



NASA Glenn Research Center Plum Brook Station Wind Farm Project

6:00-6:30 pm

Open House and Poster Session

6:30-7:30 pm

Project Update Presentation

7:30-8:00 pm

Questions and Answers



NASA Glenn Research Center Plum Brook Station Wind Farm Project

**September 19, 2013
Project Update**



Agenda



- Welcome and Introduction
- Background
- Purpose of the PBS Wind Farm Project
- Public Participation
- Development of the Draft Environmental Impact Statement
- Consultations with State and Federal Agencies
- Studies Conducted to Support the Draft NASA Wind Farm EIS
 - Wildlife Surveys
 - Wetland Delineations
 - Architectural Resource Survey
- Next Steps
- Contact
- Questions



Introduction-NASA Wind Farm Project Team



- NASA
 - Bryan Coates, NASA Wind Farm Project Manager
 - Robert Lallier, NASA GRC NEPA Program Manager
 - Les Main, NASA GRC Historic Preservation Officer
 - Adam Bihary, NASA GRC Project Manager
 - Tina Norwood, NASA Headquarters NEPA Manager

- Science Applications International Corporation (SAIC)
 - Audra Upchurch
 - Doug Outlaw
 - Scott Heiser
 - Lorraine Gross
 - Linda Robinson
 - Sydel Cavanaugh

