proposed residential turbine project areas are located within Zone 3 on the Coastal Avian Protection Zones map (see attached map). Zone 3 is a Barrier island/seaside lagoon system, including a 100 m (328 ft) offshore buffer. In this zone, the relevant avian species and other avian mitigation factors are: T&E species (breeding and migratory Piping Plovers, Wilson's Plovers, Gull-billed Terns, Peregrine falcons and Bald Eagles) and hemispherically important staging area and wintering area for shorebirds, seabirds and waterfowl.

Managed Lands

The Wallops Flight Facility Visitors Center and Entrance Gate to Wallops Mainland project areas are within the Wallops Island Flight Facility managed land under the jurisdiction of the U.S. Fish and Wildlife Service (See attached Managed Lands map for location of these protected lands).

DCR strongly supports the use of alternative energy sources in the Commonwealth. However since the project areas are within an area of global ecological significance according to the "Coastal Avian Protection Zones" map . if the "No Build" alternative is not feasible, DCR supports the Proposed Action (two smaller residential scale turbines, one placed a the entrance gate/ security guard station at the Mainland and one near the WFF Visitors Center and solar panels in open grassy areas or over parking lots at Wallops Main Base). Due to the smaller turbines and the ability of the hybrid system to produce energy

utilizing the solar panels instead of the turbines during low wind speeds potentially reducing bird/bat mortality, this build alternative appears to be the least impactful to documented natural heritage resources.. DCR also supports the proposed post –construction monitoring for bird and bat fatalities and adaptive management for any potential mitigation strategies.

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

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Department of Conservation and Recreation (DCR), DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

The Virginia Department of Game and Inland Fisheries maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from <http://vafwis.org/fwis/> or contact Shirl Dressler at (804) 367-6913.

Division of Soil and Water Conservation

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

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

[Reference: Virginia Stormwater Management Law Act §10.1-603.1 et seq.; VSMP Permit Regulations §4VAC-50 et seq.]

