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## ENVIRONMENTAL ASSESSMENT

**PROPOSED CONSTRUCTION OF TURNOUT LANES FROM VIRGINIA STATE HIGHWAY 175 TO THE NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE (NESDIS) WALLOPS COMMAND AND DATA ACQUISITION STATION (CDAS), WALLOPS ISLAND, VIRGINIA**





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## **SUMMARY**

### **Background and Purpose**

The National Environmental Satellite, Data, and Information Service (NESDIS) is part of the National Oceanic and Atmospheric Administration (NOAA) of the United States (U.S.) Department of Commerce. NESDIS operates environmental satellites, which collect information on atmospheric, oceanic, and terrestrial environmental conditions. The Wallops Command and Data Acquisition Station (CDAS), operated by NESDIS, gathers data from satellites via radio downlinks and controls satellites via transmission of radio signals.

The Wallops CDAS is a tenant on the National Aeronautics and Space Administration (NASA) Wallops Flight Facility (WFF) 2,230-acre Main Base. The NASA WFF Main Base is located on the eastern shore of Virginia, and is bounded on the east by Chincoteague Bay and its bordering marshlands and creeks, on the north and west by Little Mosquito Creek, and on the south and southeast by Virginia State Highway 175. The 29-acre Wallops CDAS is located north of Runway 10-28, east of Runway 17-35, and west of Runway 4-22 at NASA WFF airfield. The Wallops CDAS unnamed access road originates on the north side of Highway 175 and provides vehicle access to the Wallops CDAS.

### **Description of Proposed and Alternative Actions**

NESDIS proposes to improve vehicular access to the Wallops CDAS and improve highway safety of Wallops CDAS personnel and visitors by constructing turnout lanes from Virginia State Highway 175 to the access road between September 2004 and April 2005. Currently, access to the Wallops CDAS from the west is by way of a jug handle lane that carries traffic off of Highway 175, then back around to the north to a point where it intersects Highway 175 directly across from the access road entrance. Vehicles must stop at a stop sign south of Highway 175, then cross Highway 175 two traffic lanes to access the Wallops CDAS access road. Motorists routinely either do not recognize the presence of the jug handle lane or they choose to avoid the jug handle lane and turn left onto the Wallops CDAS access road directly from the eastbound lane of Highway 175. Westbound traffic accesses the Wallops CDAS unnamed access road by way of a short turnout lane on the right side of Highway 175. Additionally, a taper lane will be constructed at the entrance of an unnamed access road that originates approximately 75 feet (ft) west of the Wallops CDAS access road and provides access to the nearby town of Chincoteague water supply well field located on NASA WFF property. Specifically, to implement the road improvement projects, NOAA would:

- Remove the existing jug handle lane pavement and road bed

- Widen approximately 1,100 ft of Highway 175 to accommodate a left turn in the center of the roadway
- Widen approximately 120 ft of the westbound lane of Highway 175 and approximately 190 ft of the existing right turn lane onto the Wallops CDAS access road
- Create a new 80 ft long right turn taper from Highway 175 onto the unnamed Chincoteague well field access road

The existing 50 ft wide Virginia Department of Transportation (VDOT) easement passes through the eastern margin of the NASA WFF property. The proposed road improvements would require that additional VDOT easement be obtained from NASA, increasing the easement from 50 ft wide to 90 ft wide. As required by federal law, the alternative of taking no action is also examined in this Environmental Assessment (EA). Under the no-action alternative, NESDIS would not construct the needed vehicular access improvements to the Wallops CDAS.

### **Environmental Consequences and Mitigation**

Implementation of the Highway 175 road improvements proposed by NESDIS would cause minimal physical change in the environment and are consistent with similar improvements that the VDOT recommends for the local transportation system. VDOT requires that NOAA coordinate with the VDOT Accomack Residency on the project design and work zone safety. Construction of the road improvements would temporarily increase vehicle traffic, noise, and emissions of air pollutants from exhaust and dust particles during the construction period. No long-term impacts will result from implementation of the proposed action. Highway safety would increase as vehicles would only need to cross one lane of traffic to gain entry onto the Wallops CDAS access road rather than two traffic lanes, as occurs when utilizing the jug handle lane. Traffic congestion would decrease at the intersection as vehicles entering the Wallops CDAS access road would wait in the dedicated left turn lane rather than in the eastbound travel lane where they may obstruct traffic flow. Construction related traffic delays would be minimized by restricting the construction project to the period of time between mid-September 2004 and mid-April 2005, thereby avoiding the height of the local tourism season. Additionally, during construction lane closures would avoid normal morning and evening commuting periods. Construction expenditures by NESDIS would represent a modest beneficial impact to the local economy. No long-term increase in employment at the Wallops CDAS or the NASA WFF is expected to result. Socioeconomic impacts would be insignificant. The census tract containing the Wallops CDAS and NASA WFF has lower per capita income, a lower unemployment rate, a lower percentage of persons living in poverty, and a higher percentage of minority persons than Accomack County as a whole. However, disproportionately high and adverse environmental effects on minority or low-income communities would not result.

Installation of the road improvements would not significantly affect ecological or natural resources. Based on consultations with the Virginia Department of Conservation and Recreation (VDNR), Virginia Department of Game and Inland Fisheries (VDGIF), and the U.S. Fish and

Wildlife Service (USFWS), no adverse effects would result on protected species or critical wildlife habitat. The proposed construction activities would not occur in wetlands subject to federal jurisdiction or within the 100-year floodplain. Farmland and designated wild and scenic rivers are not present at or near the Wallops CDAS and would not be affected. The proposed road improvements would not create hazardous environmental conditions.

None of the existing structures at the Wallops CDAS are over 50 years of age and there are no NASA structures of historic significance within the area of potential effect (APE) of the proposed road improvements. There are no places listed on the National Register of Historic Places (NRHP) at the Wallops CDAS or the proposed construction area within the VDOT Highway 175 easement. The existing VDOT 50 ft easement is located in an area of moderate prehistoric and high historic archaeological sensitivity. As required by the Virginia Department of Historic Resources (VDHR), NOAA performed a Phase 1 archaeological survey of unpaved portions of the proposed road improvements construction area. Results of the survey indicate that no portion of the proposed road improvement construction area is eligible for the NRHP. The VDHR concurred with this finding in a letter to NOAA dated July 13, 2004. Archaeological resource awareness training would be performed to inform the construction engineers and contractors of the potential presence of prehistoric and historic artifacts in the project area, and of the necessary procedures to be taken if artifacts are unearthed. Additionally, if potentially significant artifacts are uncovered during construction activities, construction activities that could harm the find would be suspended and the NASA Facility Historic Preservation Officer and the VDHR would be notified to assess the significance of the find.

Under the no-action alternative, NESDIS would not construct the needed road improvements that would serve the Wallops CDAS. The proposed vehicle access improvements and highway safety benefits would not be achieved and the government would fail to capitalize on available funding. For these reasons, the no-action alternative has been rejected by NESDIS.

## **Public Involvement**

A Draft EA was prepared in conformance with procedural requirements for implementing the National Environmental Policy Act (NEPA) contained in 40 CFR Parts 1500–1508 and NOAA Administrative Order 216-6. The Draft EA was distributed to interested members of the public and government agencies for review and comment on April 2, 2004. A legal notice announcing the availability of the Draft EA was published in the *Eastern Shore News* on April 3, 2004. NESDIS accepted comments on the Draft EA until May 3, 2004, a period of 31 days. All comment letters received during the official comment period are reprinted in Section 5 of this Final EA. Official responses to comments contained in those letters are also included in Section 5 of this Final EA.

## **Findings**

Implementation of either the proposed action or no-action alternative would not result in significant environmental effects. Therefore, an environmental impact statement (EIS) is not required.

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## ABBREVIATIONS AND ACRONYMS

ACE	Advance Composition Explorer
APE	area of potential effect
CAA	Clear Air Act
CAAA	Clean Air Act Amendments
CBLAP	Chesapeake Bay Local Assistance Program
CDAS	Command and Data Acquisition Station
CEQ	Council on Environmental Quality
CFR	<i>Code of Federal Regulations</i>
ChA	Chincoteague silt loam
CO	carbon monoxide
CZMA	Coastal Zone Management Act
dBA	A-weighted decibel(s)
°F	degrees Fahrenheit
DEQ	Department of Environmental Quality
E1UBL	estuarine-subtidal, unconsolidated bottom, subtidal
E2EMIP	estuarine-intertidal emergent-persistent
E2SSIP	estuarine-intertidal scrub-shrub broad-leaved deciduous, irregularly flooded
EA	Environmental Assessment
EIS	Environmental Impact Statement
E.O.	Executive Order
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
ft	foot, feet
FMP	Facility Master Plan
GOES	Geostationary Operational Environmental Satellite(s)
ICBO	International Conference of Building Officials
METEOSAT	Geosynchronous Meteorology Satellite Number 7
mi	mile(s)
MoD	Molena loamy sand
MSG	METEOSAT Second Generation
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act
NESDIS	National Environmental Satellite, Data, and Information Service
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NO <sub>x</sub>	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conversation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O <sub>3</sub>	ozone

## ABBREVIATIONS AND ACRONYMS (CONCLUDED)

Pb	lead
PM	particulate matter
POES	Polar-orbiting Operational Environmental Satellite(s)
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxides
sq mi	square mile(s)
UpD	Udorthent and Udipsamment soils
U.S.	United States
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VAC	<i>Virginia Administrative Code</i>
VCP	Virginia Coastal Resources Management Program
VDCR	Virginia Department of Conservation and Recreation
VDGIF	Virginia Department of Game and Inland Fisheries
VDH	Virginia Department of Health
VDHR	Virginia Department of Historic Resources
VDOT	Virginia Department of Transportation
VESCH	Virginia Erosion and Sediment Control Handbook
VESCL&R	Virginia Erosion and Sediment Control Law, Regulations and Certification Regulations
VOC	volatile organic compound
VPDES	Virginia Pollutant Discharge Elimination System
VSWML&R	Virginia Stormwater Management Law and Virginia Stormwater Management Regulations
WFF	Wallops Flight Facility

## 1 INTRODUCTION

The National Environmental Satellite, Data, and Information Service (NESDIS) is part of the National Oceanic and Atmospheric Administration (NOAA) of the United States (U.S.) Department of Commerce. NESDIS operates Geostationary Operational Environmental Satellites (GOES) and Polar-orbiting Operational Environmental Satellites (POES), which collect information on atmospheric, oceanic, and terrestrial environmental conditions. Data from these satellites are distributed to many government, industry, and private organizations. These organizations use the data to prepare short-term and long-range meteorological forecasts, monitor important environmental parameters, provide information critical to aviation and maritime safety, aid search and rescue missions, and assist in the national defense and security. Examples of information collected by NESDIS satellites include: tracking the movement of storms, volcanic ash, and icebergs; measuring cloud cover; measuring temperature profiles in the atmosphere and the temperature of the ocean surface; collecting infrared and visual information; and measuring atmospheric ozone levels.

The Wallops Command and Data Acquisition Station (CDAS), operated by NESDIS, obtains data from satellites via radio downlinks and controls satellites via transmission of radio commands. The Wallops CDAS supports the Geosynchronous Meteorology Satellite (METEOSAT) Number 7, METEOSAT Second Generation (MSG), and Advance Composition Explorer (ACE). The Wallops CDAS provides a critical link to send control messages to those satellites and download data collected by the satellites. The 29-acre Wallops CDAS is a tenant on the National Aeronautics and Space Administration (NASA) Wallops Flight Facility (WFF) 2,230-acre Main Base. NASA served as a cooperating agency in the preparation of this Environmental Assessment (EA) and provided valuable data on the WFF's natural environmental resources, cultural resources, potable water and sanitary sewerage utilities, and subsurface contaminant characterization studies (see NASA and NOAA letters in Appendix A).

NESDIS proposes to implement capital improvements to increase the efficiency and technical sophistication of their operations and to modernize aging facilities so that they comply with current building codes. Proposed improvements include upgrades to infrastructure and replacement of obsolete facilities.

