

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

NOTICE: 09-WFF-10

National Environmental Policy Act; Expansion of the Wallops Flight Facility Launch Range

AGENCY: National Aeronautics and Space Administration

ACTION: Finding of No Significant Impact

SUMMARY: Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321, *et seq.*); the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508); and National Aeronautics and Space Administration (NASA) policy and procedures (14 CFR Part 1216, Subpart 1216.3); NASA has made a Finding of No Significant Impact with respect to expansion of the Wallops Flight Facility (WFF) launch range. Under the Proposed Action, NASA and Mid-Atlantic Regional Spaceport facilities would be upgraded to support up to and including medium large class suborbital and orbital Expendable Launch Vehicles at WFF.

ADDRESS: Copies of the Final Environmental Assessment (EA) may be viewed at the following locations:

Eastern Shore Public Library, 23610 Front Street, Accomac, Virginia 23301
Hours: Mon, Tues, Wed, Fri: 9 a.m. - 6 p.m.; Thurs: 9 a.m. - 9 p.m.; Sat: 9 a.m. - 1 p.m.
Phone: (757) 787-3400

Chincoteague Island Library, 4077 Main Street, Chincoteague, Virginia 23336
Hours: Mon: 10 a.m. - 2 p.m.; Tues: 10 a.m. - 5 p.m.; Wed, Fri, Sat: 1 p.m. - 5 p.m.
Phone: (757) 336-3460

NASA WFF Technical Library, Building E-105, Wallops Island, Virginia 23337
Hours: Mon – Fri: 8 a.m. - 4:30 p.m.
Phone: (757) 824-1065

On the Internet at: http://sites.wff.nasa.gov/code250/docs/EWLR_FEA.pdf

A limited number of copies of the Final EA are available by contacting:

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SUPPLEMENTAL INFORMATION: The National Aeronautics and Space Administration (NASA) has reviewed the Environmental Assessment (EA) prepared for the expansion of the launch range at the NASA Goddard Space Flight Center's (GSFC) Wallops Flight Facility (WFF) and has concluded that the EA represents an accurate and adequate analysis of the scope and level of associated environmental impacts. NASA hereby incorporates the EA by reference in the Finding of No Significant Impact (FONSI). NASA solicited public and agency review and comment on the environmental impacts of the proposed action through:

1. Publishing a notice of availability of the Draft EA in the Eastern Shore News on April 25, 2009 and the Chincoteague Beacon on April 30, 2009;
2. Making the Draft EA available at the Eastern Shore Public Library, Chincoteague Island Library, and WFF Technical Library;
3. Publishing the Draft EA on the WFF Environmental Office Web site;
4. Consulting with federal, state, and local agencies; and
5. Mailing the Draft EA directly to interested parties.

Comments received were taken into consideration in the Final EA.

WFF is a NASA GSFC field installation located in Accomack County on the Eastern Shore of Virginia. The EA addresses the proposed expansion of the launch range at WFF, and describes the potential impacts from the No Action Alternative and two Proposed Action Alternatives.

Under the No Action Alternative, NASA and the Mid-Atlantic Regional Spaceport (MARS) MARS would not expand their respective facilities to accommodate the transportation, processing, and launching of larger Expendable Launch Vehicles (ELVs) and spacecraft at WFF.

Under both Proposed Action Alternatives, NASA and MARS facilities would be upgraded to support up to and including medium large class suborbital and orbital ELV launches at WFF. Existing facilities at WFF are currently unable to adequately support such missions. Additional infrastructure would be needed to support larger civil, defense, commercial, and academic missions, including those needed by the United States to re-supply the International Space Station with cargo following the retirement of the Space Shuttle.

Alternative One would include site improvements required to support launch operations (such as facility construction and infrastructure improvements); testing, fueling, and processing operations; up to two static fire tests per year; and launching of up to six ELVs and associated spacecraft per year from MARS Pad 0-A on south Wallops Island. A variety of ELVs could be launched from Pad 0-A; however Orbital Sciences Corporation's Taurus II ELV would be the largest.