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

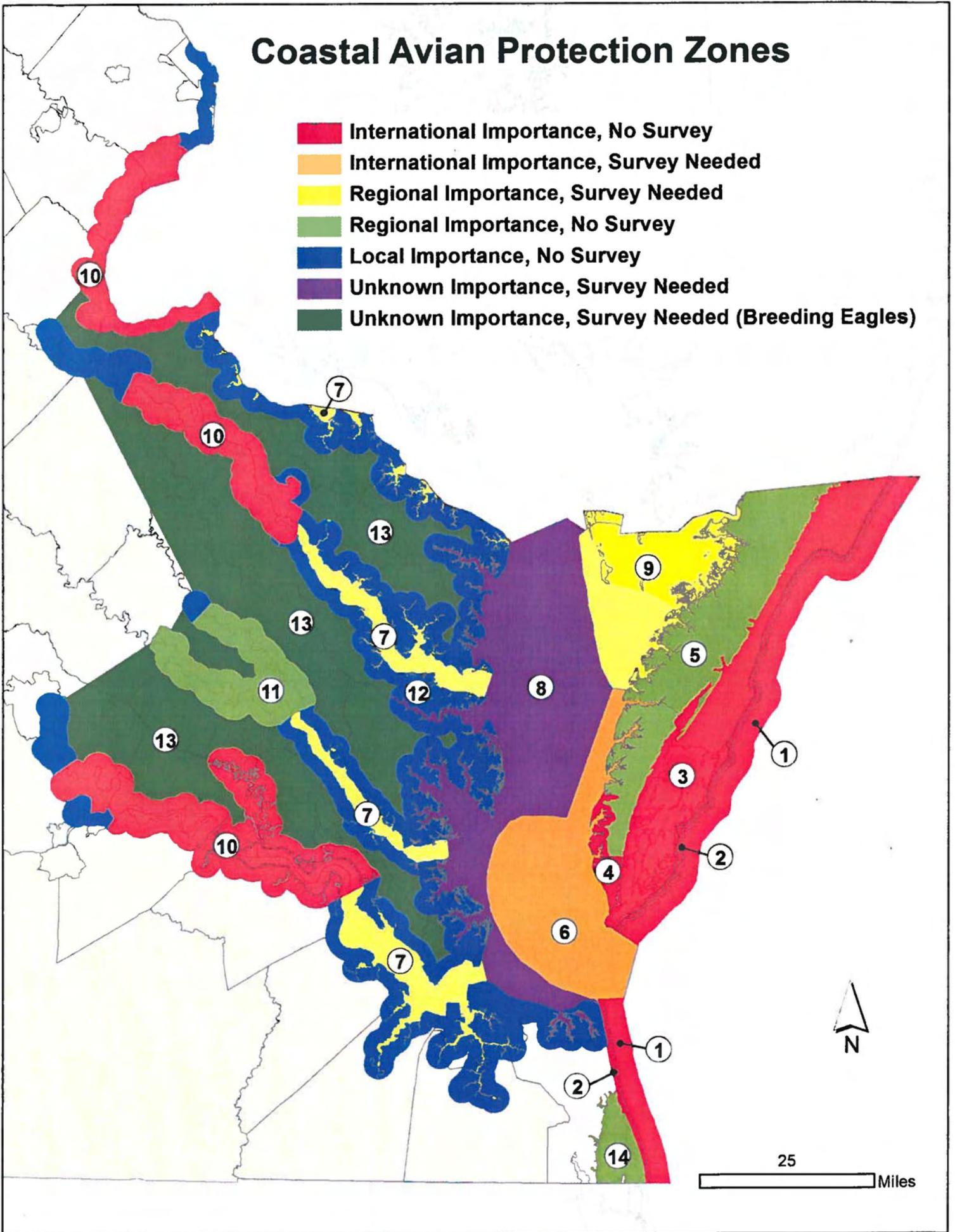
Cc: Amy Ewing, VDGIF

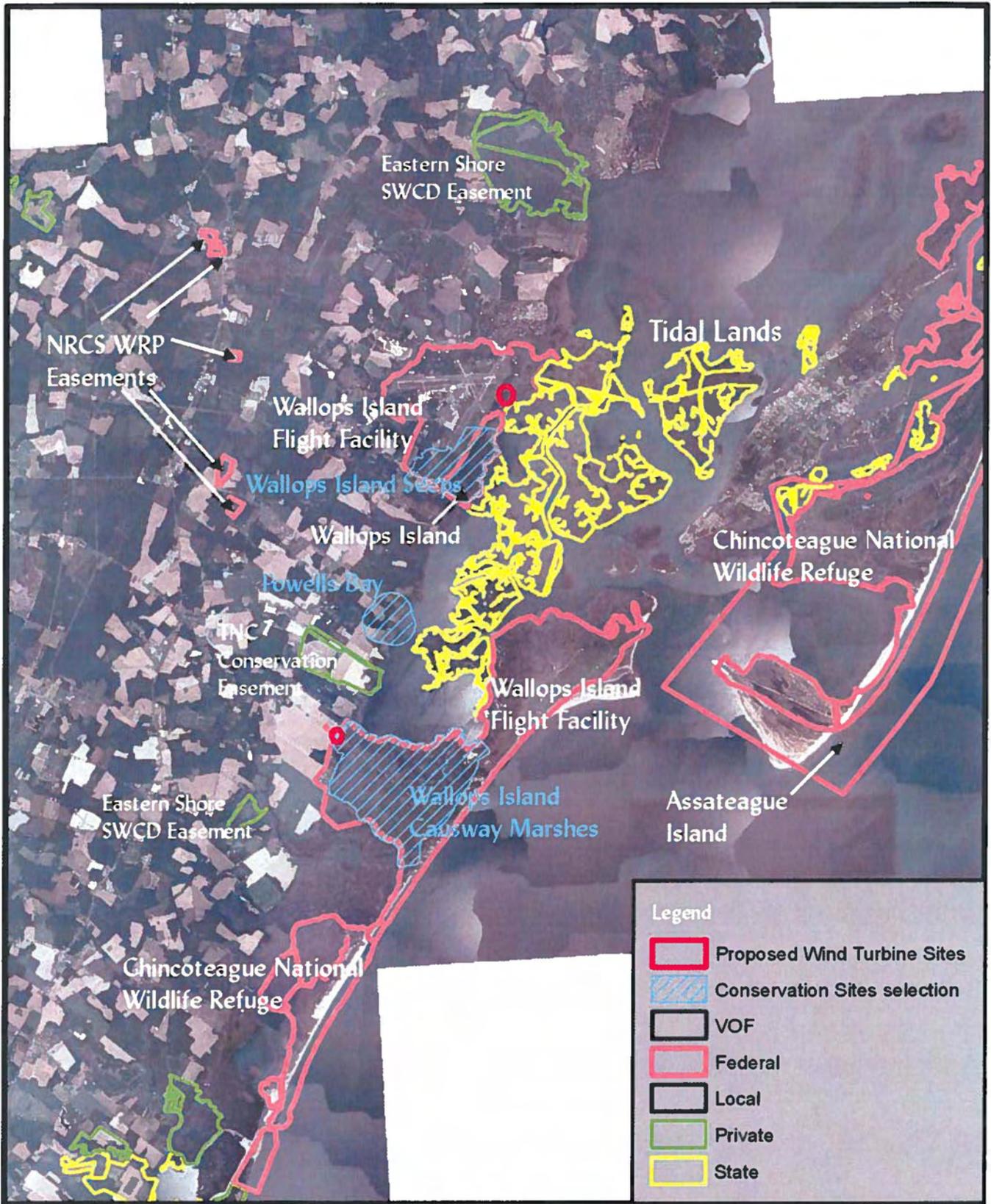
Literature Cited

- Bazuin, J. B. 1991. Northern Harrier, *Circus cyaneus*. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. pp. 496-497.
- Benoit, L. K. and R. A. Askins. 1999. Impact of the spread of PHRAGMITES on the distribution of birds in Connecticut tidal marshes. Wetlands 19:194-208.
- Byrd, M.A. 1991. Bald eagle. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. Pp. 499-501.
- Byrd, M. A., and D. W. Johnston. 1991. Birds. Pages 477-537 in K. Terwilliger, coordinator. Virginia's endangered species: proceedings of a symposium. McDonald and Woodward Publ. Co., Blacksburg, Virginia.
- Campbell, R.W., N.K. Dawe, I. McTaggart-Cowan, J.M. Cooper, G.W. Kaiser, and M.C.E. McNall. 1990. The Birds of British Columbia. Vol. 1. Nonpasserines: Introduction and loons through waterfowl. Royal British Columbia Museum, Victoria, British Columbia, Canada.
- Herkert, J. R., editor. 1992. Endangered and threatened species of Illinois: status and distribution. Vol. 2: Animals. Illinois Endangered Species Protection Board. iv + 142 pp.
- NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: June 24, 2010, March 16, 2010 March 30, 2010,)
- Terres, J.K. 1980. The Audubon Society encyclopedia of North American birds. Alfred A. Knopf, New York.
- Wilds, Claudia. 1991. Sharp-tailed Sparrow. . In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. pp. 523-525.

