

Appendix D
Section 106 Consultation

National Aeronautics and
Space Administration

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



Reply to Attn of: 228

December 10, 2009

Office of Review and Compliance
Attn: Mr. Ronald Grayson
Archaeologist
Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

Subject: Section 106 Determination of No Adverse Affect for the Proposed Alternative Energy Program at NASA Wallops Flight Facility, Wallops Island, VA

Executive Order (EO) 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (effective January 24, 2007), instructs Federal agencies to conduct their environmental, transportation, and energy-related activities in support of their respective missions in an environmentally, economically, and fiscally sound, integrated, continuously improving, efficient, and sustainable manner. EO 13154, *Federal Leadership in Environmental, Energy, and Economic Performance* (effective October 5, 2009), directs Federal agencies to increase their use of renewable energy and to implement renewable energy generation projects on agency property. The Federal Energy Policy Act (EPACT, effective August 8, 2005) requires Federal agencies to lower electricity draw and costs, and to increase the use of renewable resources by 3 percent between 2007 and 2009, 5 percent between 2010 and 2012, and by 7.5 percent for 2013 and beyond.

To this end, the National Aeronautics and Space Administration (NASA) is exploring the feasibility and potential environmental impacts of two alternative energy sources—wind turbines and solar panels—at its Wallops Flight Facility (WFF). The implementation of these renewable energy sources at WFF would meet the facility's need to reduce greenhouse gas emissions by reducing the use of fossil fuels to generate electricity, while also reducing WFF's annual operating costs.

WFF is currently evaluating three alternatives for the proposed undertaking:

1. Alternative One, the construction of two wind turbines on Wallops Island;
2. Alternative Two, the construction of one wind turbine on Wallops Island and installation of up to 19,000 solar panels on Wallops Main Base; and

3. Alternative Three, the installation of up to 38,000 solar panels on Wallops Main Base.

NASA has determined that these actions constitute an undertaking under Section 106 of the National Historic Preservation Act (NHPA) as amended in 1980 and 1992, and the Advisory Council on Historic Preservation's regulations (36 CFR Part 800), as revised in 1999 and 2004. Accordingly, this letter represents NASA's formal initiation of the Section 106 consultation process for all three alternatives of the proposed project currently under consideration.

PROPOSED UNDERTAKING

The attached report, *Section 106 Assessment of Alternative Energy Project, Wallops Flight Facility, Wallops Island, Virginia* (Section 106 Report), describes the proposed undertaking in detail. Brief descriptions of the three alternatives under consideration are provided below. Please note, that as of the writing of this letter, the details of the proposed project have changed slightly from those analyzed in the study. Initially, WFF was considering installing wind turbines rated at 1.5 megawatt (MW) and is currently investigating 2 MW wind turbines. NASA contends that the slight differences between the two turbines (e.g., 2 meter [7 foot] difference in height]) would have no additional affects on historic resources beyond those discussed in the attached study. Similarly, the corresponding increase in number and acreage of solar panel proposed would have no additional affects on historic resources beyond those discussed in the attached study.

Alternative One: Two Wind Turbines

Alternative One would consist of the construction of two 2 MW wind turbines on Wallops Island west of the U.S. Navy V-010/V-020 complex. The wind turbines would be constructed with a set-back distance of 150 meters (500 feet) from existing towers and buildings. A corridor 9 meters (30 feet) wide would be constructed for access roads to each wind turbine, including approximately 5 meters (16 feet) for a permanent gravel road surface and an additional 2.5 meters (8 feet) on each side for road shoulders. Regularly spaced culverts would be installed under the new roadway to maintain the existing tidal flow to the maximum extent possible. Underground cables would also be installed beneath the new roadway.

Previously disturbed areas, including the cleared area east of the U.S. Navy V-010/V-020 complex, would be used for staging equipment and material and for construction vehicle parking. The construction period for two wind turbines is estimated to be approximately 6 months. The workspace radius required around each turbine tower during construction activities would be approximately 45 meters (150 feet).

Power collection lines would be built to interconnect each wind turbine to the existing Wallops Island 12.47 kilovolt electrical distribution system. These power lines would be buried within or adjacent to the wind turbine access road corridors and then along existing roadways to an established interconnection point. NASA would utilize data currently collected at various locations/towers on Wallops Island to monitor wind speed and direction rather than build a new meteorological tower specifically for the proposed action. Operations and maintenance staff and

equipment would be housed in existing NASA facilities, negating the need to construct any new buildings for operations and maintenance.

Alternative Two: One Wind Turbine and Solar Panels

Alternative Two would consist of the construction of one 2 MW wind turbine on Wallops Island west of the U.S. Navy V-010/V-020 complex in the same location as the southern wind turbine in Alternative One. As this alternative involves the construction of only the southern wind turbine, the footprint, access infrastructure, work space, and staging areas would be smaller than under Alternative One and the construction period would be shorter.

In addition to the single wind turbine, NASA would install a system of solar panels at Wallops Main Base. A maximum of 19,000, 1.4 square-meter (15 square-foot) solar panels, occupying approximately 3 hectares (7.5 acres) of land, would be needed to meet this power generating capability.

The exact location and configuration of the solar panels has not yet been determined. NASA is currently considering the placement of the solar panels in open areas where there are no extant built resources and outside areas modeled as having an increased sensitivity for archaeological resources, on building rooftops, or a combination of the two.

Alternative Three: Solar Panels Only

Alternative Three would consist of installing a system of solar panels at Wallops Main Base that would be capable of generating approximately 10 GWh/yr of power, which is the estimated equivalent of two 2 MW wind turbines. Approximately 38,000, 1.4 square-meter (15 square-foot) solar panels, occupying approximately 6 hectares (15 acres) of land, would be needed to meet this power generating capability.

As with Alternative Two, the exact location and configuration of the solar panels has not yet been determined. NASA is currently considering the placement of the solar panels in open areas where there are no extant built resources and outside areas modeled as having an increased sensitivity for archaeological resources, on building rooftops, or a combination of the two.

PREVIOUS SURVEYS AND SECTION 106 CONSULTATIONS

In November 2003, URS Group, Inc. (URS) and EG&G Technical Services, Inc. (EG&G) prepared a *Cultural Resources Assessment of Wallops Flight Facility, Accomack County, Virginia* that examined each of the three land areas of the facility within WFF's property boundaries: Wallops Main Base, Wallops Mainland, and Wallops Island. This report established a predictive model for archaeological potential for the entire WFF property. VDHR concurred with the findings of this report in a letter dated December 3, 2003.

In December 2004, URS and EG&G prepared a *Historic Resources Survey and Eligibility Report for Wallops Flight Facility* that included an evaluation of buildings and structures at WFF built

prior to 1956 for their eligibility for listing in the National Register of Historic Places (NRHP). Two resources—the Wallops Coast Guard Lifesaving Station (VDHR #001-0027-0100; WFF# V-065) and its associated Coast Guard Observation Tower (001-0027-0101; WFF# V-070)—were found to be eligible for listing in the NRHP and Virginia Landmarks Register. The other surveyed resources were determined not to be NRHP eligible because they lacked the historical significance or integrity necessary to convey significance. In a letter dated November 4, 2004, the VDHR concurred with the findings and determinations in the *Historic Resources Survey and Eligibility Report*.

DETERMINATION OF EFFECTS

As part of its efforts to evaluate the potential environmental impacts of the proposed undertaking, NASA is preparing an Environmental Assessment (EA) in compliance with the National Environmental Policy Act of 1969 (NEPA). Because NASA is still in the planning stages of the proposed undertaking and is evaluating several alternatives under NEPA, not all aspects of the project are known at this time. In particular, the specific location of the solar panels has not been determined.