This EA examines the potential changes in the human and natural environments that could result from the proposed improvements to the intersection of State Highway 175 and the Wallops CDAS access road. This EA complies with federal legal requirements for implementing the National Environmental Policy Act (NEPA) set forth in:

- Title 40 *Code of Federal Regulations* (CFR) Parts 1500–1508
- NOAA Administrative Order 216-6, *Environmental Review Procedures for Implementing the National Environmental Policy Act*
- NASA Procedural Requirements 8580.1, *Implementing the National Environmental Policy Act and Executive Order 12114* (NASA, 2001)

Based on the findings of this EA, NOAA will decide (1) to issue a Finding of No Significant Impact (FONSI), or (2) to conduct additional environmental studies and prepare an Environmental Impact Statement (EIS).

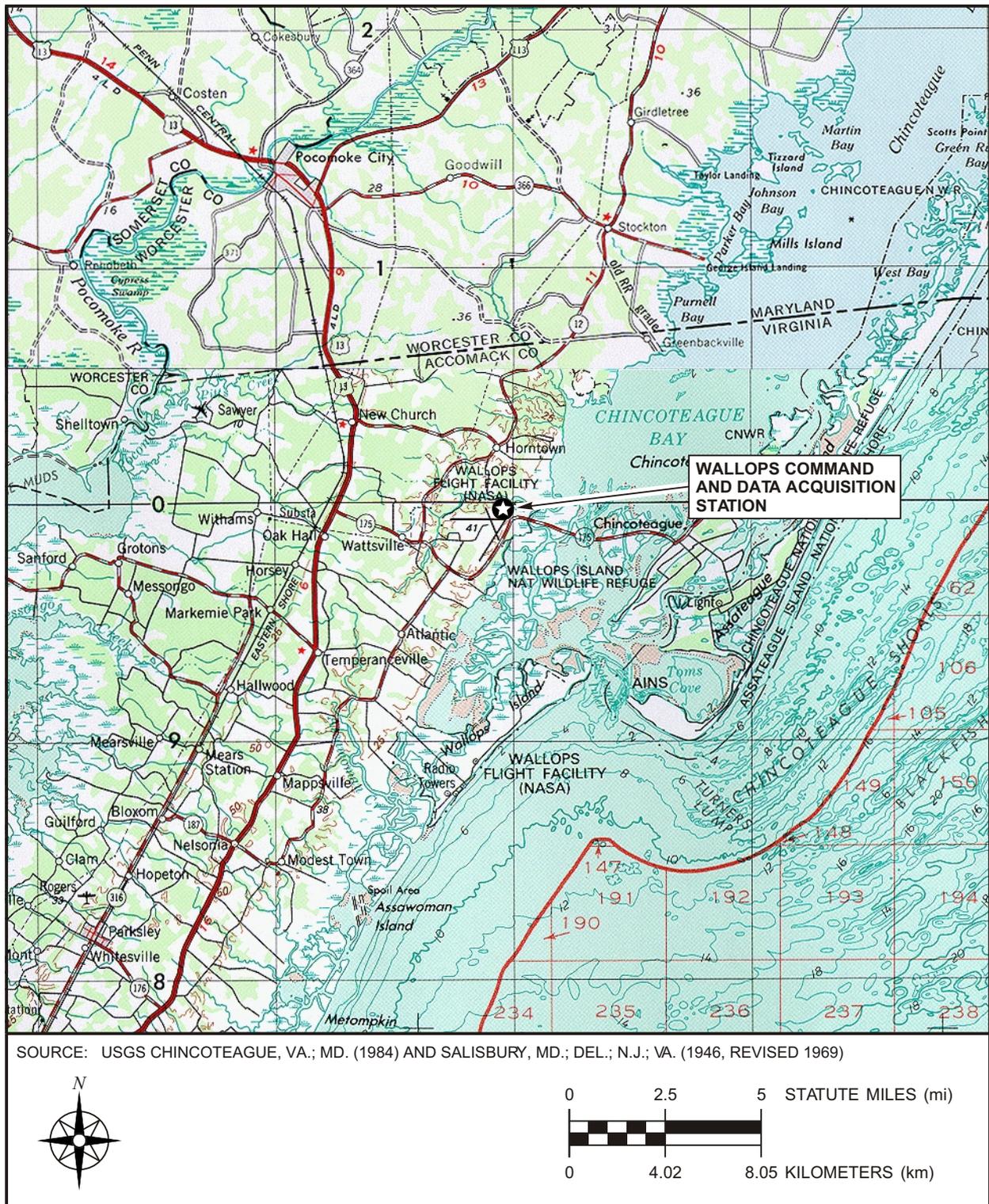
## 2 PURPOSE AND NEED

The existing Wallops CDAS serves several important missions—communications and control for GOES and POES satellite programs and support for scientific activities undertaken by U.S. scientific organizations. The Wallops CDAS provides a primary communications link for a number of satellites operated by the U.S. government. In this role, the Wallops CDAS transmits radio messages containing operational instructions for the satellites and receives data collected by the satellites. These satellites contain numerous sensors that collect tremendous amounts of data on atmospheric, oceanic, and geophysical conditions throughout the world. The satellites have limited ability to store data on board, necessitating the periodic downloading of data to ground antennas. The Wallops CDAS provides critical services in support of the existing POES and GOES programs. It is expected that the Wallops CDAS will also support numerous other satellite systems and will continue to be a focal point for NOAA satellite operations (NOAA, 2004).

The Wallops CDAS was built in 1965 initially on 10 acres of land leased from NASA Wallops Station (see Figures 1[a] and 1[b]). The Wallops CDAS became operational in January 1966. With the launch of the GOES-1 satellite in 1975, the Wallops CDAS became an integral part of NOAA satellite operations, providing innovative operational and system modifications that enhanced and insured continuous, reliable data throughput (NOAA, 2004).

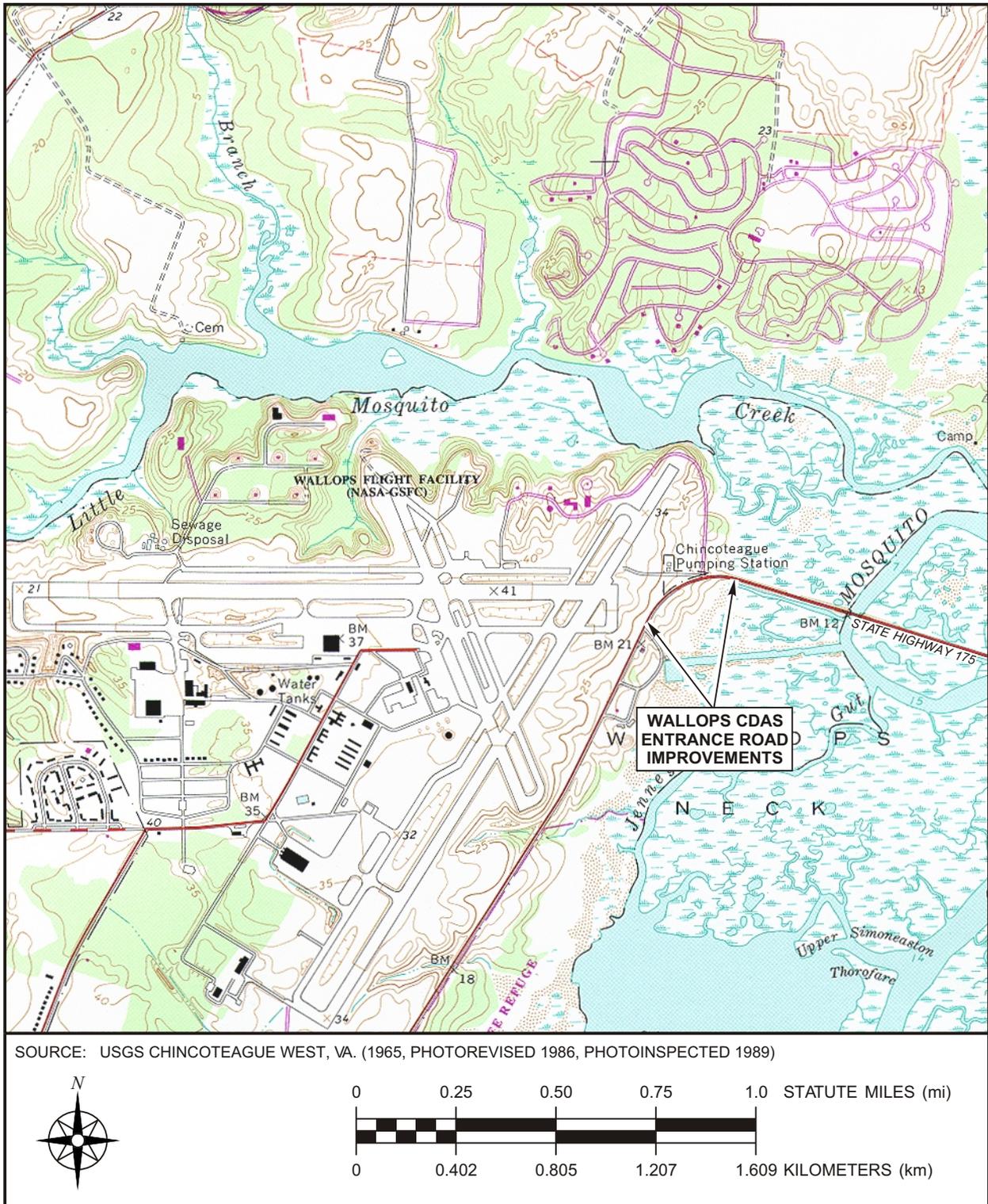
NESDIS recently conducted a comprehensive planning effort for what is now the 29-acre Wallops CDAS to assess the long-term potential for continued operation and future development of the Wallops CDAS, including preparation of a Facility Master Plan (FMP). The Facility Master Plan envisions the Wallops CDAS as a modern, well-constructed physical plant employing state-of-the-art technology in support of the vital NESDIS data acquisition mission. To achieve this vision, rehabilitation of existing facilities and construction of new facilities will be required over the next 15 years. The following development goals are paramount to the Wallops CDAS future success:

- Increase operational and functional efficiency
- Maintain the long-term viability of the station
- Improve the quality of life for all station employees and visitors
- Capitalize on all available funding
- Promote the station as an attractive place for new missions



(a) EXISTING FACILITIES — 1:250,000 SCALE

FIGURE 1 SITE LOCATION MAP — WALLOPS CDAS, VIRGINIA



(b) EXISTING AND PROPOSED FACILITIES — 1:24,000 SCALE

FIGURE 1 SITE LOCATION MAP — PROPOSED ROAD IMPROVEMENTS AT ENTRANCE TO WALLOPS CDAS, VIRGINIA

The proposed Virginia State Highway 175 improvements would facilitate the successful accomplishment of these goals by:

- Providing dedicated turn lanes facilitating access to the Wallops CDAS from both the eastbound and westbound travel lanes of Highway 175
- Removing the obsolete jug handle lane from the intersection of Highway 175 and the Wallops CDAS access road
- Increasing motorists' line of sight through the curve via clearing brush and routine mowing grass at the intersection of Highway 175 and the Wallops CDAS access road
- Improving the flow of traffic on the Wallops CDAS access road and Highway 175
- Improving motorists' safety at the intersection of Highway 175 and the Wallops CDAS access road