- Western EcoSystems Technology, Inc. (WEST)
 - Rhett Good

- AWS Truepower
 - Kate Morphis

- Cultural Resources Analyst, Inc. (CRA)
 - Elizabeth Heavrin



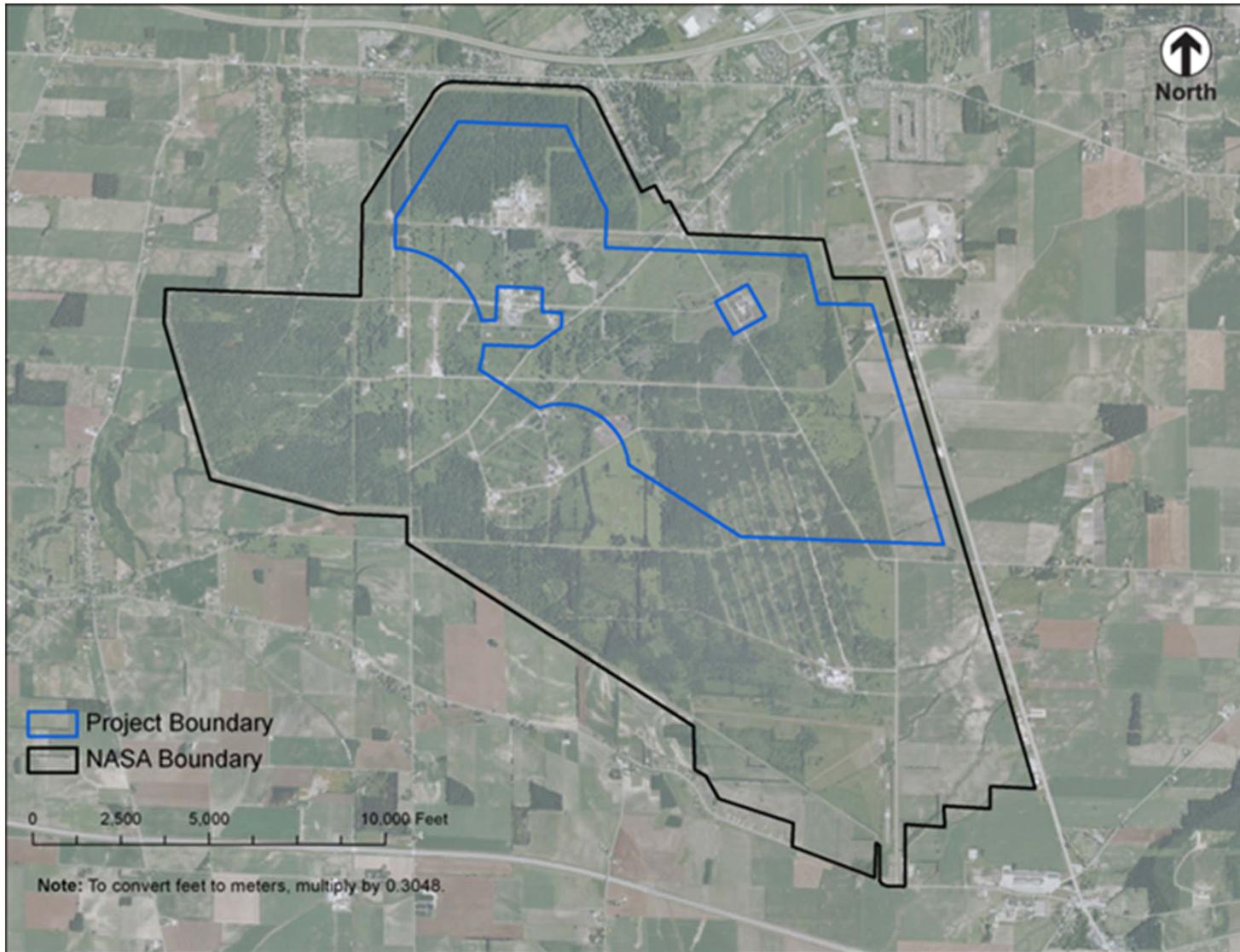
Background



- NASA Glenn Research Center is proposing to enter into a 20- to 25-year partnership with a commercial wind energy developer to construct and operate a wind farm at NASA GRC's Plum Brook Station.
- The proposed wind farm would have an estimated maximum capacity of 65 megawatts and consist of up to 26 wind turbines, with each turbine rated at up to 2.5 megawatts.
- NASA plans to utilize a 2,000-acre tract of land along the east-central portion of PBS for the construction and operation of the wind farm.



Plum Brook Station Wind Farm Project Area





Purpose of the PBS Wind Farm Project



- The purpose of the proposed PBS Wind Farm Project is to generate clean, renewable energy at PBS from a technologically proven source to meet several Federal requirements.
- The PBS Wind Farm Project would also support NASA's goal to set an example of leadership in environmental stewardship and accountability by a Federal agency.
- When fully operational, this project may assist NASA in complying with the Energy Policy Act of 2005 and Executive Orders.



Public Participation



- On August 25, 2010, NASA published a Notice of Intent in the *Federal Register* (75 FR 52374) to prepare a draft environmental impact statement (EIS) and conduct scoping for the PBS Wind Farm Project.
- A scoping meeting to solicit public input on the environmental issues to be addressed and the alternatives to be considered in this draft EIS was held on September 14, 2010, in Sandusky, Ohio.
- The scoping period ended on October 23, 2010. NASA has taken all scoping comments under consideration as we move forward with the wind farm analyses.



Development of the Draft Environmental Impact Statement



- Since the close of the scoping period, NASA has been actively engaged in developing the *Draft Environmental Impact Statement for the NASA Glenn Research Center Plum Brook Station Wind Farm Project (NASA Wind Farm EIS)*.
- The *NASA Wind Farm EIS* is being developed in accordance with the National Environmental Policy Act of 1969 (NEPA) as amended (42 U.S.C. 4321 et seq.); the Council on Quality's NEPA implementing regulations (40 CFR 1500–1508); and NASA's NEPA policy and procedures (14 CFR 1216.3).
- The *NASA Wind Farm EIS* will assist NASA in its the decision-making process regarding the proposed PBS Wind Farm Project.



Development of the Draft Environmental Impact Statement



- The *NASA Wind Farm EIS* will consider:
 - Potential adverse and beneficial impacts to the natural and human environment
 - Measures that could be applied to lessen impacts
- Key Issues being considered in the *NASA Wind Farm EIS* include:
 - Impacts to birds and bats
 - Shadow and flicker disturbances
 - Visual impacts
 - Impacts to cultural resources
 - Operational noise
 - Impacts from construction



Consultations with State and Federal Agencies



- As part of the development of the *NASA Wind Farm EIS*, NASA has initiated consultation with numerous state and federal agencies regarding to the PBS Wind Farm Project.
- These include, but are not limited to, the:
 - Ohio Historic Preservation Office (OHPO)
 - Ohio Department of Natural Resources (ODNR)
 - Ohio Department of Transportation
 - United States Fish and Wildlife Service (USFWS)
 - Federal Aviation Administration
 - Natural Resource Conservation Service
 - National Telecommunications and Information Administration
 - United States Army Corps of Engineers (USACE).