All construction would occur on Wallops Island. NASA would make minor modifications to its north boat dock; construct a Payload Processing Facility (PPF),

Payload Fueling Facility (PFF), and a Horizontal Integration Facility (HIF). NASA would also construct new roads and make minor upgrades to existing roads; and make minor modifications to the interiors of existing launch support facilities. MARS would construct a new launch complex and Liquid Fueling Facility (LFF) in approximately the same location as the existing Pad 0-A.

Implementation of Alternative One would maximize WFF's ability to accommodate the nation's future medium class ELV needs and would result in a maximum of 18 orbital-class launches from MARS Launch Complex 0 per year (12 existing launches from Pad 0-B, and 6 additional launches from Pad 0-A).

Under Alternative Two, NASA and MARS would maximize the use of existing facilities at WFF. Alternative Two would include site improvements required to support launch operations; testing, fueling, and processing operations; and up to two static fire tests per year. As with Alternative One, a variety of ELVs could be launched from Pad 0-A. Taurus II would be the largest.

All construction under Alternative Two would occur on Wallops Island. NASA would make minor modifications to its north boat dock; construct a "high-bay" addition to Building V-45 to be used for ELV and payload processing; construct new roads and make minor upgrades to existing roads; and make minor interior modifications to existing launch support facilities. MARS would construct a new launch complex and LFF in approximately the same location as the existing Pad 0-A.

A maximum of three orbital-class launches per year would occur from Pad 0-A, resulting in a maximum of 15 orbital-class launches from MARS Launch Complex 0 per year (12 existing launches from Pad 0-B, and 3 additional launches from Pad 0-A). Although Alternative Two would increase WFF's ability to support larger orbital class ELVs, the reduced infrastructure investment would not allow WFF to fully accommodate the nation's expected future medium class ELV needs.

SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS: Potential environmental impacts resulting from NASA's Proposed Action, Alternative One, are summarized below:

Topography: Site improvement activities would not substantially alter topography; therefore, changes to natural drainage patterns would be minor.

Geology and Soils: Construction activities and spills or leaks that may occur during storage or transportation of materials would have the potential to affect soils. To mitigate impacts, NASA and MARS would implement site-specific best management practices for vehicle and equipment fueling and maintenance, and spill prevention and control measures. Driven piles would create long-term changes to the subsurface geology immediately around the driven piles; however, the changes would be site specific and negligible.

Surface Waters Including Wetlands: Construction activities, spill or leaks during storage or transportation of materials, launch emissions, and launch failures would all have the potential to affect surface waters including wetlands. Approximately 1.7 hectares (4.1 acres) of wetlands would be affected by construction. To mitigate such impacts, NASA and MARS would complete additional wetland delineations if needed,

and obtain all necessary federal, state, and local permits prior to construction. During the permitting process, NASA would work with regulatory agencies to develop and implement mitigation measures; including compensatory wetland restoration, enhancement, and preservation to ensure no net loss of wetlands and to improve habitat conditions on WFF property.

Marine Waters: Temporary adverse impacts on marine waters in the area immediately surrounding the north Wallops Island boat basin would occur during improvements to the dock. Spent ELV stages falling into the ocean would impact the marine environment. Marine waters would be affected if a barge or vessel were to accidentally spill its fuels or lubricants into the ocean or estuary environment. Toxic concentrations are not anticipated in the open ocean due to the mixing and dilution rates associated with the wave movement and the vastness of the ocean environment; therefore, adverse impacts on marine waters would be short term and localized.

Floodplains: All facility construction and infrastructure improvements would take place within the 100-year and 500-year floodplains. Because Wallops Island is the location for WFF's core launch range functions, and is entirely within the floodplain, no practicable alternatives exist. The functionality of the floodplain on Wallops Island would not be substantially reduced due to the presence of proposed facilities because the footprint of the facilities would not cover a substantial area of the island.

Coastal Zone Management: All construction activities and rocket launches would occur within Virginia's Coastal Management Area. The Virginia Department of Environmental Quality (VDEQ) concurred with NASA's determination that the Proposed Action is consistent with the enforceable policies of the Virginia Coastal Resources Management Program.

Stormwater: Construction activities would result in minor changes to stormwater conveyance due to disruptions of the natural drainage. To mitigate impacts, NASA and MARS would design facilities in accordance with the Virginia Stormwater Management Law and Regulations and obtain Virginia Stormwater Management Program permits prior to construction. Up to 4 hectares (10 acres) of impervious area would be added. Addition of impervious area would result in a long-term adverse impact; however, with the incorporation of permanent stormwater management practices into site design, the impact would be localized and would not present a substantial adverse effect.