Coastal Avian Protection Zones

- International Importance, No Survey
- International Importance, Survey Needed
- Regional Importance, Survey Needed
- Regional Importance, No Survey
- Local Importance, No Survey
- Unknown Importance, Survey Needed
- Unknown Importance, Survey Needed (Breeding Eagles)





Wallops Island Alternative Energy Project Re-review Managed Lands Map

prepared by DCR-DNH April 5, 2011





MEMORANDUM

TO: Julia Wellman, Environmental Program Planner

FROM: Paul Kohler, Division of Land Protection & Revitalization Review Coordinator

DATE: April 5, 2011

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

SUBJECT: Environmental Impact Report: Final Environmental Assessment (EA) and Draft FONSI for the Wallops Flight Facility (WFF) Alternative Energy Project; 11-055F

The Division of Land Protection & Revitalization has completed its review of the Environmental Impact report for the Final Environmental Assessment (EA) and Draft FONSI for the Wallops Flight Facility (WFF) Alternative Energy Project in Wallops Island, Virginia. We have the following comments concerning the waste issues associated with this project:

Both solid and hazardous waste issues were addressed in the report. The report does not specifically state databases searched, but cites waste regulations wherein lists of wastes are found. GIS database search did not reveal any waste sites within a half mile radius that would impact or be impacted by the subject site. The Division of Land Protection & Revitalization staff performed a cursory review of its data files and determined that there are a number of CERCLIS sites, hazardous waste sites, solid waste sites and voluntary remediation program (VRP) sites located within the same zip code, however their proximity to the subject site is unknown. These are as follows.

HW

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

FUDS

C03VA0301, VA9799F1697, WALLOPS ISL

The following websites may prove helpful in locating additional information for these identification numbers: http://www.epa.gov/enviro/html/rcris/rcris_query_java.html. Paul Herman of DEQ's Federal Facilities Program was contacted for his review of this determination and his comments are as follows.

Paul,

DEQ's Federal Facilities Restoration Program recommends contacting Mr. T.J. Meyer of the installation at (757-824-1987) for information concerning Comprehensive

Environmental Response, Compensation, and Liability Act (CERCLA) obligations at this installation. Please advise Mr. Meyer prior to initiating any land, sediment, or groundwater disturbing activities associated with the NASA Wallops Flight Facility's alternative energy project.

Paul E. Herman, P.E.
Remediation Project Manager
Federal Facilities Program
Virginia Department of Environmental Quality

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

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

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

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



DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
ENVIRONMENTAL IMPACT REVIEW COMMENTS

April 15, 2011

PROJECT NUMBER: 11-055F

PROJECT TITLE: Final Environmental Assessment and Draft FONSI-Wallops Flight Facility

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

Petroleum Storage Tank Cleanups:

There has been multiple petroleum releases reported at the Wallops Flight Facility. If evidence of a petroleum release is discovered during construction of this project, it must be reported to DEQ. Contact Ms. Lynne Smith at (757) 518-2055 or Mr. Gene Siudyla at (757) 518-2117. Petroleum contaminated soils or ground water generated during construction of this project must be properly characterized and disposed of properly.

Petroleum Storage Tank Compliance/Inspections:

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. In addition, The installation or use of any portable aboveground petroleum storage tank (>660 gallons - 9 VAC 25-91-10 et seq.) 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):

Provided that the preferred alternative is implemented, no wetland or surface water impacts are proposed, therefore, no further authorization would be required from this program.

Air Permit Program :

No comments.

Water Permit Program :

VPDES Water Permit Section - No discharge related permits under our purview required in association with this project.

Ground Water - No comments



DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
ENVIRONMENTAL IMPACT REVIEW COMMENTS

April 15, 2011

PROJECT NUMBER: 11-055F

PROJECT TITLE: Final Environmental Assessment and Draft FONSI-Wallops Flight Facility

Waste Permit Program :

All construction and demolition debris, including excess soil, must be characterized in accordance with the Virginia Hazardous Waste Management Regulations prior to disposal at an appropriate off site facility. In addition due to the potential for encountering MEC coordination with DEQ's Federal Facility Restoration Program is recommended.

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

Wellman, Julia (DEQ)

From: Aschenbach, Ernie (DGIF)
Sent: Friday, April 15, 2011 12:19 PM
To: Bundick, Joshua A. (WFF-2500); Wellman, Julia (DEQ)
Cc: ProjectReview (DGIF)
Subject: ESSLog 25379; NASA WFF Alternative Energy Project, DGIF comments re: Final EA and FONSI
Attachments: Document.pdf
Importance: High

Please see attached. A paper-copy has been mailed to NASA. Thank you.

Ernie Aschenbach
Environmental Services Biologist
Virginia Dept. of Game and Inland Fisheries 4010 West Broad Street
Richmond, VA 23230
Phone: (804) 367-2733
FAX: (804) 367-2427
Email: Ernie.Aschenbach@dgif.virginia.gov

Attachment.



COMMONWEALTH of VIRGINIA

Douglas W. Domenech
Secretary of Natural Resources

Department of Game and Inland Fisheries

Robert W. Duncan
Executive Director

April 15, 2011

Joshua A. Bundick
Lead, Environmental Planning
NASA Wallops Flight Facility
Code 250.W
Wallops Island, VA 23337

RE: ESSLog 25379;
NASA WFF Alternative
Energy Project

Dear Mr. Bundick:

We have reviewed the NASA Wallops Flight Facility (WFF) Alternative Energy Project Final Environmental Assessment (FEA) and Finding of No Significant Impact (FONSI). The Department of Game and Inland Fisheries (DGIF), as the Commonwealth's wildlife and freshwater fish management agency, exercises 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 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 (DEQ), the Virginia Marine Resources Commission, the Virginia Department of Transportation, the U. S. Army Corps of Engineers, the Federal Energy Regulatory Commission, 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.