NASA retained URS to prepare the EA and the enclosed Section 106 Report. This study found that the construction of wind turbines on Wallops Island under Alternatives One and Two is not likely to have an adverse effect on aboveground historic properties within the 3.2-kilometer (2-mile) radius Area of Potential Effects (APE) or to archaeological resources within the area of ground disturbance associated with the undertaking.

If solar panels are employed under Alternatives Two and Three, NASA would utilize the archaeological sensitivity model included in the *Cultural Resources Assessment of NASA Wallops Flight Facility, Accomack County, Virginia* (URS/EG&G 2003) to ensure that solar panels would not be placed in areas of moderate or high sensitivity for archaeological resources. Additionally, NASA would use the *Historic Resources Survey and Eligibility Report for Wallops Flight Facility, Accomack County, Virginia* (URS/EG&G 2004) to ensure that solar panels would be placed only on or adjacent to buildings or structures that were determined ineligible for listing in the National Register of Historic Places (NRHP). Given these conditions, the study found that the installation of solar panels is not likely to have an adverse effect on historic properties at WFF.

As indicated above, NASA does not at this time intend to place solar panels on or adjacent to buildings or structures that have not been formally evaluated and determined to be ineligible for listing in the NRHP; therefore, NASA has determined that the undertaking, including all three alternatives, will have no adverse effect on historic properties at Wallops Main Base, the Mainland, or Wallops Island. If, as the scope of work for the solar panel alternatives develops, it becomes evident that solar panels will be installed on or adjacent to buildings or structures that have not been formally evaluated and determined ineligible for listing in the NRHP, NASA will reinitiate the Section 106 process and undertake additional formal evaluation, if warranted, and assessment of effects.

Additionally, NASA has determined that the undertaking will have no adverse effect on historic properties outside of WFF, should they be present, given the nature of the existing viewshed to WFF. The majority of the facilities at WFF exhibit rooftop radar antennas, beacons, heating, ventilation and air conditioning (HVAC) systems, cooling towers, and other industrial equipment, and the presence at WFF of numerous towers, including elevated water storage tanks, boresight, meteorological, and radio equipment platforms.

Accordingly, NASA has determined that the proposed Alternative Energy Program, including all three alternatives, will have no adverse effect on historic properties. NASA requests that the Virginia Department of Historic Resources review the attached report and concur with this finding.

If you have any questions or comments regarding this portion of the project, please contact me, Randall Stanley, at (757) 824-1309 or Shari Silbert at (757) 824-2327.

Sincerely,



Randall M. Stanley
Facility Historic Preservation Officer

Enclosures:

Exhibit 1: Section 106 Assessment of Alternative Energy Project, Wallops Flight Facility,
Wallops Island, Virginia

Exhibit 2: VDHR Project Review Application Form

cc:

200/Ms. C. Massey

228/Mr. G. Lilly

250/Ms. C. Turner



COMMONWEALTH of VIRGINIA

L. Preston Bryant, Jr.
Secretary of Natural Resources

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

Kathleen S. Kilpatrick
Director

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January 25, 2010

Mr. Randall M. Stanley
Facility Historic Preservation Officer
NASA / WFF FMB, Code 228
Building N-161, Room 127
Wallops Island, VA 23337

Re: Proposed Alternative Energy Program
NASA Wallops Flight Facility, Wallops Island, Accomack County
DHR File #: 2009-1883
Date Received: December 14, 2009

Dear Mr. Stanley:

We have received your request for our review and comment regarding the above referenced project. Unfortunately, at this time we are unable to make an informed decision concerning the effects of the proposed undertaking. We do not have the enough information needed to adequately evaluate the effects of the undertaking, specifically the lack of exact location and configuration of alternatives two and three.

If possible, in the future consultation please include additional photo simulations similar to Figure 5 but to scale to assist in our review of this undertaking.

Additionally, please seek comments of the National Park Service, specifically the Assateague Island National Seashore.

We will review the review the project again when an alternative is determined. If you have any questions about our comments, please contact me at: ron.grayson@dhr.virginia.gov or (804) 367-2323, Ext. 105.

Sincerely,

Ronald Grayson, RPA, Archaeologist
Office of Review and Compliance

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National Aeronautics and
Space Administration

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



Reply to Attn of: 228

March 1, 2010

Office of Review and Compliance
Attn: Mr. Ronald Grayson
Archaeologist
Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

Subject: Section 106 Determination and Environmental Assessment for the Proposed Alternative Energy Program at NASA Wallops Flight Facility, Wallops Island, VA
DHR File#: 2009-1883

Ref: Department of Historic Resources letter R. Grayson to R. Stanley dtd. 12/14/09

Thank you for your response to NASA's December 2009, submittal, *Section 106 Assessment of Alternative Energy Project, Wallops Flight Facility, Wallops Island, Virginia* (Section 106 Report). NASA offers the following responses to your comments.

In accordance with the National Environmental Policy Act of 1969 (NEPA), as amended, and Section 106 of the National Historic Preservation Act (NHPA), NASA has prepared a Draft Environmental Assessment (DEA) for the proposed Wallops Flight Facility (WFF) Alternative Energy Project. Under the Proposed Action, NASA's preferred alternative, NASA would construct two 2.0 megawatt (MW) "utility-scale" wind turbines on Wallops Island that would be capable of generating approximately 10 gigawatt-hours of electricity per year, and up to five 2.4 kilowatt (kW) "residential-scale" wind turbines on the Main Base and Mainland. The utility-scale wind turbines would be located on Wallops Island west of the U.S. Navy V-10/V-20 complex (See DEA Figure 6). One of the 2.4 kW wind turbines would be installed near the WFF Visitor Center and a second one would be installed near the security guard station at the Mainland. The locations of the remaining three residential-scale wind turbines are unknown at this time, but would be placed within the areas that NASA has identified as potential suitable locations at WFF (See DEA Figure 4).

New access roads would be constructed to each utility-scale wind turbine. Underground power collection lines would be built to interconnect each wind turbine to the existing Wallops Island electrical distribution system. These power lines would be installed by directional drilling, a trenchless method. Previously disturbed areas, including the cleared area east of the U.S. Navy V-10/V-20 complex, would be used for staging of equipment and materials for the utility-scale turbines, and for construction vehicle parking. The construction period for the two utility-scale

wind turbines would be approximately 6 months. The residential-scale wind turbines would be constructed with a setback distance of 30 meters (100 feet) from existing towers, buildings, and trees. No transformers or interconnection switchgear would be needed.

Because specific guidelines for Section 106 review of wind turbine projects have not yet been developed in Virginia, the VDHR Section 106 guidance on cell towers was used to determine the Area of Potential Effect (APE). This guidance recommends an APE for cell towers of 61 meters (200 feet) or more in height that extends 3.2 kilometers (2 miles) from the cell tower to account primarily for indirect visual effects. Because wind turbines are similar to cell towers in terms of their potential for visual impact, this 3.2-kilometer (2-mile) APE was used to determine effects on historic properties for the two utility-scale turbines. No identified historic properties within the APE would be directly affected by construction and operation of the two utility-scale turbines. The utility-scale turbines would have indirect visual effects on the two NRHP-eligible resources identified within the APE—the Wallops Coast Guard Lifesaving Station and its associated Coast Guard Observation Tower. The utility-scale turbines are anticipated to have no adverse effect on historic properties outside of WFF, should they be present, given the nature of the existing viewshed to WFF. The majority of the facilities at WFF exhibit rooftop radar antennas, beacons, heating, ventilation and air conditioning systems, cooling towers, and other industrial equipment, and the presence at WFF of numerous towers, including elevated water storage tanks, boresight, meteorological, and radio equipment platforms.