Wastewater: No adverse impacts would occur as the WFF wastewater treatment plant has the capacity to treat the approximately 4.5 percent increase from the new facilities and personnel.

Groundwater: NASA would provide potable water to the PPF, PFF, and HIF for drinking water supply, fire suppression, and industrial water use. In addition, static fire testing and launches would require the use of deluge water. Although WFF's water use would increase, maximum withdrawal amounts would be within the limit allowed by NASA's existing groundwater withdrawal permit.

Air Quality: Construction activities would generate fugitive dust and combustion emissions. Operation of generators and boilers would result in minor emissions of pollutants. NASA and MARS would mitigate adverse impacts to air quality by obtaining

air emission permits from the VDEQ and by implementing site-specific best management practices such as fugitive dust control and regular engine/system maintenance. No far-field impacts from rocket exhaust are anticipated. Short-term adverse impacts in the area immediately surrounding the launch pad, resulting from rocket exhaust, include high temperature exhaust gas mixture and elevated carbon monoxide concentrations.

Noise: Construction and transportation activities would have the potential to generate temporary increases in noise levels from heavy equipment operations. To mitigate impacts, NASA and MARS would require that workers wear hearing protection in accordance with Occupational Safety and Health Administration standards. Launches and static test firing would create loud instantaneous noise that may be heard for several miles from WFF. To mitigate public disturbance, NASA and MARS would continue to notify the public in advance of planned operations via widely available media outlets, including the internet, local radio stations, and newspapers.

Orbital and Reentry Debris: ELV upper stages and spacecraft placed into orbit would generate orbital debris that could re-enter the Earth's atmosphere. All orbital missions originating from WFF would comply with sponsoring or licensing agency processes for limiting generation of orbital debris, assessing the risk of reentry, and ensuring public safety.

Hazardous Materials and Hazardous Waste Management: The principal hazardous materials used would be liquid propellants (primarily liquid oxygen and rocket-grade kerosene), hypergolic propellants, pressurized gases, and various solvents and compounds used to process the ELV and spacecraft. The greatest potential impact to the environment would result from an accident (e.g., leak, fire, or explosion) at a storage location or from an accidental release during fueling, payload processing, or launch activities (e.g., spills or human exposure). To mitigate potential impacts, NASA and MARS would manage all hazardous materials and waste in accordance with applicable federal, state, and local regulations. Additionally, NASA and MARS would develop and implement emergency response plans, including the WFF Integrated Contingency Plan, to ensure that impacts would be minimized in the unlikely event of a hazardous substance release.

Radiation: Spacecraft processed and launched at WFF could result in a potential source of radiation. However, the amount of radioactive materials would be very small and the materials would be managed in accordance with federal licensing and safety regulations.

Munitions and Explosives of Concern: Ground disturbances during construction may have the potential to uncover munitions and explosives of concern (MEC) on Wallops Island. To mitigate potential impacts, a qualified MEC specialist would evaluate the area proposed for ground disturbance and conduct a survey of the area if necessary prior to construction activities.

Vegetation: Long-term adverse impacts to vegetation would occur due to the removal of 0.45 hectares (1.1 acres) of trees and 1.7 hectares (4.1 acres) of wetland vegetation due to the construction of the PPF, PFF, and road improvements. Impacts would be localized and would not present a substantial adverse effect. Minor adverse effects on vegetation from launches would also occur, but would be limited to a localized area around Pad 0-A. To mitigate impacts to wetlands, NASA and MARS would provide compensatory

wetland restoration, enhancement, and preservation to ensure no net loss of wetlands and to improve habitat conditions on WFF property.

Terrestrial Wildlife and Migratory Birds: Short-term adverse impacts to wildlife and migratory birds may occur during construction activities, launches, and static fire activities. Long-term impacts may occur due to the loss of wetland and forest habitat. To mitigate impacts to wetland habitats, NASA and MARS would compensate for such losses by restoration, preservation, and enhancement of wetlands.