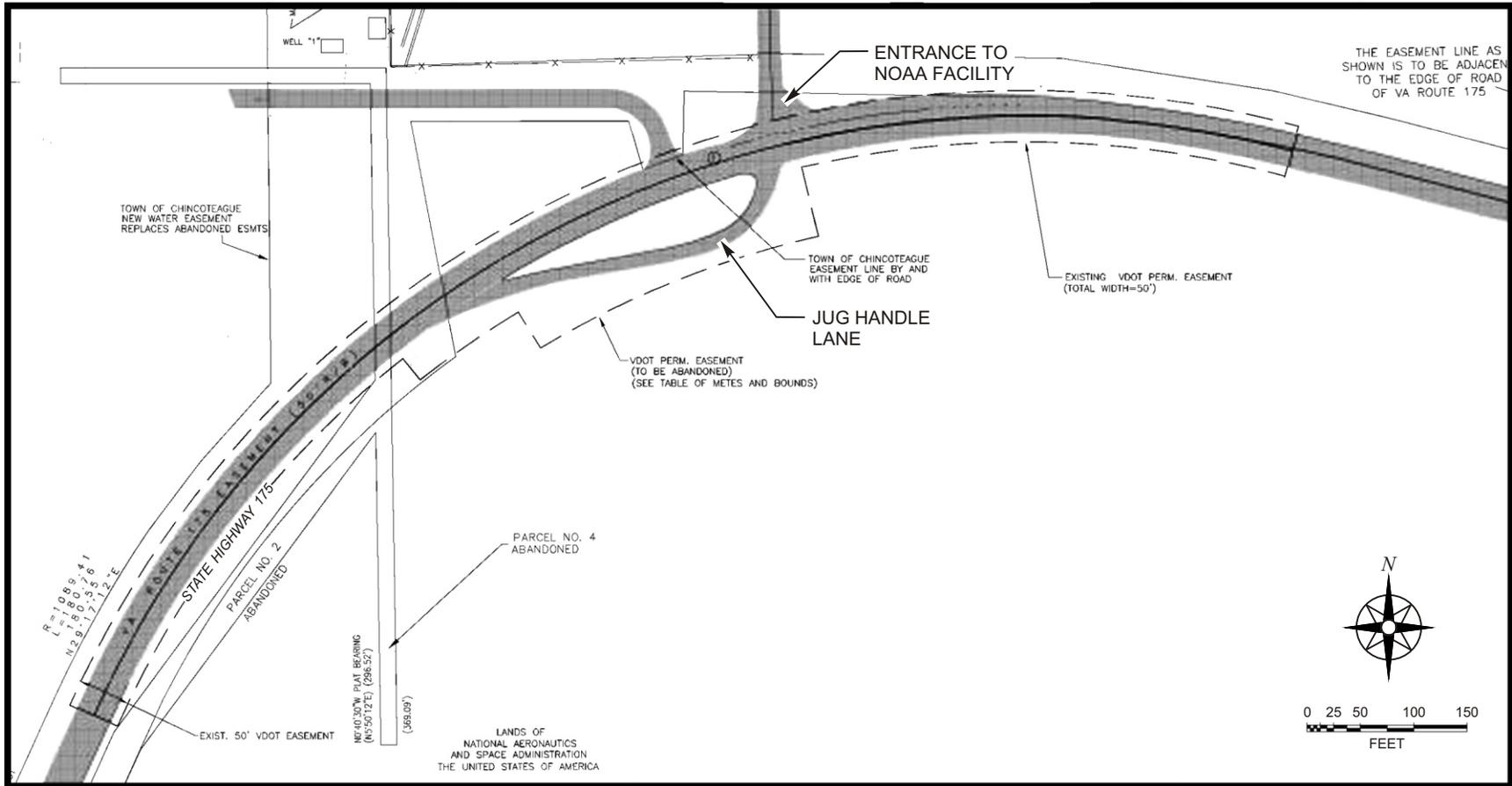
### 3 PROPOSED ACTION AND ALTERNATIVE

#### 3.1 Proposed Action: Construction of Turnout Lanes from Virginia State Highway 175 onto the Wallops CDAS Access Road

Access to the Wallops CDAS is by way of Virginia State Highway 175, a two-lane highway that also serves as the sole roadway to the town of Chincoteague, located approximately 4 miles (mi) east of the Wallops CDAS. Currently, access to the Wallops CDAS from the west is by way of a jug handle lane that carries traffic south of Highway 175, then back around to the north where it intersects Highway 175 directly across from the Wallops CDAS access road (see Figure 2[a]). Vehicles using the jug handle lane must stop at a stop sign south of Highway 175, then cross two traffic lanes of Highway 175 to access the Wallops CDAS access road. Motorists routinely either do not recognize the presence of the jug handle lane or they choose to avoid the jug handle lane and turn left into the Wallops CDAS access road directly from the eastbound lane of Highway 175. Westbound traffic access the Wallops CDAS access road by way of a short turnout lane on the right side of Highway 175. Additionally, a taper lane will be constructed at the entrance of an unnamed road that intersects Highway 175 approximately 75 feet (ft) west of the Wallops CDAS access road and provides access to the nearby Town of Chincoteague water supply well field on NASA WFF property. NESDIS proposes to implement the following road improvements at the intersection of Virginia State Highway 175 and the Wallops CDAS access road entrance by the end of fiscal year 2004:

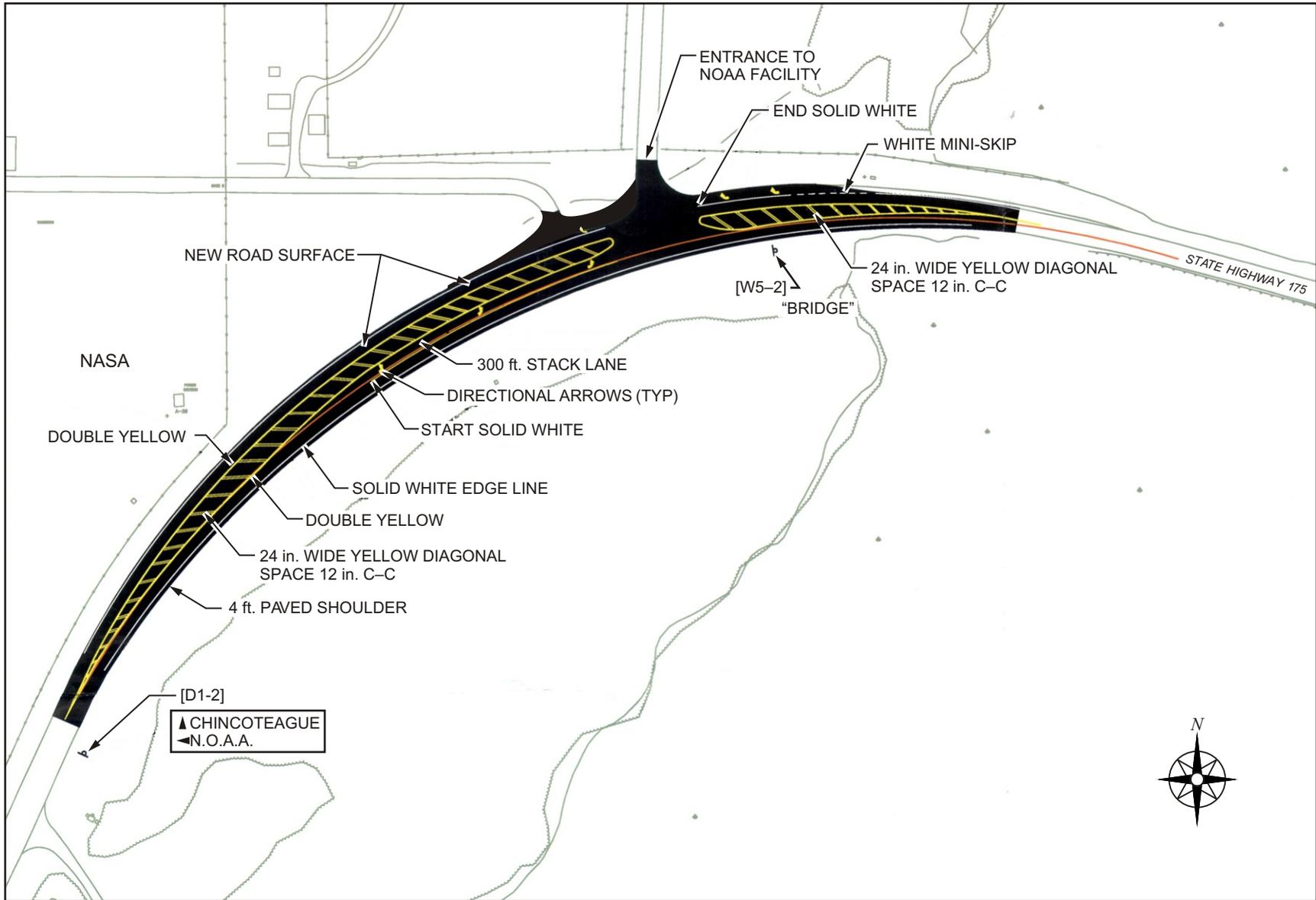
- Remove the existing jug handle pavement and road bed
- Widen approximately 1,100 ft of Highway 175 to accommodate a left turn in the center of the roadway
- Widen approximately 120 ft of the westbound lane of Highway 175 and approximately 190 ft of the existing right turn lane onto the Wallops CDAS access road
- Create a new 80 ft long right taper lane from Highway 175 onto the unnamed Chincoteague well field access road

Figure 2(b) is a detailed map showing the proposed roadway improvements. The existing 50 ft wide Virginia Department of Transportation (VDOT) easement passes through the eastern margin of the NASA WFF property. The proposed roadway improvements would require that additional VDOT easement be obtained from NASA, increasing the easement from 50 ft wide to 90 ft wide. These improvements would be constructed between September 2004 and April 2005 (i.e., September 2004 through April 2005).



SOURCE: NORFOLK DISTRICT CORPS OF ENGINEERS, NORFOLK, VIRGINIA

FIGURE 2(a) EXISTING ENTRANCE ROAD INTERSECTION AT WALLOPS CDAS, VIRGINIA



SOURCE: U.S. CORP OF ENGINEERS, NORFOLK, VIRGINIA DISTRICT

FIGURE 2(b) PROPOSED ENTRANCE ROAD IMPROVEMENTS AT WALLOPS CDAS, VIRGINIA

### **3.2 No-action Alternative**

Under the no-action alternative, NESDIS would not construct the needed new infrastructure at the Wallops CDAS. The proposed long-term improvements to the intersection of the Wallops CDAS access road and the NASA well field access road with Highway 175 would not occur. The expected benefits of improved traffic flow and increased traffic safety would not be achieved. The government would fail to capitalize on available funding. For these reasons, the no-action alternative has been rejected by NESDIS.

## **4 AFFECTED ENVIRONMENT AND CONSEQUENCES**

### **4.1 Land Use and Zoning**

#### **4.1.1 Existing Environment**

The 29-acre Wallops CDAS is located on the northeast portion of the NASA WFF 2,230-acre Main Base in Accomack County, Virginia. During World War II, the U.S. Navy acquired the land that would eventually become NASA Wallops Flight Facility. Initially, the facility was named the Chincoteague Naval Auxiliary Air Station and used as a naval airfield. NASA acquired the property in 1959, and changed the name of the facility to the Wallops Flight Center in 1974. The Center was consolidated with Goddard Space Flight Center and renamed Wallops Flight Facility in 1984. The mission of the NASA WFF is to support suborbital and orbital tracking projects, space technology development, space experiments, and missile and rocket research and development, and, most recently, Shuttle-based and other small orbital projects (NASA, 1999).

Since its beginning in 1966, the Wallops CDAS has served as a command and data acquisition station supporting satellite operations of the U.S. government. From the start, the mission of the Wallops CDAS has been supporting the operation of geosynchronous and polar orbiting earth-observation satellites. The antennas, electronic equipment, and support facilities at the Wallops CDAS provide radio communications with satellites recording environmental conditions on earth. Sensors on the satellites collect information on atmospheric, oceanic, and terrestrial parameters. The data collected by the satellites are stored on board the spacecraft for a portion of an orbit and then transmitted down to the Wallops CDAS when the satellites passes over the station. In addition to receiving radio transmissions from the satellites, the Wallops CDAS also sends radio signals that direct operation of the propulsion and sensor systems aboard the satellites.