Studies Conducted to Support the *Draft NASA Wind Farm EIS*



- During the consultation process with OHPO, ODNR, USFWS, and USACE, it was determined that additional information was needed to complete the *Draft NASA Wind Farm EIS*.
- This included information regarding:
 - state- and federally- protected species
 - wetlands
 - cultural resources
- NASA has conducted wildlife surveys and wetland delineations within the project site and an architectural survey of historic sites within and near the project site.
- The findings from these studies are being incorporated into the *Draft NASA Wind Farm EIS*.



Wildlife Surveys



- From 2009 to 2012, NASA, in coordination with USFWS and ODNR, conducted several preconstruction wildlife surveys.
- Bat surveys included bat mist netting, bat acoustic monitoring, and spring and fall nocturnal migration radar monitoring.
- Bird surveys included diurnal passerine and raptor migration surveys, a breeding bird survey, spring and fall nocturnal migration radar surveys, and bald eagle nest searches and monitoring.
- NASA also conducted an intensive survey at PBS for the eastern massasauga (*Sistrurus catenatus*), a species of rattlesnake listed as endangered by the ODNR's Division of Wildlife and as a candidate species by USFWS.



Wildlife Surveys – Bat Acoustic Monitoring



- Acoustic monitoring of bat activity at PBS was conducted from March through November 2010.
- Acoustic monitoring involved the installation of specialized microphones capable of recording frequencies within the range of typical bat echolocation calls at PBS.
- Results of the survey were evaluated using bat call identification software and indicated the presence of hoary, red, evening, big brown, silver-haired, and *Myotis* species.





Wildlife Surveys – Bat Acoustic Monitoring



- The number of bat passes recorded was compared with other wind energy facilities in the United States and Ohio where preconstruction monitoring is also taking place.
 - Results indicate that the number of bat passes at PBS was higher than existing facilities in the western United States, such as Wyoming and Minnesota, but lower than the average number of passes at facilities in the eastern United States, for example, West Virginia and Tennessee.
 - When compared with the preconstruction monitoring collected by the proposed project in Ohio, the number of bat passes at PBS was higher.





Wildlife Surveys – Bat Mist-Netting Surveys



- As a result of consultation with the ODNR and USFWS, bat mist-net capture studies were conducted in June 2010, and again in July 2012 to determine if the Indiana bat (*Myotis sodalis*) was present on site.
- A total of 13 net sites were used across PBS during the 2010 and 2012 surveys.
- Although no Indiana bats were found, five bat species were captured, including the big brown bat (*Eptesicus fuscus*), the little brown bat (*Myotis lucifugus*), the eastern red bat (*Lasiurus borealis*), the northern long-eared bat (*Myotis septentrionalis*), and the hoary bat (*Lasiurus cinereus*).





Wildlife Surveys – Spring and Fall Radar Surveys



- Spring and Fall Radar Surveys
 - Nocturnal bird and bat migratory radar monitoring was also a component of the recommended surveys in the protocol.
 - During the spring and fall of 2010, radar instrumentation was used to record the passage rate and elevation of birds and bats at PBS.





Wildlife Surveys – Avian Surveys



- During the passerine migration studies conducted during the fall of 2009 and spring of 2010.
 - No federally listed species were observed, although two state-listed species, the dark eyed junco (*Junco hyemalis*) and the hermit thrush (*Catharus guttatus*), were recorded.



- The diurnal bird/raptor migration count was conducted during the fall of 2009 and again during the spring of 2010.

The survey did not record any federally listed species; however, one state-listed endangered bird, the northern harrier (*Circus cyaneus*), as well as three state-listed threatened birds, the bald eagle (*Haliaeetus leucocephalus*), peregrine falcon (*Falco peregrinus*), and osprey (*Pandion haliaetus*), were counted.