The Proposed Action (preferred alternative) would produce 10 GWh/year of electricity through installation of an 8.0 MW system of solar panels and two ancillary residential-scale wind turbines. The solar panel system would consist of approximately 38,000 15-square-foot panels. Panel configuration and spacing to avoid shading and facilitate maintenance would increase the required solar panel land area to approximately 80 acres. Electricity generated by the solar panels would be connected via underground transmission lines to switchgear enclosed in a 320 square-foot pre-fabricated building. Solar panels would be installed in open, grassy areas or over parking lots at Wallops Main Base. One of the residential-scale 2.4 kW wind turbines would be installed near the WFF Visitors Center, and a second would be installed near the entrance gate/security guard station on the Mainland. The residential-scale wind turbines would be installed with a setback of 100 feet from existing towers, buildings, and trees. No transformers

or interconnection switchgear are proposed for these turbines. According to the FEA, the residential-scale turbines would not contribute much to the percent of energy generated from renewable sources at WFF; their primary purpose would be educational outreach about renewable energy to WFF employees and the public.

The FEA and FONSI acknowledge that the preferred alternative would have both adverse and beneficial impacts on environmental resources, while stipulating that adverse impacts would be mitigated to the greatest extent practicable. As we recommended in our review of the draft EA, we endorse the currently proposed alternative because it utilizes solar panels and minimal (i.e., experimental and educational) construction and operation of two residential-scale turbines, rather than commercial-scale turbines. We concur that the preferred alternative provides an opportunity for NASA to achieve the objectives set forth by the 2005 Federal Energy Policy Act, thereby supporting NASA's goal to set an example of leadership in environmental stewardship.

That said, the impacts to wildlife of residential-scale wind turbines have not been extensively studied. Due to the occurrence of bald eagles, peregrine falcons, bats, and numerous other species of concern under the Endangered Species Act, the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act, the Virginia Endangered Species Act, and the Virginia Wildlife Action Plan, we encourage NASA to closely coordinate development, operation, and monitoring of this facility with us and with the U.S. Fish and Wildlife Service (USFWS), and to consider implementation of the following mitigatory measures.

- To the greatest extent practicable, install solar panels on existing roof tops, above existing parking areas, and on other previously disturbed areas.
- Avoid activities that would indirectly attract raptors to turbines through enhancement of cover or food for prey species, such as storing parts, materials, or equipment near turbines; or seeding forbs or maintaining rock piles that may attract rabbits and rodents.
- Surround each turbine pad with gravel at least 2 inches deep, out to a perimeter of at least 5 feet in diameter. Maintain this perimeter to avoid creating cover or habitat for small mammals.
- If animal burrows or holes are encountered near turbines, fill them as feasible.
- Avoid use of guy wires on residential turbines, and install visual bird flight diverters as appropriate.
- Coordinate with turbine manufacturers to select blades, if available, that would be highly visible to birds. A post-manufacture alternative, if feasible, would be to paint or pattern blades with UV paint to reduce visual "smear" (e.g., thick black stripes on each blade or one solid black blade and two lighter blades).
- Curtail wind turbines on low-wind-speed nights (< 6.5 mps or < 14 mph), especially during fall migration when bats are most susceptible to turbine-related fatality and when energy generation is minimal.
- Coordinate post-construction monitoring of this project with the DGIF and the USFWS.

We are excited about this opportunity to work with NASA to develop a significant renewable energy facility, to study the impacts of residential-scale wind turbines on wildlife, and to cooperatively develop appropriate monitoring and mitigation protocols for such facilities.

Mr. Joshua A. Bundick
April 15, 2011
Page 3

Thank you for the opportunity to review this project and please call Ernie Aschenbach (804-367-2733) if we may be of further assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Raymond T. Fernald". The signature is fluid and cursive, with a long, sweeping tail on the final letter.

Raymond T. Fernald, Manager
Environmental Services Section

CC: Julia Wellman, DEQ-OEIR

Wellman, Julia (DEQ)

From: Kirchen, Roger (DHR)
Sent: Wednesday, April 13, 2011 4:58 PM
To: Wellman, Julia (DEQ)
Subject: Wallops Flight Facility Alternative Energy Project (DEQ #11-055F; DHR File No. 2009-1883)

DHR has been in direct consultation with NASA regarding this project and reached consensus that the proposed Wallops Flight Facility Alternative Energy Project will result in no adverse effect to historic properties. DHR has no further comment at this time.

Roger

*Roger W. Kirchen, Archaeologist
Office of Review and Compliance
Division of Resource Services and Review
Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221
phone: 804-367-2323 x153
fax: 804-367-2391
roger.kirchen@dhr.virginia.gov
www.dhr.virginia.gov*

Wellman, Julia (DEQ)

From: Wampler, Carol (DEQ)
Sent: Thursday, March 24, 2011 5:47 PM
To: Wellman, Julia (DEQ)
Subject: RE: Review Request: NASA Wallops Alternative Energy Project, Final EA/Draft FONSI DEQ 11-055F

Dear Julia:

Thank you for the opportunity to review the NASA Wallops proposal.

DEQ's new renewable energy permit-by-rule regulatory program addresses wind, solar, and other renewable energy projects.