Accomack County is located on the eastern shore of Virginia, bounded by the Chesapeake Bay on the west, and the Atlantic Ocean on the east. Accomack County main industries are farming, fishing, construction, manufacturing, government services, and tourism. Land uses in the vicinity of the Wallops CDAS and NASA WFF include rural farmland and residential properties. The Virginia State Highway 175 provides access to the NASA WFF and Wallops CDAS from its western terminus at Virginia State Highway 13. Chincoteague is a historic coastal community located approximately 5 mi east of the NASA WFF and Wallops CDAS, separated by Chincoteague Bay. Little Mosquito Creek borders the Wallops CDAS and the NASA WFF Main Base to the north and west. Extensive tidal marshlands border the margins of Little Mosquito Creek and Chincoteague Bay.

Accomack County Department of Building, Planning and Zoning does not apply zoning classifications to federal facilities (Fluhart, 2004).

The *Public Buildings Amendments of 1988, Public Law 100-678* (U.S. Congress, 1988) requires federal officials to consider local zoning and land-use regulations, consult with local officials, and provide plans to local officials for a 30-day courtesy review during planning for construction of government facilities. The law also requires that the federal government permit normal building inspections by local officials. The federal government cannot be obligated to take any action by local officials.

#### **4.1.2 Environmental Consequences—Proposed Action**

Implementation of the proposed actions would support the continued operation of the Wallops CDAS and achievement of its mission. Construction of the road improvements would occur along the eastern margin of the NASA property and would require increasing the existing Highway 175 VDOT easement from 50 ft to 90 ft. An excavation permit would be required from the NASA Environmental Office and permits for construction would be required from VDOT prior to the start of construction at the site. No permits would be required from Accomack County to implement the proposed actions. The Town of Chincoteague was informed of the proposed action (see SRI International letter to Town of Chincoteague in Appendix A). Road improvement design plans would be approved by the VDOT prior to construction.

No change in the nature or type of activities conducted at the Wallops CDAS and NASA WFF would result and no significant impacts on existing or planned uses in the vicinity of the road improvements would result.

#### **4.1.3 Environmental Consequences—No-action Alternative**

Under the no-action alternative, the proposed road improvements would not be implemented. No effects on land use would result.

#### **4.1.4 Mitigation**

NESDIS would provide road design plans to Accomack County for a 30-day courtesy review and allow normal inspections during the construction period as required by the *Public Buildings Amendments of 1988, Public Law 100-678*.

### **4.2 Noise**

#### **4.2.1 Affected Environment**

The Wallops CDAS access road entrance is located adjacent to an active airfield. Noise sources associated with the Wallops CDAS and NASA WFF include aircraft traffic and vehicular traffic on NASA and NOAA facility roads and Virginia State Highway 175.

Both military and non-military aircraft utilize the NASA WFF airfield, however, on an infrequent basis. Some of the military aircraft are capable of creating sonic booms but are permitted to do so only over the Atlantic Ocean. Aircraft noise levels recorded at the airfield for both takeoff and landing range from 72 A-weighted decibels (dBA) to 105 dBA (NASA, 1999).

There are no noise sensitive facilities, such as residences, schools, or hospitals, in the vicinity of the area of proposed road improvements. Wallops Island National Wildlife Refuge is located about 200 ft from the east end of the proposed road improvement area.

#### **4.2.2 Environmental Consequences—Proposed Action**

Construction of the proposed road improvements would require use of heavy machinery and equipment (e.g., excavators, loaders, backhoes, compactors, compressors, and haul trucks). Use of that machinery would generate intermittent loud noises typical of construction sites. Typically, the loudest noises would result from use of tractor equipment that may generate noise levels up to 98 dBA at a distance of 50 ft (Bolt, Beranek, and Newman, 1971). Those noises would occur intermittently at the construction site. Construction activities would occur primarily during normal working hours, but some construction activities may occur during early morning hours. Construction related noise would temporarily add to existing background noise levels generated by aviation and surface vehicles.

Vehicle traffic noise would increase with the addition of construction vehicles on Highway 175 during the construction activities, but would not be expected to significantly affect traffic noise levels. After construction activities are completed, noise levels would return to current levels.

No long-term increase in noise would result, and no negative noise impacts are expected to effect the natural environment of the Wallops Island National Wildlife Refuge.

#### **4.2.3 Environmental Consequences—No-action Alternative**

Under this alternative, no construction would be undertaken and no new noise would be generated.

#### **4.2.4 Mitigation**

No mitigation would be required.

### **4.3 Transportation**

#### **4.3.1 Affected Environment**

Virginia State Highway 175 provides access to the NASA WFF and Wallops CDAS from its western terminus at Virginia State Highway 13, and continues eastward to the town of Chincoteague. An asphalt paved two-lane access road provides main access to the Wallops CDAS from Highway 175, terminating at the Operations Building parking area. Single lane

paved roads continue from the parking area to other Wallops CDAS antennas and facilities. The access road from Highway 175 has no other outlet. Access to the Wallops CDAS facility is controlled by a staffed security gate to prevent unauthorized vehicles and persons from entering the Wallops CDAS. Traffic on the access road is limited to Wallops CDAS employees, authorized visitors, and delivery vehicles.

The normal morning rush hour traffic occurs on westbound Highway 175 past the Wallops CDAS intersection between 7:30 A.M. and 8:30 A.M. The normal evening rush hour traffic occurs on eastbound Highway 175 between 4:30 P.M. and 5:30 P.M.

VDOT conducts daily traffic counts on Highway 175 at a location approximately 0.75 mi east of its intersection with Highway 13, the primary north/south highway on the Delmarva Peninsula, and about 5 mi west of the Wallops CDAS (VDOT, 2004). Table 1 provides VDOT seasonal average maximum and minimum daily vehicle trip totals for vehicles traveling both directions on Highway 175. The spring and summer months have been averaged together since Chincoteague’s primary tourism season runs from the Memorial Day holiday through the end of the Labor Day holiday.

**Table 1**

**Seasonal Average Maximum and Minimum Daily Vehicle Trips**  
**State Highway 175, 5 mi West of Wallops CDAS**

	<u>Minimum</u>	<u>Maximum</u>
Winter	3,325	8,152
Spring/Summer	8,172	11,251
Fall	5,009	8,576

**4.3.2 Environmental Consequences—Proposed Action**

VDOT was consulted to solicit their comments and recommendations of the proposed action. VDOT responded that their review of the proposed action does not indicate any negative impacts to the transportation system and that the proposed action is consistent with similar improvements that they recommend for the local transportation system (see VDOT letter in Appendix A). Additionally, VDOT requires project coordination with the VDOT Accomack Residency to ensure that no conflicts are created due to VDOT requirements regarding geometric design standards, sight distance, transition lengths, pavement designs, paving markings, and work zone safety. Given that NOAA coordinates with VDOT on the project, VDOT has no objections to the proposed road improvements.

Implementation of the proposed road improvements would require controlling the flow of traffic through the work zone so that construction operations can occur as necessary. Traffic controls implemented in the work zone may include a reduced speed limit, placement of barricades/cones, and lane closures with contractor personnel directing traffic and the use of pilot

vehicles. Temporary unimproved gravel road surfaces and rough road surfaces would also be expected to slow vehicle speed through the work area.

The average maximum daily number of vehicle trips on Highway 175 increases by 31 percent to 38 percent during the town of Chincoteague primary tourist season (i.e., spring through summer) compared to the off season. Disruption of the flow of traffic on Highway 175 could delay the vacation travelers who visit the town of Chincoteague and also delay the Chincoteague-based work force that commutes off of the island each work day. Additionally, construction related traffic delays may have an economic impact by adversely affecting travel times to and from businesses (National Cooperative Highway Research Program [NCHRP], 2000).

Standard road construction traffic management practices limit flagged one lane traffic to the hours between 6:00 A.M. and 6:00 P.M. Two-way traffic is restored daily, and on weekends beginning at 3:00 P.M. Implementation of these standard traffic management practices would still have a negative impact on the commuting traffic and vacation traffic as it would allow lane closure during normal workforce commuting periods and during Chincoteague's tourism season. To minimize traffic delays to the Chincoteague-based work force and vacation travelers visiting the Chincoteague area, road construction would occur in the off season, which starts after the Labor Day holiday (September 6, 2004) and ends in mid-April 2005 when the Chincoteague Easter Decoy and Art Festival and Auction occurs. During that period, lane closures would be restricted to the hours between 8:30 A.M. and 4:00 P.M. to minimize construction related traffic delays to the Wallops area commuting work force.

During road construction, supply trucks, construction vehicles, and workers' vehicles would use Highway 175 to access the project site. The amount of construction-related traffic generated would vary slightly during implementation of the infrastructure improvements. In total, up to several dozen trips per day would be generated during this period by commute vehicles used by construction workers, construction vehicles, and trucks delivering supplies and equipment. Vehicle trips during construction would not significantly affect traffic levels on Highway 175.

Implementation of the proposed improvements would not change the number of workers employed at the Wallops CDAS and no change in long-term traffic generation would result. Traffic flow through the intersection and highway safety at the intersection would be improved. No adverse effects on operation of local roads would result.

#### **4.3.3 Environmental Consequences—No-action Alternative**

Under the no-action alternative, no changes in existing roads or levels of traffic would result.

#### **4.3.4 Mitigation**

To minimize traffic delays to both the Wallops area commuting work force and vacation travelers visiting the Chincoteague area, the road construction project would be started in

mid-September 2004 and be completed before mid-April 2005. Additionally, during that time lane closures would be restricted to the hours between 8:30 A.M. and 4:00 P.M. to minimize construction related traffic delays to the Wallops area commuting work force.

NOAA would coordinate with the VDOT Accomack Residency on the project design and implementation to ensure that work is consistent with current VDOT design and work zone safety requirements.

#### **4.4 Socioeconomic Impacts and Environmental Justice**

##### **4.4.1 Affected Environment**

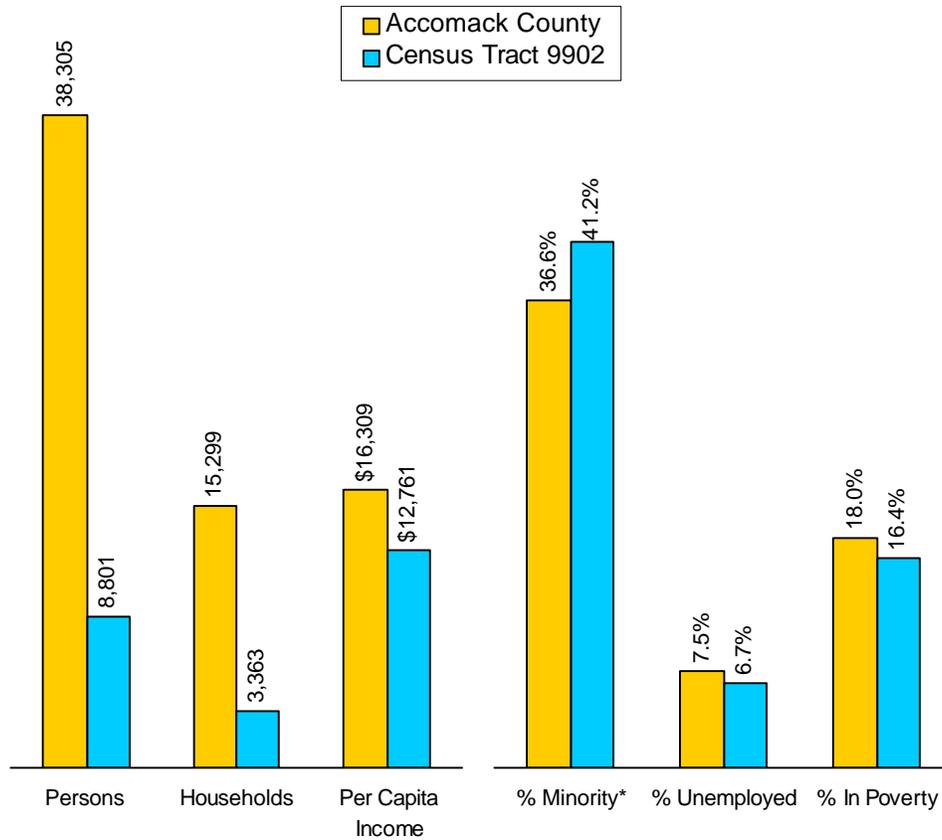
Under Executive Order (E.O.) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations*, federal agencies must identify and address, as appropriate, disproportionately high and adverse environmental or human health effects on minority populations and low-income populations. Minority communities and low-income communities must also have access to public information on matters related to human health and the environment (President, 1994).