There would be no demolition or alteration of buildings or structures for construction of the residential-scale wind turbines; therefore, the residential-scale wind turbines are not expected to have direct adverse effect to historic properties. Given the nature of the existing viewshed toward WFF, residential-scale turbines are also not likely to have an adverse effect on the setting or feeling of any yet-to-be identified NRHP-eligible resources, if present, within or outside of the boundaries of WFF. As NASA pursues installing the three additional residential-scale wind turbines (up to a total of five) and as exact locations are identified, WFF will consult with VDHR on potential effects to historic resources within and outside of WFF boundaries.

Under separate cover, NASA is seeking review and comment of the DEA from the National Park Service, Assateague Island National Seashore. NASA requests that VDHR review the attached DEA and provide comments within 30 days of receipt of this correspondence.

If you have any questions or comments regarding this portion of the project, please contact me, Randall Stanley, at (757) 824-1309 or Shari Silbert at (757) 824-2327.

Sincerely,



Randall M. Stanley
Facility Historic Preservation Officer



COMMONWEALTH of VIRGINIA

L. Preston Bryant, Jr.
Secretary of Natural Resources

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March 31, 2010

Mr. Randall M. Stanley
Facility Historic Preservation Officer
NASA / WFF FMB, Code 228
Building N-161, Room 127
Wallops Island, VA 23337

Re: Proposed Alternative Energy Program, Draft EA
NASA Wallops Flight Facility, Wallops Island, Accomack County
DHR File #: 2009-1883
Date Received: March 2, 2010

Dear Mr. Stanley:

We have received information regarding our review of the above referenced undertaking, including a copy of the Draft *Environmental Assessment Wallops Flight Facility Alternative Energy Project* (March 2010). Unfortunately, at this time we are unable to make an informed decision concerning all effects of the proposed undertaking.

Based upon the information provided, we concur with your determination that the proposed utility-scale wind turbines will have no direct effects to historic properties. We also concur with your determination that the proposed utility-scale wind turbines will have an indirect effect on the NRHP-eligible Coast Guard Life Saving Station and associated Observation Tower. We request a detailed description of what alternatives NASA has explored to avoid and/or minimize the effects to above ground historic properties.

The APE for the proposed residential-scale wind turbines has not been identified, we recommend continued consultation with our office to fully identify and assess the effects of the undertaking.

We also request a list of Native American tribes, federally and state recognized, that have an ancestral interest in Virginia that you contacted in this consultation. We look forward to continued consultation with you on this project. If you have any questions about our comments, please contact me at: ron.grayson@dhr.virginia.gov or (804) 367-2323, Ext. 105.

Sincerely,

Ronald Grayson, RPA, Archaeologist
Office of Review and Compliance

c.c. Julia H. Wellman, Virginia Department of Environmental Quality

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



Reply to Attn of: 228

April
~~March~~ 16, 2010

Office of Review and Compliance
Attn: Mr. Ronald Grayson
Archaeologist
Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

Subject: Section 106 Determination and Environmental Assessment for the Proposed Alternative Energy Project at NASA Wallops Flight Facility, Wallops Island, VA
DHR File#: 2009-1883

Ref: VDRH ltr. R. Grayson to R. Stanley dtd. 3/31/10

Thank you for your letter dated March 31, 2010 commenting on NASA's proposal for the Alternative Energy Project at Wallops Flight Facility, Wallops Island, Virginia. NASA would like to offer the following responses to your comments.

Please see the attached Section 106 Assessment of the Alternative Energy Project (originally sent December, 2009) that addresses your request for a detailed description of alternatives NASA explored to avoid and/or minimize the effects to above ground historic properties.

As requested, please see the enclosed maps which designate the Areas of Potential Effect (APE) for each of the two residential-scale wind turbines that are proposed under this project. The APE for each of the two residential-scale turbines includes only the immediate ground that would be disturbed in order to install the foundation for the pole and the access road to each site. The other map has a 2-mile circle around each site that represents the potential viewshed to the turbines and the historic properties that fall within each. The two residential-scale wind turbines would be considerably smaller than the utility-scale wind turbines. Each of these two smaller wind turbines would be 60 feet high to the center hub and have a blade diameter of 12 feet. Due to the small size of these wind turbines, and the fact that the closest historic structure outside of NASA's property boundary (Arbuckle Place) is approximately 1.2 miles from the proposed Island Gate wind turbine, NASA does not anticipate any direct or indirect affects to historic properties. Currently, NASA has not identified funding sources or locations for the three additional residential-scale wind turbines which could be installed as part of this project. As these details become defined, NASA would continue Section 106 consultation proceedings with VDHR.

According to the Federal Bureau of Indian Affairs, there are no federally recognized tribes registered in the state of Virginia (source: www.bia.gov); and according to the Virginia Council on Indians, there are no state recognized tribes registered in Accomack County, Virginia (source: <http://indians.vipnet.org/tribes.cfm>). Therefore, no consultations with tribes were initiated as part of this undertaking.

If you have any questions of comments regarding this portion of the project, please contact me, Randall Stanley, at (757) 824-1309 or Shari Silbert at (757) 824-2327.

Sincerely,

A handwritten signature in black ink that reads "Randall M. Stanley". The signature is written in a cursive style with a large, prominent initial 'R'.

Randall M. Stanley
Facility Historic Preservation Officer

2 Enclosures

Exhibit 1: Section 106 Assessment of Alternative Energy Project, Wallops Flight Facility, Wallops Island, Virginia

Exhibit 2: Area of Potential Effects Maps

cc:

200/Ms. C. Massey

228/Mr. G. Lilly

250/Ms. C. Turner

From: Stanley, Randall M. (WFF-2280)
Sent: Friday, April 16, 2010 12:47 PM
To: Ron.Grayson@dhr.virginia.gov
Cc: Silbert, Shari A. (WFF-200.C)[EG&G, Inc. (WICC)]; Bundick, Joshua A. (WFF-2500); Smith, Philip H. (WFF-2280)
Subject: Alternative Energy Project, NASA, Wallops Flight Facility

Ron,

A couple of things that we realized we forgot to address in the letter. It is apparent when looking at the map of the installation of the residential-scale wind turbine at the Visitor's Center site, that we intend to install the turbine in an area of potentially high cultural sensitivity. The foundations for these turbines are no more than 24" in diameter to support the 4" diameter pole. We would hand dig within this area in the usual manner to rule out the possibility that anything of archeological or historic significance exists and proceed only after this possibility is ruled out.

The other thing that we forgot to mention is that the access roads will be minimum width (no more than 8 feet wide) and will require no ground disturbance to install. We intend to spread a gravel base or crusher run over existing grade to form these access roads.

Sorry to have forgotten to mention these two pieces of information.

Randy Stanley

Randall M. Stanley
NASA / WFF FMB, Code 228
Building N-161, Room 127
Wallops Island, VA 23337

Direct: 757-824-1309
Fax: 757-824-1831



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May 12, 2010

Mr. Randall M. Stanley
Facility Historic Preservation Officer
NASA / WFF FMB, Code 228
Building N-161, Room 127
Wallops Island, VA 23337

Re: Proposed Alternative Energy Program
NASA Wallops Flight Facility, Wallops Island, Accomack County
DHR File #: 2009-1883
Additional Information Received: April 19, 2010

Dear Mr. Stanley:

We have received your request for our review and comment regarding the above referenced project. Unfortunately, at this time we are unable to make an informed decision concerning the effects of the proposed undertaking. We do not have the enough information needed to adequately evaluate the effects of the undertaking.