Wildlife Surveys – Bald Eagle Monitoring



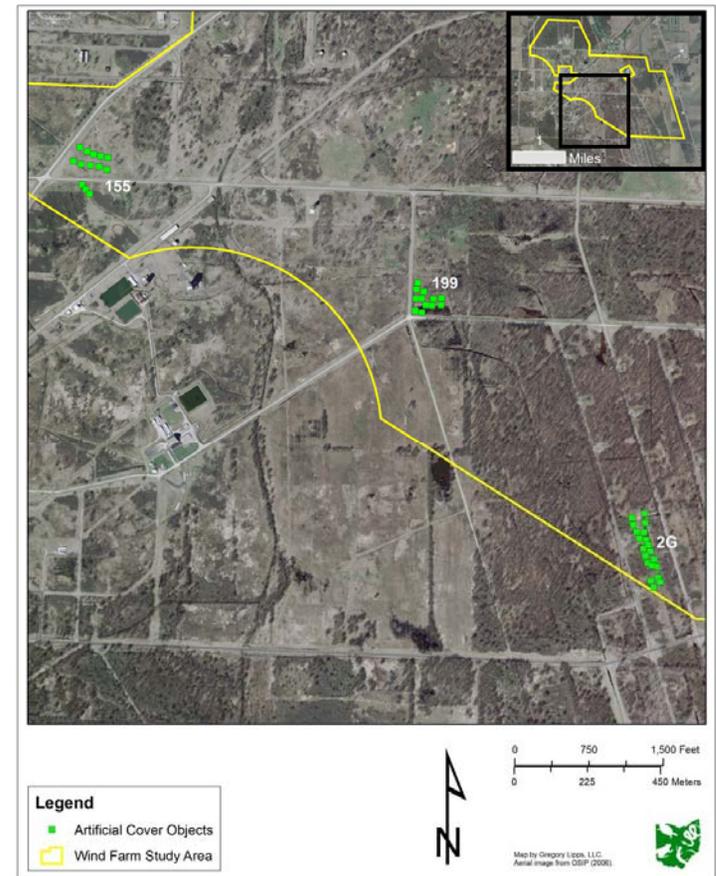
- Monitoring efforts have also included bald eagle nest searches and monitoring. Results of the bald eagle nest and monitoring activities showed that 10 nests occur within a 7-mile (11-kilometer) radius of the project area, including 1 on site.
- From May 2012 through April 2013, bald eagle point count surveys were conducted.
 - Three plots were monitored over the course of the survey.
 - Multiple discrete eagles were observed and results indicate that PBS is capable of hosting bald eagles during both the migration and breeding seasons.



Wildlife Surveys – Eastern Massasauga Rattlesnake



- From May to October 2012, NASA conducted a survey for the eastern massasauga (*Sistrurus catenatus*), a species of rattlesnake listed as endangered by the ODNR's Division of Wildlife and as a candidate species by USFWS, was conducted in response to a request received from the USFWS.
- Three sites were chosen inside the boundary of the proposed project area based on suitable habitat and several corrugated sheets of metal were placed at each site to provide cover and attract any potential snake species in the area. The sheets were checked once per week during the survey period and the occurrence of any snake species was recorded.





Wildlife Surveys – Eastern Massasauga Rattlesnake



- Although no eastern massasaugas were found, three other species were recorded during the course of the survey.
 - eastern fox snake (*Pantherophis gloydi*)
 - Dekay's brownsnake (*Storeria dekayi*)
 - eastern gartersnake (*Thamnophis sirtalis sirtalis*)





Wetland Delineation



- From 2011-2012, NASA conducted a delineation of wetlands and other waters within PBS.
- This delineation allows NASA to conduct more detailed assessment of any potential wetland impacts associated with the proposed wind farm.