The proposed road improvements project area is located in Census Tract 9902, which covers about 111 square miles (sq mi) or 8 percent of Accomack County total land area of 1,310 sq mi (U.S. Census Bureau, 2004b). Census data from 2000 for Census Tract 9902 and for Accomack County as a whole are presented in Chart 1.

As shown in Chart 1, the census tract containing the area of the proposed road improvements contains about 23 percent of the total population of Accomack County. The percentage of minority population within Census Tract 9902 is slightly higher than that of Accomack County as a whole. The rate of unemployment is 6.7 percent, which is below the rate of unemployment in Accomack County as a whole. The average per capita income for people within the tract is \$12,761, which is roughly 22 percent less than the average per capita income in Accomack County as a whole. However, a smaller percentage of the population is in poverty than in the county as a whole. Overall, the census tract containing the NASA WFF and Wallops CDAS has a slightly higher percentage of minorities and lower per capita income than Accomack County as a whole; however, the rates of unemployment and poverty are lower than in the county as a whole (U.S. Census Bureau, 2004a).

Chart 1

**Census Data for Census Tract 9902 and Accomack County, Virginia**



\*Minority = persons of Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and other Pacific Islander, Hispanic or Latino, or other (non-white) race.

**4.4.2 Environmental Consequences—Proposed Action**

Implementation of any of the proposed action would generate a series of stimuli for the local economy due to construction-period expenditures for equipment, materials, supplies, and so on, and employment of workers by the construction contractors. These stimuli would continue over a period of several months. Indirect economic benefits would also occur due to the multiplier effect as construction-generated revenues are re-spent by suppliers and workers. This short-term effect would be beneficial. Construction expenditures by NESDIS would represent far less than 1 percent of the annual domestic product of Accomack County. Thus, the effect of the economic stimulus would be modest.

After construction is complete, VDOT would continue to maintain the roadway. The number of persons employed by VDOT in the Accomack County area would not directly increase. In the

long-term, the improvement of the roadway would not result in direct economic impacts. However, the improvements would reduce the potential for delays to motorists caused by vehicles on Highway 175 waiting to turn into the Wallops CDAS access road. It would also reduce the potential for accidents at this intersection. As a result, modest reduction in traffic congestion may result, benefiting the local economy. Socioeconomic effects would not be significant.

Implementation of any of the proposed road improvements would occur in an area with slightly higher percentage of minority population, lower percentage of persons living in poverty, and lower percentage of unemployed persons. The per capita income of the area is roughly 22 percent less than that of Accomack County as a whole. Construction of the proposed road improvements would not result in dislocation of persons or businesses or emissions of noxious pollutants. Disproportionately high and adverse environmental effects would not result on either minority or low-income populations of the area, or on the population as a whole.

#### **4.4.3 Environmental Consequences—No-action Alternative**

The proposed road improvements would not be implemented and no socioeconomic effects would result.

#### **4.4.4 Mitigation**

No mitigation would be required.

### **4.5 Air Quality**

#### **4.5.1 Affected Environment**

Under the Clean Air Act (CAA) of 1970, the Environmental Protection Agency (EPA) promulgated primary and secondary National Ambient Air Quality Standards (NAAQS) for six “criteria” pollutants: particulate matter (PM), nitrogen oxides (NO<sub>x</sub>), sulfur dioxides (SO<sub>2</sub>), lead (Pb), ozone (O<sub>3</sub>), and carbon monoxide (CO). Following this legislation, the Clean Air Act Amendments (CAAA) of 1990 identified certain areas of the country as being in non-attainment of the NAAQS. Individual states are then required to submit, for federal approval, a State Implementation Plan (SIP). The SIP specifies actions designed to bring nonattainment areas into conformity with federal air quality standards. Virginia’s federally approved SIP is overseen by the Virginia Department of Environmental Quality (DEQ). Applicable state regulations for the Control and Abatement of Air Pollution are outlined in *Virginia Administrative Code* (VAC) 9 VAC 5-50-60 et seq. and 9 VAC 5-40-5600 et seq. The Wallops CDAS is located in Air Quality Control Region 4 and Administrative Region 6. Wallops CDAS is in attainment with NAAQS for all criteria pollutants (NOAA, 2004).

#### **4.5.2 Environmental Consequences—Proposed Action**

Construction of the proposed road improvements would require removal of the existing jug handle road surface, stripping the proposed roadways of existing vegetation, excavating soil, and placement of roadbed material. These activities would expose silt soils to wind erosion, potentially generating moderate amounts of dust. Dust may also be created when vehicles travel over any unimproved surface during construction, and when passing by areas of exposed soil. Dust could also be generated during placement and removal of surcharge materials for final site grading. Areas of exposed soil should be sprayed with water or treated with dust suppressants. Spilled or tracked dirt or other materials and dried sediments resulting from soil erosion should be promptly removed from paved surfaces. No burning of construction material would be required; therefore, requirements under 9 VAC 5-40-5600 et seq. for controlled burning are not applicable. Provided that these standard construction practices are followed, dust emissions would not be significant. Implementation of the proposed action would not create new sources of air emissions.

#### **4.5.3 Environmental Consequences—No-action Alternative**

No impacts on air quality would occur as a result of the no-action alternative.

#### **4.5.4 Mitigation**

To minimize the amount of dust generated during the road construction, exposed areas of soil would be sprayed with water or treated with dust suppressants. Additionally, spilled or tracked dirt or other materials and dried sediments resulting from soil erosion would be promptly removed from paved surfaces.

### **4.6 Geology and Soils**

#### **4.6.1 Affected Environment**

Wallops CDAS is located in the Atlantic Coastal Plain physiographic province. The area underlying Wallops Flight Facility consists of a thin sequence of marine sediments overlying a much thicker sequence of Cretaceous to Quaternary age (144 million years ago to the present) continental sediment deposits. These 7,000 ft thick sediment layers consist of unconsolidated clay, silt, sand, and gravel (NASA, 1999). Crystalline bedrock underlies these sediments. The Wallops CDAS is located in seismic zone 1, an area subject to minimal hazard from earthquakes (International Conference of Building Officials [ICBO], 1997).

Most of the proposed road improvements would occur in an area with Molena loamy sand (MoD), at 6 to 35 percent slopes. The eastern end of the proposed road improvements would occur on Udorthent and Udipsamment soils (UpD), at 0 to 30 percent slopes and Chincoteague silt loam (ChA), at 0 to 1 percent slopes (Natural Resources Conservation Service [NRCS], 2002, 2004; also see *Soil Survey of Accomack County, Virginia*, excerpts in

Appendix A). MoD soil is classified as very deep and somewhat excessively drained, non-hydric soil. Depth to groundwater is expected to be greater than 6 ft below grade, and risk of corrosion of uncoated steel is low, but high for concrete. UpD-Chincoteague series is described as very deep, very poorly drained soil, and is considered a hydric soil. Depth to groundwater is expected to be less than 6 ft below grade. Risk of corrosion of uncoated steel and of concrete is high. UpD is not a suitable roadbed as it has low soil strength and presents unstable slopes. ChA is a very deep to deep, poorly to somewhat poorly drained soil. This soil may be hydric in part. None of these soil units are considered sources of important mineral resources. There are no quarry operations on either the Wallops CDAS or NASA WFF properties.

#### **4.6.2 Environmental Consequences—Proposed Action**

The proposed road improvements would occur on nearly level terrain. Approximately 0.60 acre of ground disturbance would occur and approximately 0.40 acre of ground would be paved with asphalt (U.S. Army Corps of Engineers [USACE], 2004). VDOT requires that vegetative, erosion, and sediment control practices be constructed and maintained in accordance with the minimum standards and specifications of the *Virginia Erosion and Sediment Control Handbook* (VESCH), 1992 edition. The VESCH establishes minimum design and implementation standards for these practices in an effort to control erosion and sedimentation from land disturbing activities. Further discussion of erosion and sedimentation is presented below in Section 4.7, *Drainage and Water Quality*.

NASA requires that an excavation permit be obtained from the NASA Facilities Management Branch prior to any excavation activities at WFF, and requires implementation of sediment and erosion control measures. To minimize the potential for sedimentation, standard erosion control measures would be implemented at all areas of soil disturbance (i.e., areas stripped of vegetation and pavement). Those measures would include placement of temporary silt fences or hay bales at the boundaries of cleared areas to retain soil, periodic spraying of water on bare soil to reduce dust entrainment, and prompt planting or hydroseeding of bare areas after construction is complete to establish vegetative cover.

Implementation of the proposed action would not affect access to mineral resources. Effects on geologic conditions, soils, and mineral resources would be insignificant.

#### **4.6.3 Environmental Consequences—No-action Alternative**

No new construction activities would result and no effects on geology, soils, or mineral resources would occur as a result of the no-action alternative.

#### **4.6.4 Mitigation**

To minimize the potential for soil erosion, standard erosion control measures would be implemented at all areas of soil disturbance in accordance with the VESCH. Those measures would include placement of temporary silt fences or hay bales at the boundaries of cleared areas

to retain soil, periodic spraying of water on bare soil to reduce dust entrainment, and prompt planting or hydroseeding of bare areas after construction is complete to establish vegetative cover.

NESDIS would obtain an excavation permit from NASA Facilities Management prior to start of excavation activities.

## **4.7 Drainage and Water Quality**

### **4.7.1 Affected Environment**

The Delmarva Peninsula has a temperate climate, characterized by humid summers and mild winters. Prevailing winds are from the south in the summer and from the northwest in the winter. Annual average winds are eight knots. Climatological records kept by the NASA WFF Meteorological Office for 1999 show a maximum monthly precipitation of 6.87 inches occurred in March, and in 1998, a minimum monthly precipitation of 0.82 inch occurred in July. In 1998, a high temperature of 98 degrees Fahrenheit (°F) occurred in August, and in 1999, a low temperature of 13 °F occurred in January (NASA, 1999). Precipitation averages 37 inches per year, spread throughout the year. Normal daily high temperature is 83 °F in the summer months and the normal low is 29 °F in the winter months (NOAA, 2004).

The topography of the area of the proposed road improvements is characterized as relatively flat, gently sloping to the southeast, with elevations ranging from approximately 4 ft mean sea level (MSL) along the eastern end of the project area to approximately 21 ft MSL at the west end of the project area. Stormwater drainage from the roadway and vegetated road shoulders flows east through drainage ditches along the margins of the roadway and discharges onto the broad vegetated upland flats adjacent to Chincoteague Bay. In contrast to natural landscapes, impervious surfaces such as paved roadways do not allow stormwater to seep into the ground. Stormwater accumulates on the road surface and mixes with vehicle pollutants before it runs off into drainage ditches.

Stormwater runoff of construction sites is regulated by both the Virginia DEQ (see Virginia DEQ letter dated January 21, 2004, in Appendix A) and the Virginia Department of Conservation and Recreation (VDCR). The Virginia DEQ implements U.S. EPA National Pollutant Discharge Elimination System (NPDES) Permit Regulations through the Virginia Pollutant Discharge Elimination System (VPDES) program. Effective September 27, 2000, Virginia DEQ incorporated the NPDES Permit Regulations into the VPDES Permit Regulations, requiring construction projects disturbing 1 to 5 acres of land to apply for VPDES permit coverage. A continuous planning provision in the VPDES Permit Regulations requires a permit once the combined total acreage of all projects at a major site reaches the 1-acre threshold, regardless of the size of the individual projects, if the projects are planned for initiation in the same budget year, under the same funding process, and under the same ownership.