We respectfully request you contact the Virginia Council on Indians (VCI) directly to better identify Native American Tribes that have and ancestral interest in the area. The contact person for the VCI is Ms. Deanna Beacham, Deanna.Beacham@governor.virginia.gov.

We also request that a professional archaeologist monitor the hand digging in the culturally sensitive area. The archaeologist should meet, at a minimum, the *Secretary of the Interior's Professional Qualifications Standards* (48 FR 44738-9, September 29, 1983) in archaeology.

We look forward to continue consultation regarding the three (3) additional residential-scale turbines once the proposed locations have been determined.

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

Sincerely,

Ronald Grayson, RPA, Archaeologist
Office of Review and Compliance

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From: Stanley, Randall M. (WFF-2280)
Sent: Wednesday, May 26, 2010 11:28 AM
To: Deanna.Beacham@governor.virginia.gov
Cc: Ron.Grayson@dhr.virginia.gov; Silbert, Shari A. (WFF-200.C)[EG&G, Inc. (WICC)]; Suzanne_Richert@URSCorp.com; Bundick, Joshua A. (WFF-2500)
Subject: Request for Native American Tribe Information
Attachments: Regional visitor map.pdf

Ms. Beacham,

NASA Wallops Flight Facility, located in Accomack County, Virginia, is currently in consultation with the Virginia Department of Historic Resources (VDHR) regarding several proposed projects. According to the website for the Federal Bureau of Indian Affairs, there are no federally recognized tribes registered in the state of Virginia; and according to the website for the Virginia Council on Indians (VCI), there are no state-recognized tribes registered in Accomack County. However, in a letter dated May 12, 2010, VDHR requested that NASA contact the VCI directly regarding Native American Tribes that may have an ancestral interest in the area. Can you please provide any information, including contacts, that you may have regarding Native American Tribes that may have an ancestral interest in the Eastern Shore of Virginia, specifically, the Wallops Flight Facility and the surrounding area. Attached is a location map for Wallops Flight Facility. Please let us know if you have any questions.

Thank you.

Randall M. Stanley
NASA / WFF FMB, Code 228
Building N-161, Room 127
Wallops Island, VA 23337

Direct: 757-824-1309
Fax: 757-824-1831

From: Beacham, Deanna (GOV) [Deanna.Beacham@governor.virginia.gov]
Sent: Thursday, May 27, 2010 10:22 AM
To: Stanley, Randall M. (WFF-2280)
Cc: Grayson, Ron (DHR); Silbert, Shari A. (WFF-200.C)[EG&G, Inc. (WICC)];
Suzanne_Richert@URSCorp.com; Bundick, Joshua A. (WFF-2500)
Subject: RE: Request for Native American Tribe Information

Greetings Mr. Stanley,

On behalf of all the Virginia Algonquian descendent community tribes in Virginia, the Virginia Council on Indians takes an interest in the Section 106 process for all ground-disturbing projects, and requests to be a consulting party on such projects. Whenever a specific tribe or tribes should be contacted as well, we will let you know. Your contact and signing party for Section 106 will be me until you are notified otherwise.

Regarding future projects, at this time no concerns have been raised by any Virginia tribe regarding viewshed disturbance by wind turbines, either offshore or on land. If this situation changes, we will inform you also.

Sincerely,

Deanna Beacham
Virginia Council on Indians
Office of the Governor
P. O. Box 1475
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804.225.2084
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<http://indians.vipnet.org>

National Aeronautics and
Space Administration

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



Reply to Attn of: 228

May 29, 2010

Deanna Beacham
Virginia Council on Indians
Office of the Governor
P. O. Box 1475
Richmond, VA 23218

Subject: Virginia Native American Tribal Consultation and Environmental Assessment for the Proposed Alternative Energy Program at NASA Wallops Flight Facility, Wallops Island, VA

Executive Order (EO) 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (effective January 24, 2007), instructs Federal agencies to conduct their environmental, transportation, and energy-related activities in support of their respective missions in an environmentally, economically, and fiscally sound, integrated, continuously improving, efficient, and sustainable manner. EO 13154, *Federal Leadership in Environmental, Energy, and Economic Performance* (effective October 5, 2009), directs Federal agencies to increase their use of renewable energy and to implement renewable energy generation projects on agency property. The Federal Energy Policy Act (EPACT, effective August 8, 2005) requires Federal agencies to lower electricity draw and costs, and to increase the use of renewable resources by 3 percent between 2007 and 2009, 5 percent between 2010 and 2012, and by 7.5 percent for 2013 and beyond.

To this end, the National Aeronautics and Space Administration (NASA) is exploring the feasibility and potential environmental impacts of two alternative energy sources—wind turbines and solar panels—at its Wallops Flight Facility (WFF). The implementation of these renewable energy sources at WFF would meet the facility's need to reduce greenhouse gas emissions by reducing the use of fossil fuels to generate electricity, while also reducing WFF's annual operating costs.

WFF is currently evaluating three alternatives for the proposed undertaking:

1. Proposed Action, the construction of two utility scale wind turbines on Wallops Island and up to five residential scale wind turbines on the Main Base and Wallops Mainland;

2. Alternative One, the construction of one utility scale wind turbine on Wallops Island and up to five residential scale wind turbines on the Main Base and Wallops Mainland, and installation of up to 19,000 solar panels on Wallops Main Base; and
3. Alternative Two, the installation of up to 38,000 solar panels on Wallops Main Base and the construction of up to five residential scale wind turbines on the Main Base and Wallops Mainland.

NASA has determined that these actions constitute an undertaking under Section 106 of the National Historic Preservation Act (NHPA) as amended in 1980 and 1992, and the Advisory Council on Historic Preservation's regulations (36 CFR Part 800), as revised in 1999 and 2004.

PROPOSED UNDERTAKING

The attached *Draft Environmental Assessment for the Wallops Flight Facility Alternative Energy Project* (DEA) describes the proposed undertaking in detail. Brief descriptions of the three alternatives under consideration are provided below. Please note, that as of the writing of this letter, the details of the proposed project have changed slightly from those analyzed in the DEA. Initially, locations had only been determined for two of the five proposed 2.4 kW residential-scale wind turbines. Since then, all five locations have been proposed as follows:

- WFF Visitors Center
- Entrance Gate at WFF Mainland
- Entrance Gate at WFF Main Base
- WFF Announcement Sign along State Route 175
- WFF Main Base Campus

Proposed Action

Under the Proposed Action, NASA's preferred alternative, NASA would construct two 2.0-megawatt (MW) "utility-scale" wind turbines on Wallops Island that would be capable of generating approximately 10 GWh of electricity per year, and up to five 2.4-kilowatt (kW) "residential-scale" wind turbines at the Main Base and Mainland. The utility-scale wind turbines would be located on Wallops Island west of the U.S. Navy V-10/V-20 complex. One 2.4 kW residential scale wind turbine would be installed near the WFF Visitor Center, one near the Wallops Mainland entry gate, one near the Main Base entry gate, one near the WFF announcement sign on Virginia Route 175, and one near the Main Base campus area. The residential-scale turbines would not contribute much to the percent of energy generated from renewable sources at WFF because of their small power output; their primary purpose would be to provide outreach and education to WFF employees and the public about wind energy.

New access roads would be constructed to each utility-scale wind turbine. Underground power collection lines would be built to interconnect each wind turbine to the existing Wallops Island electrical distribution system. These power lines would be installed by directional drilling, a trenchless method, to avoid affecting wetlands. Previously disturbed areas, including the cleared area east of the U.S. Navy V-10/V-20 complex, would be used for staging of equipment and

materials for the utility-scale turbines, and for construction vehicle parking. The construction period for the two utility-scale wind turbines would be approximately 6 months.