WIND: As I read NASA's proposal, the wind turbines would be so small that there would be no requirements pursuant to DEQ's final wind PBR regulation, found at 9VAC15-40. ([See 9VAC15-40-130 A](#))

SOLAR: I believe the proposed solar project would involve a rated capacity of 8 MW and approximately 15 acres, and these characteristics might well implicate the requirements of DEQ's upcoming Solar PBR. DEQ has developed a proposed Solar PBR regulation, which has been approved by DEQ's Director and is currently undergoing Executive Review. Until this proposed regulation becomes final and effective, authority over solar projects remains with the State Corporation Commission. After DEQ's Solar PBR becomes final, there will likely be requirements for projects such as the one proposed for the NASA site. As provided in the currently-proposed regulation, solar projects with a rated capacity greater than 5 MW and a disturbance zone greater than 10 acres will be required to meet the Solar PBR requirements (9VAC15-60), provided that the projects do not otherwise meet the criteria set forth in 9VAC15-60-130. Section 9VAC15-60-130 provides, among other things, that solar projects mounted over existing parking lots are not required to submit any notification or certification to DEQ.

Please let me know if you have questions about the renewable energy PBR program.

Sincerely,
Carol

Carol C. Wampler
Renewable Energy Policy Manager
Department of Environmental Quality
629 East Main Street
Richmond, Virginia 23219
804-698-1579
carol.wampler@deq.virginia.gov
carol.wampler.renewable.energy@gmail.com

From: Wellman, Julia (DEQ)
Sent: Thursday, March 24, 2011 3:53 PM
To: Spears, David (DMME); 'administration@co.accomack.va.us'; 'planning@co.accomack.va.us'; 'anpdc@a-npdc.org'; 'bschwenk@a-npdc.org'; Ewing, Amy (DGIF); Kirchen, Roger (DHR); Narasimhan, Kotur (DEQ); Rhur, Robbie (DCR); Adkins, Chris (VDOT); Badger, Hank (MRC); Forsgren, Diedre (VDH); Thirunagari, Sanjay (DEQ); Keltner, Cindy (DEQ); Harrington, Rusty N. (DOAV); McKay, Laura (DEQ); Wampler, Carol (DEQ); 'Wayne.Smith@scc.virginia.gov'
Cc: Watkinson, Tony (MRC); Matthews, Barry (VDH); Dressler, Shirl (DGIF)
Subject: Review Request: NASA Wallops Alternative Energy Project, Final EA/Draft FONSI DEQ 11-055F
Importance: High

Request: NASA has issued the final environmental assessment (EA) and draft Finding of No Significant Impact (FONSI) on the proposed NASA Wallops Alternative Energy Project (DEQ 11-055F). You are receiving this email because your agency or office were asked to comment on the draft EA reviewed under DEQ 10-037F. Please note that the proposed action has changed; see the email from NASA below.

Please review the documents to determine if you have additional comments or if your concerns were addressed. The review request form and the review under DEQ 10-037F are attached. If you would like to comment, please email me with the comments by April 7, 2011.

Deadline: April 7, 2011

Download the files from the NASA website:

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

Email, Mail or Fax Comments To:

Julia Wellman
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219
Fax: 804-698-4319
E-mail: Julia.Wellman@deq.virginia.gov

When responding, please reference DEQ # 11-055F.

Julia Wellman
Environmental Impact Review Coordinator
Virginia Department of Environmental Quality
PO Box 1105
Richmond, VA 23218
Phone: (804) 698-4326
Fax: (804) 698-4319
NEW E-mail: Julia.Wellman@deq.virginia.gov

From: Bundick, Joshua A. (WFF-2500) [<mailto:joshua.a.bundick@nasa.gov>]
Sent: Thursday, March 24, 2011 12:10 PM
To: Bundick, Joshua A. (WFF-2500)
Subject: NASA WFF Alternative Energy Final EA and Draft FONSI Available
Importance: High

Good Afternoon Everyone,

It is with great pleasure that I announce the availability of the **Final Environmental Assessment (EA) for the Wallops Flight Facility (WFF) Alternative Energy Project.**

The purpose of the Alternative Energy Project is to generate renewable electricity at WFF to assist NASA as an agency in meeting or exceeding the requirements of the 2005 Federal Energy Policy Act and various Executive Orders. The project would also be expected to stabilize WFF's growing utility costs and provide educational outreach regarding renewable energy technologies.

Under the Proposed Action/Preferred Alternative, NASA would install up to an 80-acre system of solar panels at the Main Base that would be capable of generating 10 gigawatt-hours per year of electricity. Additionally, two 2.4 kilowatt residential-scale wind turbines would be installed near the WFF Visitor Center and the entrance gate/security guard station at the Mainland, respectively. At full buildout, the electricity generated annually by this project would equate to approximately 850 average American homes. Given the large capital investment required for a project of this size, the proposal would not be implemented immediately in its entirety; rather it would be built in multiple smaller phases over time.

*****Please note that the Proposed Action differs from what was initially presented in the Draft EA. Due to substantial concerns raised by agencies and organizations regarding potential impacts on birds and bats, the two utility-scale wind turbines on Wallops Island are no longer proposed.*****

NASA has also prepared a **Draft Finding of No Significant Impact (FONSI)** concluding that an Environmental Impact Statement is not necessary for this project. NASA will take no final action prior to 30 days following publication of the Draft FONSI Notice of Availability (NOA) in local newspapers. NOAs were placed in local newspapers this week.

The Draft FONSI and Final EA are available on the internet in Adobe® format at:

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

The Final EA and Draft FONSI are also available for review at the following locations:

Chincoteague Island Library, Chincoteague, VA
Eastern Shore Public Library, Accomac, VA
Northampton Free Library, Nassawadox, VA
NASA WFF Technical Library, Wallops Island, VA

Hard copies of the Final EA and Draft FONSI are available by contacting:

Josh Bundick
Lead, Environmental Planning
NASA Wallops Flight Facility, Code 250.W
Wallops Island, VA 23337
phone 757-824-2319
e-mail Joshua.A.Bundick@nasa.gov

In summary, I would like to thank everyone for their interest and involvement in this project. If you have questions or require any additional information, please don't hesitate to contact me. We look forward to continued coordination with everyone on this and all other Wallops projects.