Threatened and Endangered Species: NASA determined that the proposed boat dock improvements would not likely adversely affect federally listed sea turtles or marine mammals; the National Marine Fisheries Service (NMFS) concurred with NASA's determination. NASA consulted informally with the U.S. Fish and Wildlife Service (USFWS) regarding effects of the proposed action on listed sea turtles, piping plover, seabeach amaranth, and the candidate red knot. During this consultation, NASA found that proposed construction would not adversely affect listed species. However, the exterior lighting on proposed facilities and the noise and vibration associated with larger ELV operations (i.e., static fire testing and launches) may adversely affect nesting sea turtles and piping plovers. To mitigate impacts, NASA would implement lighting management procedures, as appropriate, during sea turtle nesting season, and would continue to manage the piping plover by regular monitoring and establishment of "off limits" areas during nesting season. Due to the historically low density of nesting sea turtles within the action area, and with the implementation of the above described mitigation measures, no substantial effect to listed species would be expected. NASA has prepared a Biological Assessment for the Proposed Action in accordance with the Endangered Species Act and would formally consult with USFWS prior to activating exterior lighting or conducting static fire testing or launches when sea turtles or plovers may be present. NASA would adhere to additional mitigation measures developed during formal consultation with USFWS.

Marine Mammals and Essential Fish Habitat: Spent ELV stages would fall into the ocean many miles offshore; no adverse effects on marine species are anticipated as a result. Although highly unlikely, debris and toxic materials from launch failures have a small potential to adversely affect marine mammals or managed fish species and their habitats in the vicinity of the project area. Implementation of emergency cleanup procedures would mitigate any impacts. NASA consulted with NMFS regarding impacts to Essential Fish Habitat (EFH) from the proposed action; NMFS responded that the north Wallops Island boat dock improvements would not result in substantial adverse effects to EFH, managed species, or their prey species.

Population, Employment, and Income: Construction activities would temporarily increase local employment opportunities and benefit local stores and businesses, and launch support activities would bring up to 125 new jobs to the area. Tax revenue would increase as a result, and the local economy would benefit from launches (tourism, services and commodities support, lodging, etc.).

Environmental Justice: Disproportionately high or adverse impacts to low-income or minority populations are not anticipated.

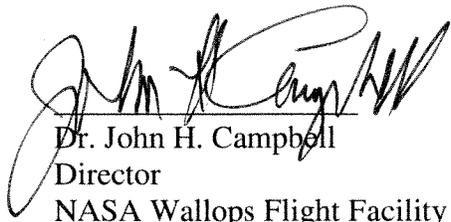
Health and Safety: Construction activities at the WFF site could result in short-term impacts to human health and safety and the increased usage of local fire, police, and medical services. Operation of spacecraft fueling and processing facilities and ELV launches would not present substantial impacts to public safety as all operations would be conducted in accordance with mission-specific ground and flight safety plans.

Cultural Resources: Ground disturbance would be located outside of areas designated as having moderate or high potential for archeological resources. No adverse effects on aboveground historic properties are anticipated. NASA consulted with the Virginia Department of Historic Resources (VDHR). VDHR concurred with NASA's determination that the proposed action would not adversely affect any historic properties.

Transportation: Temporary impacts to traffic flow would occur during construction activities and during the transportation of ELV and spacecraft components. To meet flight safety requirements, roads could be temporarily closed prior to and during a launch. However, such closures would be of short duration and infrequent. To mitigate impacts, NASA and MARS would coordinate closely with state and local officials regarding launch-related road closures, and would provide the public with prior notice to minimize disruption.

Cumulative Impacts: Cumulative impacts were evaluated for potentially affected resources including wetlands, groundwater, air quality, biological resources, and socioeconomic resources. No substantial cumulative impacts are anticipated from the Proposed Action when added to other known past, present, and reasonably foreseeable future actions within the WFF area.

Conclusion: NASA has identified no other issues of potential environmental concern. Based on the Final EA for the Expansion of the Wallops Flight Facility Launch Range, and review of underlying reference documents, NASA has determined that the environmental impacts associated with the Proposed Action will not individually or cumulatively have a significant impact on the quality of the human environment. Therefore, an environmental impact statement is not required.


Dr. John H. Campbell
Director
NASA Wallops Flight Facility

August 29, 2009
Date