The residential-scale wind turbines would be constructed with a setback distance of 30 meters (100 feet) from existing towers, buildings, and trees. No transformers or interconnection switchgear would be needed.

Alternative One

Under Alternative One, NASA would construct one utility-scale wind turbine on Wallops Island that would be capable of generating 5 GWh of electricity per year. The single 2.0 MW wind turbine would be located west of the U.S. Navy V-10/V-20 complex in the same location as the southern wind turbine under the Proposed Action. The footprint, work space, and staging areas would be the same as described under the Proposed Action, but the construction period would be approximately 4 months. NASA would also install up to five 2.4 kW wind turbines at the Main Base and Mainland as described under the Proposed Action Alternative.

In addition to the wind turbines, NASA would install a system of solar panels at Wallops Main Base that would be capable of generating up to 5 GWh/year (the equivalent of one utility-scale wind turbine). Approximately 19,000-square-meter (15-square-foot) solar panels, equaling an area of approximately 3 hectares (7.5 acres), would be needed to meet this power generating capability. Panel spacing requirements (to avoid shading and allow maintenance) would increase the overall required land area dedicated to solar panels to approximately 16 hectares (40 acres). The power generated by the solar panels would be connected via underground transmission lines to a set of switchgear that would be enclosed in a small 5-meter by 6-meter (16-foot by 20-foot) pre-fabricated building. Solar panels would be installed in open, grassy areas of Wallops Main Base. The installation period for the solar panels would be approximately 2 months.

Alternative Two

NASA would install up to five 2.4 kW wind turbines at the Main Base and Mainland as described under the Proposed Action Alternative. Alternative Two would also consist of installing a system of solar panels at Wallops Main Base that would be capable of generating 10 GWh/year of power. To produce this amount of energy, WFF would install approximately 38,000-square-meter (15-square-foot) solar panels that would equal an area of approximately 6 hectares (15 acres). Panel spacing requirements (to avoid shading and allow maintenance) would increase the overall required land area dedicated to solar panels to approximately 32 hectares (80 acres).

The power generated by the solar panels would be connected via underground transmission lines to a set of switchgear that would be enclosed in a small 5-meter by 6-meter (16-foot by 20-foot) pre-fabricated building. Solar panels would be installed in open, grassy areas of Wallops Main Base. All solar panels would be located and situated so as not to result in glare that would be a

safety hazard to pilots flying in the WFF Aircraft Operating Area. The installation period for the solar panels would be approximately 4 months.

PREVIOUS SURVEYS AND SECTION 106 CONSULTATIONS

In November 2003, URS Group, Inc. (URS) and EG&G Technical Services, Inc. (EG&G) prepared a *Cultural Resources Assessment of Wallops Flight Facility, Accomack County, Virginia* that examined each of the three land areas of the facility within WFF's property boundaries: Wallops Main Base, Wallops Mainland, and Wallops Island. This report established a predictive model for archaeological potential for the entire WFF property. VDHR concurred with the findings of this report in a letter dated December 3, 2003.

In December 2004, URS and EG&G prepared a *Historic Resources Survey and Eligibility Report for Wallops Flight Facility* that included an evaluation of buildings and structures at WFF built prior to 1956 for their eligibility for listing in the National Register of Historic Places (NRHP). Two resources—the Wallops Coast Guard Lifesaving Station (VDHR #001-0027-0100; WFF# V-065) and its associated Coast Guard Observation Tower (001-0027-0101; WFF# V-070)—were found to be eligible for listing in the NRHP and Virginia Landmarks Register. The other surveyed resources were determined not to be NRHP eligible because they lacked the historical significance or integrity necessary to convey significance. In a letter dated November 4, 2004, the VDHR concurred with the findings and determinations in the *Historic Resources Survey and Eligibility Report*.

DETERMINATION OF EFFECTS

Because NASA is still in the planning stages of the proposed undertaking and is evaluating several alternatives under NEPA, not all aspects of the project are known at this time. In particular, the specific location of the solar panels has not been determined. The analysis for the DEA found that the construction of wind turbines on Wallops Island under Alternatives One and Two is not likely to have an adverse effect on aboveground historic properties or tribal areas within the 3.2-kilometer (2-mile) radius Area of Potential Effects (APE) or to archaeological resources within the area of ground disturbance associated with the undertaking.

If solar panels are employed under Alternatives Two and Three, NASA would utilize the archaeological sensitivity model included in the *Cultural Resources Assessment of NASA Wallops Flight Facility, Accomack County, Virginia* (URS/EG&G 2003) to ensure that solar panels would not be placed in areas of moderate or high sensitivity for archaeological resources. Additionally, NASA would use the *Historic Resources Survey and Eligibility Report for Wallops Flight Facility, Accomack County, Virginia* (URS/EG&G 2004) to ensure that solar panels would be placed only on or adjacent to buildings or structures that were determined ineligible for listing in the National Register of Historic Places (NRHP). Given these conditions, the study found that the installation of solar panels is not likely to have an adverse effect on historic properties at WFF.

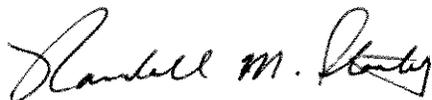
Because specific guidelines for Section 106 review of wind turbine projects have not yet been developed in Virginia, the VDHR Section 106 guidance on cell towers was used to determine the Area of Potential Effect (APE). This guidance recommends an APE for cell towers of 61 meters (200 feet) or more in height that extends 3.2 kilometers (2 miles) from the cell tower to account primarily for indirect visual effects. Because wind turbines are similar to cell towers in terms of their potential for visual impact, this 3.2-kilometer (2-mile) APE was used to determine effects on historic properties for the two utility-scale turbines. The utility-scale turbines are anticipated to have no adverse effect on historic properties or tribal areas outside of WFF, should they be present, given the nature of the existing viewshed to WFF. The majority of the facilities at WFF exhibit rooftop radar antennas, beacons, heating, ventilation and air conditioning systems, cooling towers, and other industrial equipment, and the presence at WFF of numerous towers, including elevated water storage tanks, boresight, meteorological, and radio equipment platforms.

Given the nature of the existing viewshed toward WFF, residential-scale turbines are also not likely to have an adverse effect on the setting or feeling of any yet-to-be identified tribal areas or NRHP-eligible resources, if present, within or outside of the boundaries of WFF.

Accordingly, NASA has determined that the proposed Alternative Energy Program, including all three alternatives, will have no adverse effect on historic properties or tribal areas. NASA requests that VCI review the attached DEA and provide comments by June 14, 2010.

If you have any questions or comments regarding this portion of the project, please contact me, Randall Stanley, at (757) 824-1309 or Shari Silbert at (757) 824-2327.

Sincerely,



Randall M. Stanley
Facility Historic Preservation Officer

Enclosure

cc:

200/Ms. C. Massey

228/Mr. G. Lilly

250/Ms. C. Turner

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



Reply to Attn of: 228

January 31, 2011

Amanda Lee
Architectural Historian
Office of Review and Compliance
Department of Historic Resources
2801 Kensington Avenue
Richmond, Virginia 23221-0311

**Subject: Section 106 Determination and Environmental Assessment for the Proposed Alternative Energy Project at NASA Wallops Flight Facility, Wallops Island, VA
DHR File#: 2009-1883**

As per the request of VDHR in a letter from Ron Grayson dated May 12, 2010, NASA is continuing consultation with VDHR on the subject undertaking by offering the following responses to questions posed in that letter.