Best,

Josh Bundick

Joshua A. Bundick
Lead, Environmental Planning
NASA Wallops Flight Facility
Code 250.W
Wallops Island, VA 23337
Phone: (757) 824-2319
Fax: (757) 824-1819
Email: Joshua.A.Bundick@nasa.gov

Wellman, Julia (DEQ)

From: Narasimhan, Kotur (DEQ)
Sent: Friday, April 01, 2011 7:38 AM
To: Wellman, Julia (DEQ)
Subject: RE: Review Request: NASA Wallops Alternative Energy Project, Final EA/Draft FONSI DEQ 11-055F

No additional comment pl. Thanks.

Kotur

From: Wellman, Julia (DEQ)
Sent: Thursday, March 24, 2011 3:53 PM
To: Spears, David (DMME); 'administration@co.accomack.va.us'; 'planning@co.accomack.va.us'; 'anpdc@a-npdc.org'; 'bschwenk@a-npdc.org'; Ewing, Amy (DGIF); Kirchen, Roger (DHR); Narasimhan, Kotur (DEQ); Rhur, Robbie (DCR); Adkins, Chris (VDOT); Badger, Hank (MRC); Forsgren, Diedre (VDH); Thirunagari, Sanjay (DEQ); Keltner, Cindy (DEQ); Harrington, Rusty N. (DOAV); McKay, Laura (DEQ); Wampler, Carol (DEQ); 'Wayne.Smith@scc.virginia.gov'
Cc: Watkinson, Tony (MRC); Matthews, Barry (VDH); Dressler, Shirl (DGIF)
Subject: Review Request: NASA Wallops Alternative Energy Project, Final EA/Draft FONSI DEQ 11-055F
Importance: High

Request: NASA has issued the final environmental assessment (EA) and draft Finding of No Significant Impact (FONSI) on the proposed NASA Wallops Alternative Energy Project (DEQ 11-055F). You are receiving this email because your agency or office were asked to comment on the draft EA reviewed under DEQ 10-037F. Please note that the proposed action has changed; see the email from NASA below.

Please review the documents to determine if you have additional comments or if your concerns were addressed. The review request form and the review under DEQ 10-037F are attached. If you would like to comment, please email me with the comments by April 7, 2011.

Deadline: April 7, 2011

Download the files from the NASA website:

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

Email, Mail or Fax Comments To:

Julia Wellman
Department of Environmental Quality
Office of Environmental Impact Review
629 East Main Street, Sixth Floor
Richmond, VA 23219
Fax: 804-698-4319
E-mail: Julia.Wellman@deq.virginia.gov

When responding, please reference DEQ # 11-055F.



RESPONSES TO COMMENTS



Virginia Department of Game and Inland Fisheries, April 15, 2011

Comment #1: ...the impacts to wildlife of residential-scale wind turbines have not been extensively studied.

Response: NASA acknowledges that the impacts of residential-scale turbines on wildlife have not been widely studied and relied on the best available study data when analyzing potential effects in the Environmental Assessment (EA). To ground-truth the conclusions drawn in the EA, NASA is proposing to conduct at least two years of post construction avian and bat mortality monitoring.

Comment# 2: Due to the occurrence of bald eagles, peregrine falcons, bats, and numerous other species of concern under the Endangered Species Act, the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act, the Virginia Endangered Species Act, and the Virginia Wildlife Action Plan, we encourage NASA to closely coordinate development, operation, and monitoring of this facility with us and with the U.S. Fish and Wildlife Service (USFWS), and to consider implementation of the following mitigatory measures:

- To the greatest extent practicable, install solar panels on existing roof tops, above existing parking areas, and on other previously disturbed areas.

Response: NASA would install solar panels over available parking areas to the extent practicable. As described in the Final EA, the use of rooftops as a potential installation area is not preferred given the potential for interfering with rooftop maintenance and potential conflicts with mission-essential electronics systems.

- Avoid activities that would indirectly attract raptors to turbines through enhancement of cover or food for prey species, such as storing parts, materials, or equipment near turbines; or seeding forbs or maintaining rock piles that may attract rabbits and rodents.

Response: NASA would implement this measure as standard practice.

- Surround each turbine pad with gravel at least 2 inches deep, out to a perimeter of at least 5 feet in diameter. Maintain this perimeter to avoid creating cover or habitat for small mammals.

Response: NASA would implement this measure if the project budget allows; if not implemented, it is not expected that this would provide a substantial risk reduction to avian species.

- If animal burrows or holes are encountered near turbines, fill them as feasible.



Response: NASA would ensure that any burrows or holes identified within the search area during post-construction monitoring are appropriately closed or filled.

- Avoid use of guy wires on residential turbines, and install visual bird flight diverters as appropriate.

Response: The residential-scale turbines would not have guy wires. Flight diverters could be installed if post-construction monitoring indicates their necessity.

- Coordinate with turbine manufacturers to select blades, if available, that would be highly visible to birds. A post-manufacture alternative, if feasible, would be to paint or pattern blades with UV paint to reduce visual "smear" (e.g., thick black stripes on each blade or one solid black blade and two lighter blades).

Response: Given the relatively small size of the turbines and their location in upland areas, NASA does not feel that initial blade painting is necessary. Post-manufacture blade coloring could be implemented if post-construction monitoring indicates its necessity.

- Curtail wind turbines on low-wind-speed nights (< 6.5 mps or < 14 mph), especially during fall migration when bats are most susceptible to turbine-related fatality and when energy generation is minimal.