Erosion and sediment control, and stormwater management are regulated by Virginia's Erosion and Sediment Control Law (*Code of Virginia* §10.1-567) and 4 VAC 50-30-30 et seq., and Stormwater Management Law (*Code of Virginia* §10.1-603.5). Activities that disturb 10,000 square ft or more of land would be regulated by Virginia Erosion and Sediment Control Law, Regulations and Certification Regulations (VESCL&R) and those that disturb 1 acre or greater would be regulated by Virginia Stormwater Management Law and Virginia Stormwater Management Regulations (VSWML&R). The Virginia Department of Conservation and Recreation assists the Virginia DEQ with the review and approval of sediment and erosion control plans.

The Town of Chincoteague maintains five deep groundwater wells and three shallow groundwater wells on the NASA WFF easement (NASA, 1999). These wells are regulated by the Virginia Department of Health (VDH). Wells numbered 1 and 4 are located approximately 280 ft to 320 ft from the closest point of the proposed road improvements. Well number 3A is located approximately 360 ft south of the western end of the proposed road improvements.

#### **4.7.2 Environmental Consequences—Proposed Action**

Construction of the proposed road improvements would disturb approximately 0.70 acre of ground surface, including approximately 0.19 acre of the deteriorating asphalt of the jug handle lane that will be removed. A portion of the jug handle footprint would be graded and seeded while the remainder would be overlain by a portion of the new roadway. Approximately 0.30 acre of new impervious surface would be placed as road pavement and the remainder of the disturbed project area will be seeded to provide groundcover and reduce stormwater runoff. Due to the increase in impervious surfaces, the amount of storm runoff from the site would increase slightly but not by a significant amount. The proposed road should include design of appropriate surface grades and drainage ditches to carry stormwater runoff to storm sewer inlets and discharge outlets that meet VDOT design requirements. No significant effects on runoff rates or water quality would result.

During implementation of the proposed road improvements, the total area of construction ground disturbance would be approximately 0.70 acre. However, the fiscal year cumulative acreage of ground disturbance of the proposed entrance road improvements combined with the Wallops CDAS proposed sewerage and water main infrastructure improvements equal 1.12 acres. Therefore, a VPDES permit for discharge of storm runoff water from the construction site would be required under 9 VAC 25-180-10 et seq.

Erosion and sediment control, and stormwater management plans should be prepared in compliance with VSWML&R to manage erosion, sedimentation and stormwater runoff at the site during construction. Construction activity should be monitored to ensure strict adherence to erosion and sediment control, and stormwater management practices and compliance with state law. Effects on drainage and water quality would be insignificant.

### **4.7.3 Environmental Consequences—No-action Alternative**

Implementation of this alternative would not result in any ground disturbances. No impacts on drainage patterns, runoff flow rates, or the quality of surface or ground water would result.

### **4.7.4 Mitigation**

To minimize the potential for erosion and sedimentation, standard erosion and sedimentation control measures would be implemented at all areas of soil disturbance in accordance with the VESCH. Those measures would include placement of temporary silt fences or hay bales at the boundaries of cleared areas to retain soil, periodic spraying of water on bare soil to reduce dust entrainment, and prompt planting or hydroseeding of bare areas after construction is complete to establish vegetative cover.

NESDIS would obtain a VPDES stormwater general permit for the construction activities, prepare an erosion and sedimentation control plan, and a stormwater management plan to ensure best management practices and compliance with state law during construction. Construction activity would be monitored to ensure strict adherence to erosion and sediment control, and stormwater management practices and compliance with state law.

The proposed road design would include design features to provide for appropriate surface grades and drainage ditches to carry stormwater runoff to storm sewer inlets and discharge outlets in conformance with VDOT design requirements.

## **4.8 Cultural Resources**

### **4.8.1 Affected Environment**

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consult with the state historic preservation officer prior to taking actions that may affect cultural resources.

The NASA WFF Main Base was historically owned by the Wallop family in 1664. During World War II, the U.S. Navy acquired the property and established the Chincoteague Naval Auxiliary Air Station, operating a naval aviation airfield and testing ordinances (NASA, 1999). NASA acquired the property in 1959, and consolidated its operations with Goddard Space Flight Center in 1984. The mission of the NASA facilities was the support of suborbital and orbital tracking projects, space technology development, space experiments, and missile and rocket research and development, and most recently, Shuttle-based and other small orbital projects.

The original Wallops CDAS facility was developed on 10 acres of land leased from NASA Wallops Station, which had previously been a former golf course. Since its beginning in 1965, the mission of the Wallops CDAS has been to support the operation of both geosynchronous and polar orbiting earth-observation satellites. The antennas, electronic equipment, and support facilities at the Wallops CDAS provide radio communications with satellites observing the earth.

Sensors on the satellites collect information on atmospheric, oceanic, and terrestrial conditions of the earth. NASA completed a cultural resources assessment of the NASA WFF in November 2003 (NASA, 2003). Areas of moderate to high sensitivity for prehistoric and historic archaeological sites are present on the northern and eastern margins of the Wallops CDAS and NASA WFF, adjacent to the marshlands of Little Mosquito Creek and Mosquito Creek. The existing VDOT 50 ft easement is located in an area of moderate prehistoric and high historic archaeological sensitivity. The nearest historic region is Corbin Hall, located approximately 1.75 mi north of the Wallops CDAS across Little Mosquito Creek (National Park Service [NPS], 2003).

None of the existing structures at the Wallops CDAS are over 50 years of age. There are no NASA structures of historic significance within the VDOT 50 ft easement or in the vicinity of the proposed road improvements. There are no places listed on the National Register of Historic Places (NRHP) at the Wallops CDAS and NASA WFF airfield area.

The Virginia Department of Historic Resources (VDHR) was consulted to verify that there are no places listed on the NRHP within the project area. The VDHR responded that there are no archaeological sites recorded within the project's area of potential effects; however, the area has a moderate to high potential to contain significant prehistoric and historic archaeological sites, and that a Phase I archaeological survey should be conducted of all areas of proposed ground disturbance (see VDHR letter dated April 28, 2004, in Appendix A).

#### **4.8.2 Environmental Consequences—Proposed Action**

The USACE and NOAA are responsible for the design of the proposed roadway improvements. USACE incorporates standardized facility construction specifications into their project design specifications for protecting cultural resources at project sites. These specifications require that, upon discovery of possible scientific, prehistoric, historical, or archaeological data, work at a project site will cease immediately and appropriate notifications will be made giving the location and nature of the findings so that the significance of the find can be assessed. The project superintendent shall exercise care so as not to disturb or damage artifacts or fossils uncovered during excavation operations, and shall provide such cooperation and assistance as may be necessary to preserve the findings for removal or other disposition.

There are no places listed on the NRHP within the area of potential effect (APE) of the proposed action. All of the existing structures at the Wallops CDAS are less than 50 years old. Thus, as required by criterion G of 36 CFR 60.4, and *National Register Bulletin—Guidelines for Evaluating and Nominating Properties that have Achieved Significance Within the Past Fifty Years*, any structures within the Wallops CDAS and NASA WFF study areas would have to be of exceptional importance to be eligible for the NRHP. No such facilities have been identified within the existing VDOT 50 ft easement or in the vicinity of the proposed project. However, the undisturbed ground located within the proposed construction area is considered an area of high sensitivity for historic artifacts.

The proposed action would result in soil disturbance over an area of about 0.70 acre. Most of the area to be disturbed consists of ground that was previously disturbed during construction of Highway 175. Small areas of soil at the margins of the construction area are vegetated with grasses and low vegetative cover. Those areas may not have been disturbed previously. The road improvements would result in little or no direct effects on nearby areas. The visual quality of the area would not be substantially affected. Thus, the APE would be limited to areas of construction soil disturbance.

A pre-construction Phase 1 archaeological survey conforming to standards of the VDHR was completed to identify and recover archaeological materials that may be harmed by the proposed road construction. The survey was conducted by a qualified professional in a manner consistent with the Secretary of the Interior's *Standard for Identification* (48 *Federal Register* 447200-23) and the Virginia Department of Historic Resource's *Guidelines for Conducting Cultural Resource Survey in Virginia*. The 2.3-acre survey area consisted of the same 1,100 ft stretch of Route 175 and 90 ft easement as the proposed road improvement project area. A total of twenty-nine shovel tests were excavated during the survey, of which six were positive for artifacts. The six positive shovel tests represent four archaeological locations consisting of isolated finds in redeposited fill soil. The survey report concluded that, by definition, the archaeological locations are not eligible for inclusion in the NRHP and no further investigation was determined to be necessary (see Archaeological Survey report in Appendix B). A copy of the archaeological survey report was provided to the VDHR for their review. In their response the VDHR concurred with the findings of the survey that the project area is not eligible for inclusion in the NRHP and that no further historic or archaeological studies are necessary (see VDHR letter dated July 13, 2004 in Appendix A).

#### **4.8.3 Environmental Consequences—No-action Alternative**

Under the no-action alternative, no improvements would occur and no effects on cultural or historic properties would result.

#### **4.8.4 Mitigation**

Prior to the start of construction, archaeological resource awareness training would be performed to inform the construction engineers and contractors of the potential presence of prehistoric and historic artifacts in the project area, and of the necessary procedures to be taken if artifacts are unearthed.

If potentially significant artifacts are uncovered during construction activities, construction activities that could harm the find would be suspended and the NASA Facility Historic Preservation Officer and the VDHR would be notified to assess the significance of the find. The VDHR can be notified at (804) 367-2323.

## 4.9 Endangered and Threatened Species

### 4.9.1 Affected Environment

The following reptiles are listed as threatened or endangered under the Endangered Species Act and may occur in the general vicinity of the NASA WFF (NASA, 1999):

- Threatened Loggerhead Sea Turtle (*Caretta caretta*)
- Threatened Atlantic Green Sea Turtle (*Chelonia mydas*)
- Endangered Leatherback Sea Turtle (*Dermochelys coriaces*)
- Endangered Hawksbill Sea Turtle (*Eretmochelys imbricate*)
- Endangered Kemp's Ridley Sea Turtle (*Lepidochelys kempi*)

Federally listed birds that may occur in the area are (NASA, 1999):

- Endangered Piping Plover (*Charadrius melodus*)
- Threatened Bald Eagle (*Haliaeetus leucocphalus*)

State listed birds that may occur in the area are (NASA, 1999):

- Threatened Gull-billed Tern (*Sterna nilotica*)
- Threatened Upland Sandpiper (*Bartramia longicauda*)
- Endangered Wilson's Plover (*Charadrius wilsonia*)
- Endangered Peregrine Falcon (*Falco peregrinus*)

Federally endangered marine mammals that may occur in the area are (NASA, 1999):

- Sei Whale (*Balaenoptera borealis*)
- Blue Whale (*Balaenoptera musculus*)
- Fin Whale (*Balaenoptera physalus*)
- Northern Right Whale (*Eubalaena glacialis*)
- Humpback Whale (*Megaptera novaeangliae*)
- Sperm Whale (*Physeter catodon*)

No federal or state endangered or threatened floral species have not been identified at the NASA WFF (NASA, 1999). Rare flora, however, do occur at Wallops Island, which is approximately 3.7 mi to the south-southeast (NASA, 1999).

The VDCR, Virginia Department of Game and Inland Fisheries (VDGIF), and the U.S. Fish and Wildlife Service (USFWS) were consulted to determine the presence of federal and state threatened and endangered species on and in the vicinity of the proposed action (see VDCR and VDGIF letters, and USFWS letter and enclosures in Appendix A). The VDCR noted that the

bald eagle and piping plover occur in the vicinity, but determined that the proposed activity will not adversely impact known natural heritage resources in the vicinity of the project. The VDGIF also recommended that the USFWS be consulted to further discuss potential impacts to these species. A subsequent conversation with the USFWS confirmed that the proposed action is not likely to adversely affect listed species (Harrison, 2004).

The proposed road improvements would occur within the VDOT easement, an area that contains the paved road surface, and mowed grass shoulders. Additionally, the proposed Highway 175 project area is located east at the east end of NASA WFF Runway 10-28. The area is subject to aircraft over flights and associated noise. Based on the presence of highway traffic, associated vehicle noise, routine mowing, and the close proximity to existing NASA WFF airfield activities, the proposed project area has minimal value as wildlife habitat.