Wetland Delineation



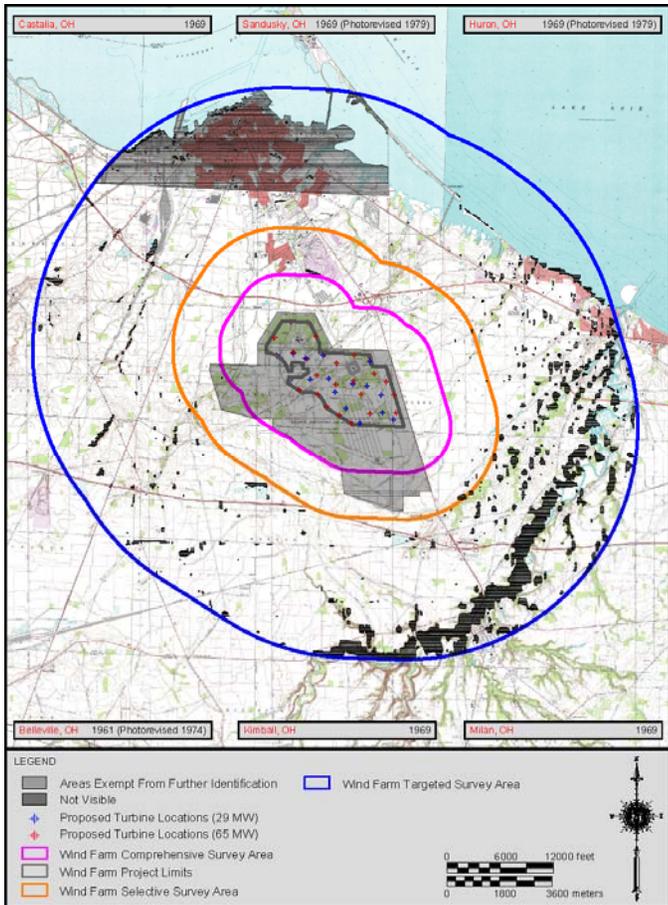
- It was determined during the survey that PBS contains:^{*}
 - 1,050 wetlands totaling 422 acres
 - 373 waterways totaling approximately 309,000 linear feet
 - 15 ponds totaling approximately 15 acres.
- It was also determined during the survey that the PBS Wind Farm Project Area contains:^{*}
 - 379 wetlands totaling approximately 130 acres
 - 132 waterways totaling approximately 103,000 linear feet
 - 6 ponds totaling approximately 5 acres.



^{*}Note: delineations still need to be verified by USACE and Ohio Environmental Protection Agency



Architectural Resources Survey



- NASA consulted the Ohio Historic Preservation Office to define the area of potential effect (APE).
- The Wind Farm Project APE for indirect effects broadly consists of the area within a 5-mile radius extending from the proposed project limits.
 - The area within 1 mile of the proposed Wind Farm Project limits was defined as the Comprehensive Survey Area
 - The area located between 1 and 2 miles from the proposed Wind Farm Project area was defined as the Selective Survey Area
 - The area located between 2 and 5 miles from the proposed Wind Farm Project area was defined as the Targeted Survey Area



Architectural Resource Survey



- From 2012-2013 NASA conducted an architectural resource survey and impact study for the proposed PBS Wind Farm Project.
- In February 2013, NASA completed fieldwork, conducted additional archival research, and met with local interested parties.
- The work was completed in accordance with the methods established in a research design plan approved by OHPO.
- NASA invites interested parties who would like to join the Section 106 Process to contact Les Main at Leslie.A.Main@nasa.gov.



Next Steps



- NASA will continue coordination and consultations with OHPO, ODNR, USFWS, USACE, and other state and federal agencies.
- NASA will continue to incorporate the findings from the consultation processes and associated studies into the *Draft NASA Wind Farm EIS*.
- NASA plans to enter into a partnership with a commercial wind energy developer to establish a wind energy facility at PBS.
- It is anticipated that some additional studies may need to be completed before installation and operation of the PBS Wind Farm.



Next Steps



- NASA plans to issue the *Draft NASA Wind Farm EIS* for public review and comment in late 2013.
- NASA will publish a Notice of Availability (NOA) of the *Draft NASA Wind Farm EIS* in the *Federal Register*.
 - The NOA will announce the availability of the *Draft NASA Wind Farm EIS* for public review and comment.
 - Publication of the NOA will begin the 45-day review and comment period for the *Draft NASA Wind Farm EIS*.
- NASA will also post notices in local newspapers to inform the public the *Draft NASA Wind Farm EIS* is available for review and comment.
- All comments received during the review and comment period will be considered in the preparation of the *Final NASA Wind Farm EIS*.



Contact



- For further information regarding the *NASA Wind Farm EIS*, please contact:

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- Documents related to the *NASA Wind Farm EIS* are posted at:
http://www.nasa.gov/centers/glenn/about/testfacilities/wind_farm_index



Questions