As was stated in an email from Shari Silbert to you on January 21, 2010, NASA WFF is finalizing the Environmental Assessment for the subject Alternative Energy Project. The last correspondence NASA received from Ron Grayson in the aforementioned letter reflected that NASA was proposing 5 residential-scale wind turbines, 3 of which were to be installed in locations that had yet to be determined at the time, and that no locations had been as yet identified for the proposed solar arrays. NASA has since determined potential locations for the solar arrays and has reduced the number of residential-scale turbines to 2 and has identified sites for these 2 turbines. Please refer to the attached maps for the potential locations for the solar arrays and the site map for the locations of the 2 wind turbines. The potential sites for the solar arrays were narrowed down by eliminating such factors as the presence of existing Navy and Coast Guard housing, NASA's active runways, and the potential effect to historic properties, as well as the need to locate the panels in open areas that would provide the largest benefit from the sun.

During the required excavation for the installation of the 2 wind turbines and as requested in the letter from Mr. Grayson, NASA would plan to have a professional archaeologist on site during excavation activities at the Visitor Center that take place in conjunction with the proposed work.

In his letter, Mr. Grayson also requested that NASA contact the Virginia Council on Indians to better identify Native American Tribes that have an ancestral interest in the area, and gave us the name of Deanna Beacham as a point of contact. Please see the email correspondence concerning this communication with Ms. Beacham, attached. In Ms. Beacham's response to NASA's email, the VCI expressed no concern over the installation of the proposed wind turbines.

Based on the above information, we are asking that VDHR concur with NASA's determination of no-adverse affect to historic properties concerning this future undertaking.

If you have any questions or comments regarding this portion of the project, please contact me, Randall Stanley, at (757) 824-1309, or Shari Silbert at (757) 824-2327.

Sincerely,



Randall M. Stanley
WFF Historic Preservation Officer

Enclosures: APE of (2) Proposed Residential Wind Turbines
Map of proposed locations for future solar panels
Email correspondence with Deana Beacham

cc:

200/Ms. C. Massey

228/Mr. G. Lilly

250/Ms. C. Turner

Distances Between Skystream Sites and National Register of Historic Places

2 mile Viewshed Analysis

Visitor Center Wind Turbine

5.7 Miles

5.8 Miles

Assateague Lighthouse NRHP

1.2 Miles

Arbuckle Place NRHP

Island Gate Wind Turbine

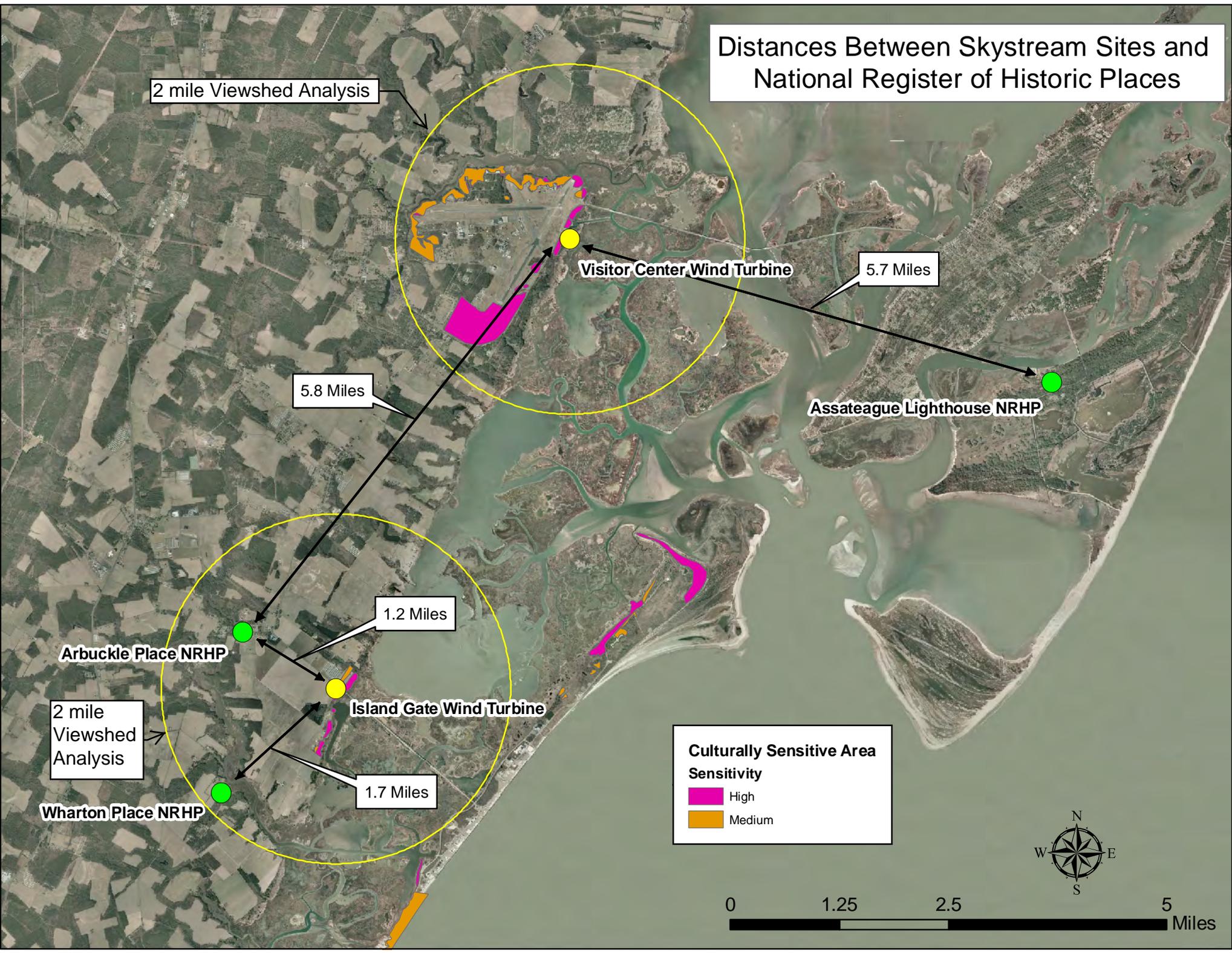
2 mile Viewshed Analysis

1.7 Miles

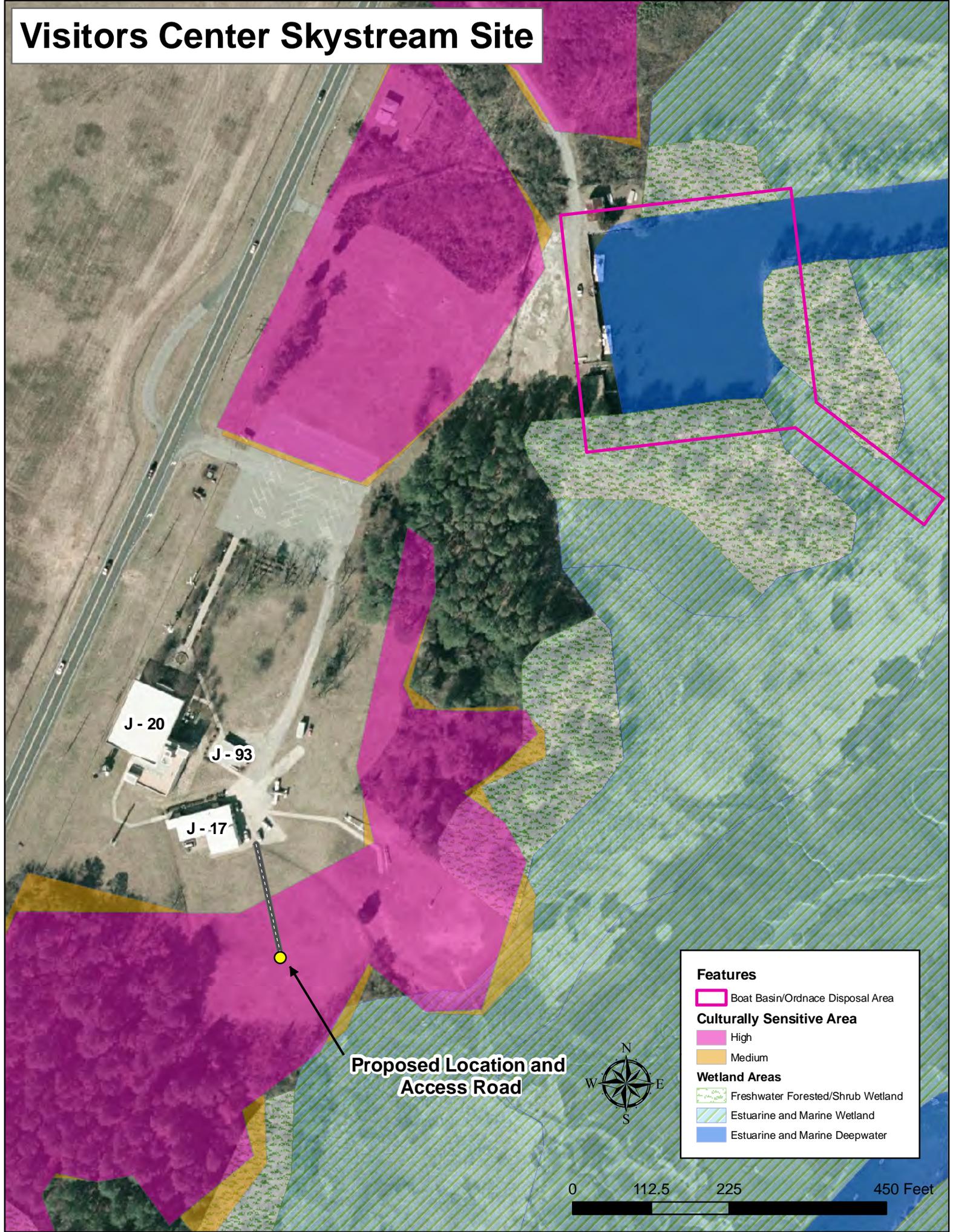
Wharton Place NRHP

Culturally Sensitive Area Sensitivity

- High
- Medium



Visitors Center Skystream Site



J - 20

J - 93

J - 17

**Proposed Location and
Access Road**

Features

 Boat Basin/Ordance Disposal Area

Culturally Sensitive Area

 High

 Medium

Wetland Areas

 Freshwater Forested/Shrub Wetland

 Estuarine and Marine Wetland

 Estuarine and Marine Deepwater

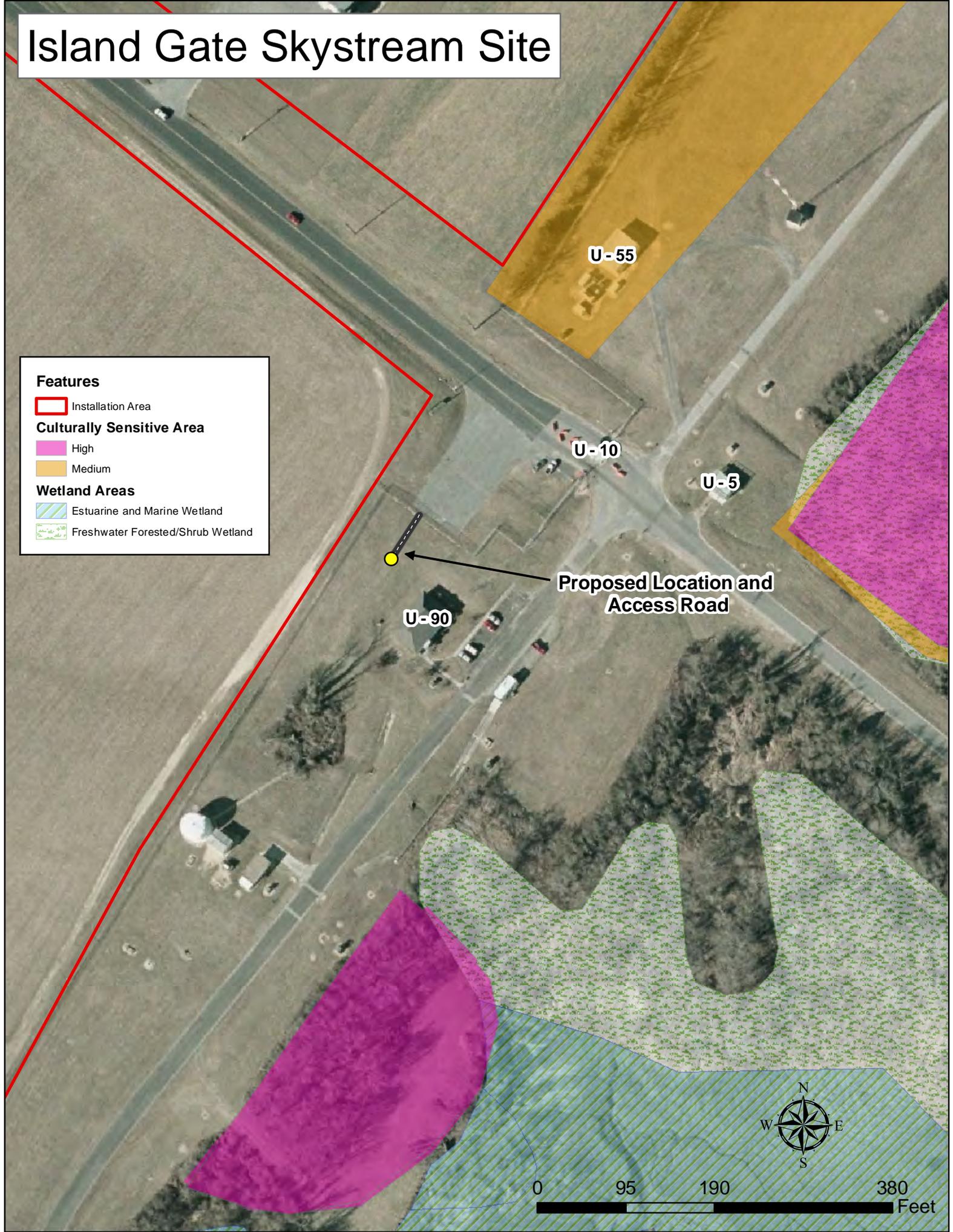


0 112.5 225 450 Feet

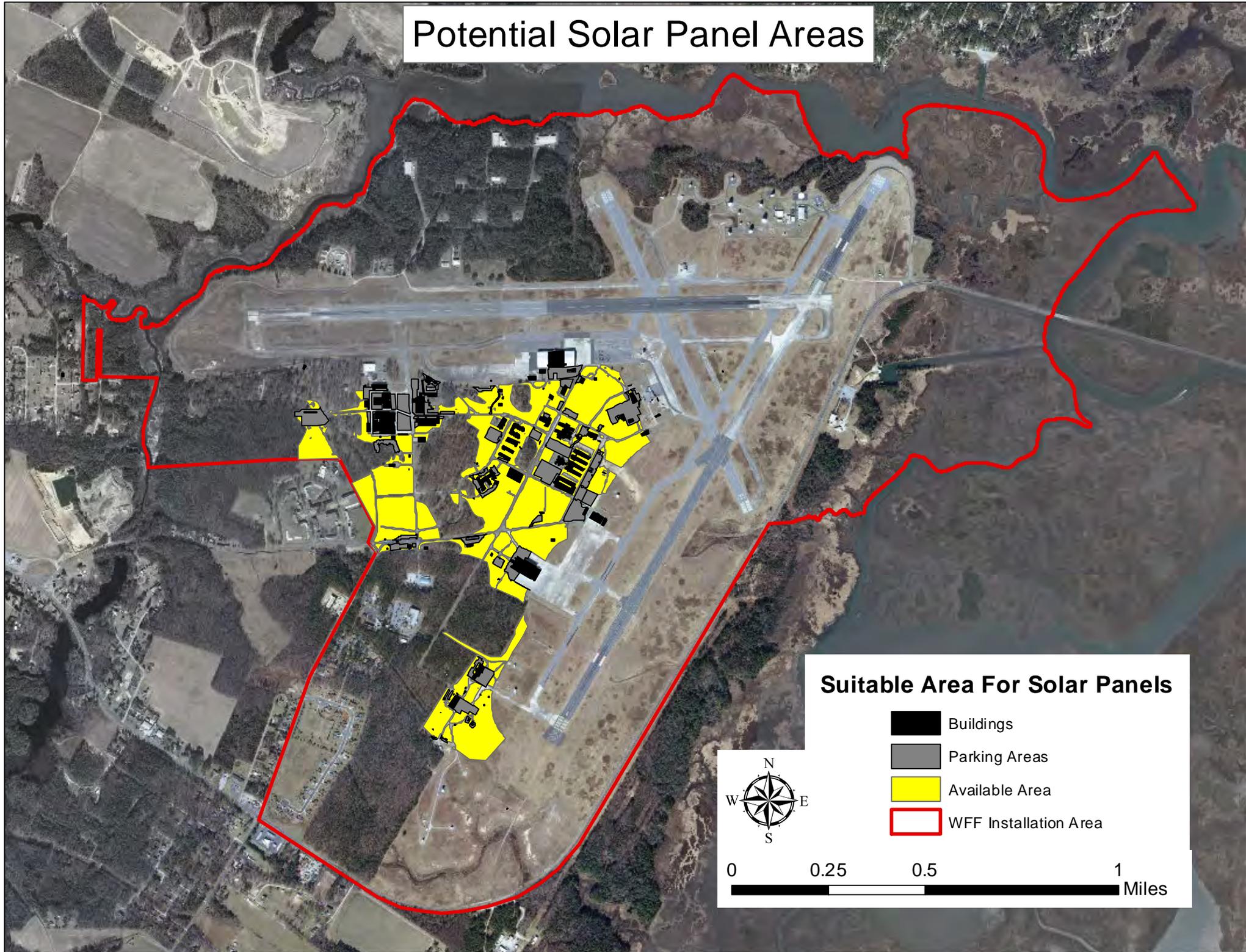
Island Gate Skystream Site

Features

- Installation Area
- Culturally Sensitive Area**
 - High
 - Medium
- Wetland Areas**
 - Estuarine and Marine Wetland
 - Freshwater Forested/Shrub Wetland



Potential Solar Panel Areas



Stanley, Randall M. (WFF-2280)

From: Beacham, Deanna (GOV) [Deanna.Beacham@governor.virginia.gov]
Sent: Thursday, May 27, 2010 10:22 AM
To: Stanley, Randall M. (WFF-2280)
Cc: Grayson, Ron (DHR); Silbert, Shari A. (WFF-200.C)[EG&G, Inc. (WICC)]; Suzanne_Richert@URSCorp.com; Bundick, Joshua A. (WFF-2500)
Subject: RE: Request for Native American Tribe Information

Greetings Mr. Stanley,

On behalf of all the Virginia Algonquian descendent community tribes in Virginia, the Virginia Council on Indians takes an interest in the Section 106 process for all ground-disturbing projects, and requests to be a consulting party on such projects. Whenever a specific tribe or tribes should be contacted as well, we will let you know. Your contact and signing party for Section 106 will be me until you are notified otherwise.

Regarding future projects, at this time no concerns have been raised by any Virginia tribe regarding viewshed disturbance by wind turbines, either offshore or on land. If this situation changes, we will inform you also.

Sincerely,

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

From: Stanley, Randall M. (WFF-2280) [<mailto:randall.m.stanley@nasa.gov>]
Sent: Wednesday, May 26, 2010 11:28 AM
To: Beacham, Deanna (GOV)
Cc: Grayson, Ron (DHR); Silbert, Shari A. (WFF-200.C)[EG&G, Inc. (WICC)]; Suzanne_Richert@URSCorp.com; Bundick, Joshua A. (WFF-2500)
Subject: Request for Native American Tribe Information

Ms. Beacham,

NASA Wallops Flight Facility, located in Accomack County, Virginia, is currently in consultation with the Virginia Department of Historic Resources (VDHR) regarding several proposed projects. According to the website for the Federal Bureau of Indian Affairs, there are no federally recognized tribes registered in the state of Virginia; and according to the website for the Virginia Council on Indians (VCI), there are no state-recognized tribes registered in Accomack County. However, in a letter dated May 12, 2010, VDHR requested that NASA contact the VCI directly regarding Native American Tribes that may have an ancestral interest in the area. Can you please provide any information, including contacts, that you may have regarding Native American Tribes that may have an ancestral interest in the Eastern Shore of Virginia, specifically, the Wallops Flight Facility and the surrounding area. Attached is a location map for Wallops Flight Facility. Please let us know if you have any questions.