The Wallops Island National Wildlife Refuge is located east of the NASA WFF Main Base and the proposed project area. A portion of the refuge is adjacent to Highway 175 and consists of 373 acres of saltwater marsh, brush habitat, woodland, and grassland interspersed within Chincoteague Channel (USFWS, 2004).

#### **4.9.2 Environmental Consequences—Proposed Action**

According to the USFWS, no effects on species listed under the Endangered Species Act would result from implementation of the proposed action (USFWS, 2004). NESDIS has fulfilled requirements under Section 7 of the Endangered Species Act. Implementation of the proposed action would be very unlikely to affect habitat for any of the listed species or species of concern identified by the USFWS or VDGIF. Proposed areas of construction consist of existing paved roadways and mowed grass fields adjacent to existing development. No trees or brush would be removed and no wetlands would be filled or cleared of vegetation.

No adverse impacts on species listed under the Endangered Species Act or federal or state species of concern would result. No areas dedicated to wildlife or habitat conservation would be affected. No significant effects on biological resources would result.

#### **4.9.3 Environmental Consequences—No-action Alternative**

No construction activities would occur as a result of the no-action alternative. No effects on listed species or critical habitat would result.

#### **4.9.4 Mitigation**

No mitigation would be required.

## **4.10 Wetlands**

### **4.10.1 Affected Environment**

Executive Order 11990, *Protection of Wetlands*, requires that federal agencies avoid locating facilities in wetlands unless no alternative locations are available (President, 1977b). Under Section 404 of the Clean Water Act, the USACE is responsible for delineating federal jurisdictional wetlands and issuing permits for construction in wetlands. The USACE defines federal jurisdictional wetlands as those areas with a suitable hydrology regime and hydric soils that support (or could support) hydrophilic vegetation. The Virginia Wetlands Protection Program, administered by the Virginia DEQ, regulates impacts to state waters and both tidal and non-tidal wetlands. The Virginia Wetlands Protection Program is authorized by *Code of Virginia* §62.1-44.15.5 and is more encompassing than federal law.

According to the USFWS National Wetlands Inventory (NWI) map for this area, the eastern portion of the proposed road improvements are adjacent to estuarine-intertidal scrub-shrub broad-leaved deciduous, irregularly flooded (E2SSIP) wetlands; estuarine-intertidal emergent-persistent (E2EM1P) wetlands; and estuarine-subtidal, unconsolidated bottom, subtidal (E1UBL) wetlands (see NWI map in Appendix A). The UpD and ChA soils underlying the eastern portion of the proposed road improvements are classified as containing hydric components (NRCS, 2002, 2004; also see *Soil Survey of Accomack County, Virginia*, excerpts in Appendix A).

### **4.10.2 Environmental Consequences—Proposed Action**

The proposed improvements would occur in upland areas adjacent to federal jurisdictional wetlands. The eastern portion of the road improvements would occur on Upd and ChA soils that may be hydric. However, construction in areas of UpD and ChA soils would be limited to resurfacing and re-striping existing pavement. No construction would occur in wetlands and no direct effects on wetlands would occur as a result of implementation of the proposed action. Indirectly, storm runoff from the road surfaces would flow into the wetlands to the east. The USACE project design engineer coordinated with the USACE Eastern Shore Field Office on the design of the proposed roadway improvements to avoid impacting wetlands adjacent to the eastern margin of the proposed site.

Erosion control measures would be implemented to prevent washing of sediment or soil into those wetlands. Construction activities would be monitored to ensure that erosion and sediment control and stormwater management practices are adequately preventing sediment and pollutant migration into surface waters, including wetlands. No significant effects on wetlands would occur and the proposed action would be consistent with E.O. 11990.

### **4.10.3 Environmental Consequences—No-action Alternative**

Under the no-action alternative, no construction would occur. No impacts on wetlands would result.

### **4.10.4 Mitigation**

To minimize the potential for sedimentation of nearby wetland area during construction, standard erosion and sedimentation control measures would be implemented at all areas of soil disturbance (i.e., areas cleared of vegetation and pavement). Those measures would include placement of temporary silt fences or hay bales at the boundaries of cleared areas to retain soil, periodic spraying of water on bare soil to reduce dust entrainment, and prompt planting or hydroseeding of bare areas after construction is complete to establish vegetative cover. Construction activities would be monitored to ensure that erosion and sediment control and stormwater management practices are adequately preventing sediment and pollutant migration into surface waters, including wetlands.

## **4.11 Floodplains**

### **4.11.1 Affected Environment**

Executive Order 11988, *Floodplain Management*, requires that federal facilities be located outside the area subject to the 100-year flood event (President, 1977a). According to the Federal Emergency Management Agency (FEMA), the area of the proposed road improvements are in Zone C. Zone C covers areas of minimal flooding and is outside the 100-year floodplain (see FEMA map in Appendix A).

### **4.11.2 Environmental Consequences—Proposed Action**

The majority of the proposed road improvements would overlie MoD soil, classified as somewhat excessively drained soil. The extreme eastern portion of the proposed road improvements would overlie UpD soil, classified as very poorly drained soil and ChA soil, classified as very deep to deep, poorly to somewhat poorly drained soil. Construction of the proposed road improvements would disturb approximately 0.60 acre of ground surface, and approximately 0.30 acre of new impervious surfaces would be created. Due to the increase in impervious surfaces, the amount of storm runoff from the site would increase slightly. The proposed road design would include appropriate final surface grades and drainage facilities to carry stormwater runoff to storm sewer inlets and discharge outlets that meet VDOT design requirements.

Implementation of the proposed action would not result in significant increases in impervious surfaces or changes in drainage patterns. Flood hazards to structures would not be increased and implementation of this action would be consistent with policies set forth in E.O. 11988.

### **4.11.3 Environmental Consequences—No-action Alternative**

Under this alternative, no effects on the floodplain would result. Implementation of this alternative would be consistent with policies set forth in E.O. 11988.

### **4.11.4 Mitigation**

No mitigation would be required.

## **4.12 Coastal Zone Management**

### **4.12.1 Affected Environment**

The Coastal Zone Management Act (CZMA) of 1972 requires the protection of coastal natural resources and the management of coastal development. Virginia implements the requirements of the CZMA through the Virginia Coastal Resources Management Program (VCP) (see Virginia DEQ letter dated January 22, 2004, in Appendix A). The VCP is a network of state laws and policies administered by several state agencies to protect and manage coastal resources. VCP policies address the following resources and issues:

- Wetlands
- Fisheries
- Subaqueous lands
- Dunes
- Point source air pollution
- Point source water pollution
- Nonpoint source water pollution
- Shoreline sanitation
- Coastal lands

### **4.12.2 Environmental Consequences—Proposed Action**

The proposed construction would occur at upland areas within the existing VDOT easement for Highway 175. The existing easement would be widened from 50 ft to 90 ft in width to accommodate the proposed improvements. There would be no direct or indirect effects to fisheries habitat, subaqueous lands, dunes, point source air pollution, point source water pollution, or shorelines.

Implementation of the proposed action would be fully consistent with the VCP as follows:

- Wetlands—No wetlands would be impacted. Erosion and sedimentation control measures would be implemented to prevent the sedimentation of wetland areas adjacent to the VDOT easement.

- Nonpoint source pollution—Erosion and sedimentation control measures would be implemented to prevent the airborne and waterborne sedimentation of adjacent lands and wetlands.
- Coastal lands—The Coastal Lands Management is a state and local agency cooperative program administered by the Chesapeake Bay Local Assistance Program (CBLAP). Surface waters at the NASA WFF flow into tributaries of the Atlantic Ocean, and thus, lie outside of the area administered by the CBLAP.

The proposed road improvements would help ease congestion on Highway 175 and improve the safety of travel on that road. Highway 175 provides vehicle access to the popular Chincoteague area, which includes several areas of outstanding natural value, including Wallops Island National Wildlife Refuge, Chincoteague National Wildlife Refuge, and Assateague Island National Seashore. The Chincoteague area also contains popular tourist beaches. By improving the safety of Highway 175 and reducing traffic congestion, the proposed action would facilitate public access to the Chincoteague shoreline area. This furthers Advisory Policies A and B for shorefront access planning and protection (see Virginia DEQ letter dated January 22, 2004, in Appendix A).

The Virginia DEQ responded upon their review of the Draft EA that they concur with the finding that implementation of any of the alternatives of the proposed action would be fully consistent with the VCP so long as NESDIS complies with all the requirements of applicable permits and authorizations referenced in this Final EA.

#### **4.12.3 Environmental Consequences—No-action Alternative**

No impacts would occur as a result of the no-action alternative on resources of the coastal zone.

#### **4.12.4 Mitigation**

See Section 4.6.4.

### **4.13 Wild and Scenic Rivers**

#### **4.13.1 Affected Environment**

The National Wild and Scenic Rivers Act aims to preserve and protect aesthetic and recreational values of designated free-flowing rivers. There are no designated wild and scenic rivers or portions of those rivers in Virginia. The nearest designated wild and scenic river is White Clay Creek, found roughly 125 mi to the north-northwest in northern Delaware (NPS, 2004).

Virginia Scenic Rivers Act preserves and protects state designated rivers for their natural beauty, recreational, geologic, and cultural attributes. The nearest state-designated rivers to the

site of the proposed action are the Chickahominy State Scenic River approximately 102 mi to the west-southwest and James River State Scenic River approximately 107 mi to the southwest (*Code of Virginia*, 1948).

Due to the distances from the location of the proposed action, no effects would occur to federally or state designated scenic rivers.

#### **4.13.2 Environmental Consequences—Proposed Action**

No direct or indirect effects on wild or scenic rivers would occur as a result of the proposed action.

#### **4.13.3 Environmental Consequences—No-action Alternative**

No impacts would occur on wild and scenic rivers as a result of the no-action alternative.

#### **4.13.4 Mitigation**

No mitigation would be required.

### **4.14 Farmlands**

#### **4.14.1 Affected Environment**

The proposed action is located within an existing VDOT easement. Neither the VDOT easement, nor the adjoining NASA WFF lands are utilized for agricultural purposes.

The Farmland Protection Policy Act (FPPA) sets forth federal policies to prevent the unnecessary conversion of agricultural land to non-agricultural use. NRCS regulations at 7 CFR Part 658, *Farmland Protection Policy Act*, are designed to implement those policies. The proposed road improvements would cross MoD, UpD, and ChA soils, which are not considered prime farmland (NRCS, 2002).

#### **4.14.2 Environmental Consequences—Proposed Action**

Implementation of the proposed action would have no effect on agricultural production. No land would be removed from existing agricultural use. No impacts on farmlands would result.

#### **4.14.3 Environmental Consequences—No-action Alternative**

Under the no-action alternative, no impacts on farmlands would result.

#### **4.14.4 Mitigation**

No mitigation would be required.

## **4.15 Energy Consumption**

### **4.15.1 Affected Environment**

Electric service to the Wallops CDAS and NASA WFF is supplied by Conectiv Power Delivery. Both the Wallops CDAS and the NASA WFF Main Base utilize back-up engine generators that provide backup electric power during the loss of primary electric service.

### **4.15.2 Environmental Consequences—Proposed Action**

Equipment used to construct the road improvements would consume modest amounts of gasoline and diesel fuels. A construction office may be staged within the VDOT easement, and could connect to nearby electric power lines. The amount of electric energy consumed during the construction of the proposed road improvements would be insignificant.

### **4.15.3 Environmental Consequences—No-action Alternative**

No new consumption of energy would occur as a result of the no-action alternative.

### **4.15.4 Mitigation**

No mitigation would be required.

## **4.16 Visual/Light Emissions**

### **4.16.1 Affected Environment**

The Wallops CDAS and NASA WFF are located in rural landscape, surrounded on the north, east and west by undeveloped marshlands. The topography of the area is relatively low, with few ridges that provide screening. Mature forested areas provide the predominant screening. The 15 NESDIS and NASA dish antennas dominate the view shed along Highway 175 on the east side of the NASA WFF. Views of the Wallops CDAS and NASA WFF antennas are best seen by vehicular traffic traveling on Highway 175 to and from the town of Chincoteague.