Response: This recommendation has been found to be effective when necessary on much larger, multiple turbine, utility-scale projects. There is currently no data that suggests curtailment of single residential-scale turbines would be necessary. NASA would only consider curtailment of the residential-scale turbines if this project's post-construction mortality data suggest a direct correlation between bat mortality and low wind-speed nights.

- Coordinate post-construction monitoring of this project with the DGIF and the USFWS.

Response: NASA would coordinate post-construction monitoring with DGIF and USFWS.

U.S. Environmental Protection Agency, Region 3, April 20, 2011

Comment #1: To continue to reduce adverse impacts and support NASA's goal to be a leader in environmental stewardship and accountability, the placement of panels on existing available infrastructure and over available parking area is encouraged. NASA is also encouraged to follow recommended minimization measures for the proposed turbines, such as avoiding the use of guy wires.



Response: NASA would install solar panels over available parking areas to the extent practicable. As described in the Final EA, the use of rooftops as an installation area is not preferred given the probability for interfering with rooftop maintenance and potential conflicts with mission-essential electronics systems. Guy wires would not be used on the proposed residential-scale turbines.

Comment #2: Known future projects included in the cumulative effects analysis greatly differ between the draft and final EA. It is not clear why projects that were previously discussed were no longer included as part of the cumulative impact analysis. A complete list of known or reasonably foreseeable projects is critical to completing a cumulative effects analysis. EPA encourages NASA to include all reasonably foreseeable project in the analysis, maintain consistency between documents, and provide a rationale of why specific projects would not be carried forward.

Response: In the spirit of keeping EAs as brief as practicable, NASA does not find it necessary to list past, present, and future projects/actions in a cumulative effects analysis unless they affect resources in common with the proposed action. As such, the cumulative effects analysis differs between Draft and Final EA because each describes a substantially different proposed action affecting different resources. For example, in the Draft EA, the proposed utility-scale wind turbines would have affected tidal wetlands, which provide ecological services that include fish habitat and shorebird foraging and nesting. Accordingly, projects such as the Shoreline Restoration Program and North Unmanned Aerial System Airstrip were included in the analysis. Each of these would have the potential to contribute synergistic, additive effects on the listed resource areas.

However, the proposed action in the Final EA includes construction of solar panels and two residential-scale turbines on Wallops Main Base and Mainland. Given the substantial change in project scope and location, the above mentioned resources would no longer be affected, and therefore the contributing projects are no longer included. The focus of the cumulative effects analysis is appropriately directed at actions affecting resources within the environments of the Main Base and Mainland, including water quality, upland birds, and terrestrial wildlife.

Comment #3: EPA is supportive of long term bird and bat monitoring from the time of construction until the time of turbine decommissioning, as suggested in comments by U.S. Fish and Wildlife Service (FWS) and the Virginia Department of Game and Inland Fisheries. If NASA chooses to follow the two year monitoring period proposed in the FEA, EPA encourages NASA to meet with resource agencies at that time to present and discuss the monitoring results in order to determine if the appropriate length of monitoring or if additional minimization measures are necessary.



Response: NASA would base the ultimate duration of its post-construction bird and bat mortality study on a review of the data collected over the first two years. Although perhaps desired by reviewing agencies, a lifecycle post-construction monitoring effort may not be warranted given the very small size of the project. If data suggest that mortality is minimal, NASA may choose to reduce or discontinue further study at that time.

All decisions regarding the study would be made in consultation with cognizant resource agencies including the U.S. Fish and Wildlife Service and the Virginia Department of Game and Inland Fisheries.

Comment #4: It is unclear if a specific threshold for the maximum allowable level of take has been determined. This value would serve as an important signal that a stoppage or restriction of use may be necessary. It is also unclear what threshold is being used to trigger the implementation of adaptive management strategies. NASA should work with resource agencies to determine what these appropriate thresholds should be. In the event that high rates of bird and bat mortality are encountered or unanticipated impacts to rare, threatened and/or endangered species occur, NASA should seek consultation with the appropriate local, state, and federal resource agencies.

Response: A Specific mortality threshold was not established in the EA as it would be highly species-specific and could change over time based upon the most current population trends. As discussed in the Monitoring Plan in the Final EA, any larger than expected fatality events (i.e., greater than observed at comparable residential-scale turbine projects) or evidence of effects on special-status species would be promptly reported to USFWS and VDGIF to identify potential causal relationships and develop an appropriate plan forward.

It should be noted that the rigor of the proposed monitoring plan for the two residential-scale turbines parallels that of a utility-scale project, and accordingly would readily identify any avian or bat mortality such that it could be effectively analyzed and mitigated without a risk of biologically significant effects.

*Virginia Department of Environmental Quality, Office of Environmental Impact Review,
April 21, 2011*

***Note that this is a second consolidated state agency review provided for this project; the first was for the Draft EA. As such, many comments are duplicates of what was previously submitted or re-iteration of what is contained in the Final EA. To eliminate redundancy, the below list of comments and responses contains only those that are new or substantially different from what was previously submitted.*

Comment #1: According to the information currently in the Virginia Department of Conservation and Recreation's (DCR) files, Little Mosquito Creek Conservation Site is within the vicinity of the Wallops Flight Facility Visitor Center. 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 to 5 with 1 being most significant. Little Mosquito Creek Conservation Site has been given a biodiversity significance ranking of B3, which represents a site of high significance. The natural heritage resource of concern at the Little Mosquito Creek is the Bald eagle.

Response: As the proposed residential-scale turbine would be located in an area regularly disturbed by human activities that is more than one mile from the nearest known Bald eagle nest site, any resulting effects on eagle nesting would be negligible.