Thank you.

Randall M. Stanley
NASA / WFF FMB, Code 228



COMMONWEALTH of VIRGINIA

Department of Historic Resources

Douglas W. Domenech
Secretary of Natural Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Kathleen S. Kilpatrick
Director

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

March 2, 2011

Mr. Randall M. Stanley, Historic Preservation Officer
NASA Goddard Space Flight Center
Wallops Flight Facility (WFF)
Building N-161, Room 127
Wallops Island, Virginia 23337

Re: Section 106 Determination and Environmental Assessment for the Proposed
Alternative Energy Project at NASA Wallops Flight Facility (WFF)
Accomack County
DHR File No. 2009-1883

Dear Mr. Stanley,

On February 1, 2011 the Virginia Department of Historic Resources (DHR) received additional information regarding the above referenced project for our review and comment pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended.

DHR understands that NASA WFF has determined the location for solar arrays and two (2) residential-scale turbines for its alternative energy project. The potential sites for the solar arrays was narrowed down by eliminating such factors as the presence of existing Navy and Coast Guard housing, NASA's active runways, and the potential effect to historic properties, as well as the need to locate the panels in open areas that would provide the largest benefit from the sun. We also understand that NASA WFF plans to have a professional archaeologist on site during the excavation activities for the wind turbines.

Based upon a review of all information provided to date, DHR concurs no adverse effect to historic properties provided that NASA WFF ensures that the following conditions are met as outlined in your email of April 16, 2010. (*See attached.*)

- "The foundations for these turbines are no more than 24" in diameter and support the 4" diameter pole. We would hand dig within this area in the usual manner to rule out the possibility that anything of archaeological or historic significance exists and proceed only after this possibility is ruled out."

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

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

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

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

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

- “the access roads will be minimum width (no more than 8 feet wide) and will require no ground disturbance to install. We intend to spread a gravel base or crusher run over existing grade to form these access roads.”

Should you have any questions, I may be reached via email at amanda.lee@dhr.virginia.gov.

Sincerely,

A handwritten signature in blue ink that reads "M. Amanda Lee". The signature is written in a cursive style.

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

Cc: Shari A. Silbert, NASA WFF

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10 Courthouse Ave.
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