Although eagles forage over marshes and fields, all of which are adjacent to the proposed residential-scale turbine site, the fact that the turbine's rotor-swept area would be very small and that there are regular human-induced disturbances at the site, including aircraft overflight, mowing, pedestrian visitors, vehicle ingress/egress, and Route 175 traffic, the resulting risk of turbine collision would be low. Also, during its post-construction field monitoring efforts, NASA would ensure that the potential for prey species to occur adjacent to the turbines is low (i.e., filling in any observed burrows or holes), further reducing risk.

Comment #2: According to information currently in DCR's files, Wallops Island Causeway Marshes Conservation Site is in the Entrance Gate vicinity. Wallops Island Causeway Marshes conservation Site has been given a biodiversity significance ranking of B4, which represents a site of moderate significance. The natural heritage resources of concern are the saltmarsh sharp-tailed sparrow and the northern harrier.

Response: In the vicinity of Wallops Island, the saltmarsh sharp-tailed sparrow would be found in salt marshes and meadows, feeding almost exclusively on insects, spiders and small invertebrates during the breeding season. They feed on the ground in dense grass, at the edges of pools and pannes, and in patches of wrack.¹ Given that the proposed residential-scale turbine would be located in a regularly disturbed area at least 500 feet from the nearest suitable nesting or foraging habitat, no impacts would be expected.

¹ Greenlaw, J.S. and J.D. Rising. 1994. Sharp-tailed sparrow, *Ammodramus caudacutus*. In *The Birds of North America*, No. 112 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, D.C.



Regarding Northern harriers, as the commenter mentions, the species rarely breeds as far south as Virginia; therefore any effects on nesting would be highly unlikely. Although Northern harriers forage over marshes, fields, bushes, and edges that contain low vegetation,² all of which are adjacent to the proposed residential-scale turbine site, the fact that the turbine's rotor-swept area would be very small and that there are regular human-induced disturbances at the site, including mowing and vehicle ingress/egress, the resulting risk of turbine collision would be low. Also, during its post-construction field monitoring efforts, NASA would ensure that the potential for prey species to occur adjacent to the turbines is low (i.e., filling in any observed burrows or holes), further reducing risk.

Comment #3: The proposed residential turbine project areas are located within Zone 3 on the Coastal Avian Protection Zones map (attached map). Zone 3 is a Barrier island/seaside lagoon system, including a 100-meter (328-foot) offshore buffer. In this zone, the relevant avian species and other avian mitigation factors are threatened and endangered species (breeding and migratory Piping Plovers, Wilson's Plovers, Gull-billed Terns, Peregrine falcons and Bald Eagles) and hemispherically important staging and wintering areas for shorebirds, seabirds and waterfowl.

Response: NASA is aware of the significant avian resources adjacent to the proposed project area and modified its original proposed action as a result. Given the substantial number of at-risk avian species that forage or nest within the barrier island/seaside lagoon complex, NASA has proposed the two residential-scale turbines in upland areas subject to regular human-induced disturbances. The Final EA discusses the avian resources and any expected effects that could result from implementing the project. Additionally, the proposed post-construction mortality survey would ground truth the EA's conclusions and would assist in future decision-making regarding mitigation or monitoring.

Comment #4: DCR strongly supports the use of alternative energy sources in the Commonwealth. However since the project areas are within an area of global ecological significance according to the Coastal Avian Protection Zones map, if the No Build Alternative is not feasible, DCR supports the proposed action, which is the construction of two smaller residential scale turbines (one placed at the entrance gate and security guard station at the mainland and one near the visitor center) and solar panels in open grassy areas or over parking lots at Wallops Main Base. Due to the smaller turbines and the ability of the hybrid system to produce energy utilizing the solar panels instead of the turbines during low wind speeds potentially reducing bird/bat mortality, this build alternative appears to be the least impactful to documented natural heritage resources. DCR also supports the proposed post-construction

² Macwhirter, R. Bruce and Keith L. Bildstein. 1996. Northern Harrier (*Circus cyaneus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/210doi:10.2173/bna.210>



monitoring for bird and bat fatalities and adaptive management for any potential mitigation strategies.

Response: The No Build Alternative does not meet the purpose and need of the project, and is therefore not proposed. It should be noted that during times of low wind, the turbines would still generate electricity if wind speeds are above the units' cut-in speed. Only when the wind speeds are below the rated cut-in speed would the solar panels be the sole source of electrical generation.

Comment #5: DEQ's renewable energy program states that it appears that requirements pursuant to DEQ's final wind permit-by-rule (PBR) regulation (9VAC15-40-130A) would not be applicable to the proposed action. It appears that the proposed solar project would involve a rated capacity of 8 MW and approximately 15 acres, and these characteristics might be subject to the requirements of DEQ's upcoming solar PBR. DEQ has developed a proposed solar PBR regulation, which has been approved by DEQ's director and is currently undergoing Executive Review. Until this proposed regulation becomes final and effective, authority over solar projects remains with the State Corporation Commission (SCC). After DEQ's solar PBR becomes final, there will likely be requirements for projects such as the one proposed for the NASA site. As provided in the currently-proposed regulation, solar projects with a rated capacity greater than 5 MW and a disturbance zone greater than 10 acres will be required to meet the solar PBR requirements (9VAC15-60), provided that the projects do not otherwise meet the criteria set forth in 9VAC15-60-130. Section 9VAC15-60-130 provides, among other things, that solar projects mounted over existing parking lots are not required to submit any notification or certification to DEQ.

Coordinate with the SCC if the project is implemented prior to the effective date of DEQ's solar PBR and coordinate with DEQ after DEQ's solar PBR becomes effective, as necessary.

Response: Prior to implementing the solar portion of the proposed action, NASA would consult with SCC or DEQ as appropriate to determine regulatory requirements.