The existing roadway and access road entrance are located between open grass fields. The predominant structures in the area of the proposed road improvements are the NASA WFF airfield fence and town of Chincoteague's well houses located to the northwest. A narrow line of coniferous and deciduous trees is located at the east margin of the Wallops CDAS property. The view from the area of the proposed road improvements to the east-southeast include marshland vegetation (e.g., tall marsh grasses, cat tails), electric utility poles and service lines, meandering water ways of Mosquito Creek, and distant views of Chincoteague Bay and the town of Chincoteague. The NASA Visitors Center is located on the east side of Highway 175 approximately 700 ft south of the southern end of the proposed road improvements. The visitors center has a display of full scale rockets on the south end of the NASA Visitors Center property.

#### **4.16.2 Environmental Consequences—Proposed Action**

The proposed action would be located within the VDOT easement which would be widened from 50 ft to 90 ft. Roadway improvements would be finished at nearly the same finished elevations as the existing roadway. The proposed widening of the roadway would not intrude upon the adjacent marshlands nor the NASA WFF airfield area. No new lights are proposed as part of the action. The proposed road improvements would have a minimal effect on the visual setting of the project area.

#### **4.16.3 Environmental Consequences—No-action Alternative**

No change in the visual environment would occur as a result of the no-action alternative.

#### **4.16.4 Mitigation**

No mitigation would be required.

### **4.17 Solid and Hazardous Waste**

#### **4.17.1 Affected Environment**

The area of the proposed road improvements is surrounded by open grass fields. No residential, office, industrial or manufacturing facilities are present in the vicinity. Non-hazardous solid wastes are removed from the Wallops CDAS facility and NASA WFF by a private contractor and disposed of offsite at an approved landfill. There are no solid waste disposal areas on either the Wallops CDAS or NASA WFF.

#### **4.17.2 Environmental Consequences—Proposed Action**

The Virginia DEQ responded upon their review of the Draft EA that it advocates employing the principles of pollution prevention in all construction projects to minimize environmental impacts. Specifications regarding minimizing the use of raw materials, utilizing sustainable materials such as recycled asphalt and concrete materials, should be considered during the project's design. Additionally, the DEQ stated that any soil encountered during construction that is suspected of contamination must be tested and disposed of in accordance with applicable federal, state and local laws and regulations, and that the DEQ's Tidewater Regional Office be contacted.

Construction of the proposed road improvements would generate wastes such as asphalt and concrete rubble, plastic and metal scrap, paint containers, etc. All solid wastes generated from project activities would be reduced at the source, reused, or recycled. Some wastes, such as chemicals used to clean or degrease equipment, may be considered hazardous. The use of hazardous materials would be minimized, and wastes generated from their use would be separated from non-hazardous wastes for proper disposal. All solid waste, hazardous waste, and

hazardous materials would be managed in accordance with all applicable federal, state and local environmental regulations.

Asphalt would be removed from the jug handle and roadway. The asphalt rubble could be recycled for reuse within the road project as aggregate road cover. If proper practices are used for handling and disposal of construction wastes, no significant impact on the environment would result. Provided that hazardous wastes are properly identified and separated for off-site disposal, no significant impacts on the environment would result.

#### **4.17.3 Environmental Consequences—No-action Alternative**

No new construction would occur and no solid or hazardous wastes would be generated as a result of the no-action alternative.

#### **4.17.4 Mitigation**

Some wastes, such as chemicals and rags used to clean or degrease materials and equipment, may be considered hazardous. They would be separated from non-hazardous wastes for proper disposal. All solid waste, hazardous waste, and hazardous materials would be managed in accordance with all applicable federal, state and local environmental regulations. Asphalt removed from the jug handle and roadway should be recycled either for reuse within the road project or other project requiring stone aggregate.

If during construction suspected petroleum contaminated soil is encountered, the suspect contaminated soil will be segregated and contained to prevent further spreading and the soil will be sampled and tested for the presence of petroleum hydrocarbons and volatile organic compounds (VOCs). The DEQ Tidewater Regional Office and NASA Environmental Office will be notified to determine the need for additional measures.

### **4.18 Cumulative Impacts**

#### **4.18.1 Affected Environment**

The environmental setting of the existing and proposed facilities is described by issue area in each section above. NESDIS proposes to implement a number of additional capital improvements to increase the efficiency and technical sophistication of their operations and to modernize aging facilities so that they comply with current building codes.

NASA has updated the WFF Master Plan and is preparing a WFF Site EA to consider alternatives for its operations and facility improvements. The purpose and need for NASA's proposed actions is to enable the NASA WFF to continue to meet its missions in an efficient and environmentally sound manner. NASA WFF's infrastructure is essential to the operation, safety, and mission goals at WFF (Silbert, 2004). NOAA's proposed road improvements are consistent with NASA's master plan and have an independent purpose to serve Wallops CDAS future operations.

#### **4.18.2 Environmental Consequences—Proposed Action**

NESDIS proposes to construct dedicated road turnouts from Highway 175 onto the Wallops CDAS access road. This action represents in part major facility improvements expected to occur at the Wallops CDAS over the next year. Additionally, the Wallops CDAS FMP identifies capital improvement projects to accomplish the following objectives:

- Expand mission capabilities
- Increase infrastructure capacity, reliability, and system reliance
- Meet force protection and anti-terrorism security guidelines
- Modify existing security features
- Offset facility requirements
- Correct building system deficiencies
- Renovate/modernize core mission facilities retained for long term use
- Reconfigure and add circulation improvements and pavements
- Upgrade design amenities

These capital improvement projects include renovation and buildout of existing facilities and development of new facilities within the Wallops CDAS grounds, and have been divided into project Phases 0 through 5 as follows:

Phase 0 projects, such as the proposed road improvements, are currently in the environmental review and pre-design process.

Phase 1 projects address high priority mission needs that are not or can not be met by the use of existing Wallops CDAS facilities and capabilities. These projects would focus on operations space, force protection improvements, and key infrastructure investments.

Phase 2 projects focus on projects to construct new facilities, office space and workforce support space, and initiate multi-phase renovation of the Operations Building for new uses.

Phase 3 projects are also focused on facility investments that will revitalize existing buildings and construct new administrative space.

Phase 4 projects would complete the renovations of the operations building, construct new logistics facilities, and remove the existing logistics facilities.

Phase 5 projects would upgrade/replace the transmitter buildings located on site. Additional projects would likely be added to this phase once additional programmatic needs and investments are realized.

The proposed action would enable the Wallops CDAS to maintain the level of operations required by NESDIS. Future facility improvements would help to maintain the required operations, and provide for future mission assignments. The capital improvement projects are expected to occur within the existing Wallops CDAS and NASA WFF property limits, and include renovations to existing facilities and construction of new facilities. Future actions are expected to comply with all applicable federal environmental regulations and policies.

Implementation of the proposed roadway improvements would increase the impervious surface area of the roadway, slightly increasing the amount of storm water runoff and associated roadway pollutants, but not by a significant amount. The proposed roadway would include design of appropriate surface grades and drainage ditches to carry stormwater runoff to storm sewer inlets and discharge outlets that meet VDOT design requirements. No significant effects on runoff rates or water quality would result. Implementation of the proposed action would not individually cause significant effects on the environment and would not add to effects from other reasonably foreseeable planned actions to cause cumulatively significant impacts.

#### **4.18.3 Environmental Consequences—No-action Alternative**

No individual or cumulative impacts would occur as a result of the no-action alternative.

#### **4.18.4 Mitigation**

Mitigation measures included in Sections 4.1 through 4.17 would reduce the level of reasonably foreseeable individual and cumulative impacts in the vicinity of the proposed roadway improvements to insignificant levels. Future capital improvement projects should consider the effects that the impervious surfaces of new structures will have on the stormwater drainage and water resources in the vicinity of the Wallops CDAS. Future facilities and structures should be designed to minimize impervious surfaces and to allow surface runoff to infiltrate surrounding grounds.

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## 5 COMMENTS ON DRAFT EA AND RESPONSES

### 5.1 Public Review

NESDIS issued the draft report *Environmental Assessment—Proposed Construction of Turnout Lanes from Virginia State Highway 175 to the National Environmental Satellite, Data, and Information Service (NESDIS) Wallops Command and Data Acquisition Station (CDAS), Wallops Island, Virginia*, on April 2, 2004. A legal notice announcing the availability of the Draft EA was published in the *Eastern Shore News* on April 3, 2004 (see Certificate of Publication in Appendix A). The Draft EA conformed to legal requirements of NEPA, regulations implementing the procedural requirements of NEPA developed by the Council on Environmental Quality (CEQ) at 40 CFR Parts 1500–1508, and NOAA Administrative Order 216-6. NESDIS accepted comments on the Draft EA from government agencies, local organizations, and the public during a 31-day comment period ending on May 3, 2004. Section 5.2 of this Final EA lists the two commenters and contains copies of the two letters commenting on the Draft EA received by NESDIS. Section 5.3 provides written responses to all of the relevant comments on the Draft EA received by the government. Where appropriate, the text of this Final EA has been revised to include information contained in the responses to the comments on the Draft EA.

### 5.2 Comment Letters

1. Ellie L. Irons, Program Manager 629 East Main Street Richmond, Virginia 23219  
Office of Environmental Impact P.O. Box 10009 Richmond, Virginia 23240  
Review  
Commonwealth of Virginia,  
Department of Environmental  
Quality
2. Daniel B. Horne, P.E. 830 Southampton Norfolk, Virginia 23510  
Engineering Field Director Avenue, Room 2058  
Office of Drinking Water  
Commonwealth of Virginia,  
Department of Health

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# COMMONWEALTH of VIRGINIA

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Secretary of Natural Resources

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April 28, 2004

Mr. Jeff Coron  
Environmental Engineer  
SRI International  
333 Ravenswood Avenue  
Menlo Park, California 94025

RE: Draft Environmental Assessment and Federal Consistency Determination for the Proposed Construction of Turnout Lanes from Virginia State Highway 175 to the National Environmental Satellite, Data and Information Service of the National Oceanic and Atmospheric Administration, DEQ 04-064F.

Dear Mr. Coron:

The Commonwealth of Virginia has completed its review of the Draft Environmental Assessment (EA) and consistency determination for the above-referenced project. The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of federal environmental documents and responding to appropriate federal officials on behalf of the Commonwealth. Also, as you are aware, pursuant to the Coastal Zone Management Act of 1972, as amended, federal actions that can have foreseeable effects on Virginia's coastal uses or resources must be conducted in a manner which is consistent with the Virginia Coastal Program (VCP), to the maximum extent practicable. DEQ, as the lead agency for the VCP, is responsible for coordinating Virginia's review of federal consistency determinations and certifications. The following agencies participated in the review of this Draft EA and consistency determination:

Department of Environmental Quality  
Department of Conservation and Recreation  
Department of Agriculture and Consumer Services  
Department of Mines, Minerals and Energy

The Department of Game and Inland Fisheries, the Department of Historic Resources, the Accomack-Northampton Planning District Commission and Accomack County were also invited to comment.

## **Project Description**

The National Environmental Satellite, Data and Information Service (NESDIS) of the National Oceanic and Atmospheric Administration proposes several improvements to Virginia State Highway 175 on Wallops Island, Virginia. The improvements include providing dedicated turn lanes to facilitate access to the Wallops Command and Data Acquisition Station (CDAS) (a tenant of the Wallops Flight Facility) and removing the obsolete jug handle lane from the intersection of Highway 175 and the Wallops CDAS access road. Total land disturbance is estimated at approximately 0.6 acres. In addition, the NESDIS proposes to improve motorist safety at the intersection of Highway 175 and the Wallops CDAS access road and improve the flow of traffic onto the CDAS access road from Highway 175.

## **Environmental Impacts and Mitigation**

*1. Wetlands and Water Quality.* The Draft EA (page 25) states that according to National Wetlands Inventory (NWI) maps of the area, the eastern portion of the proposed road improvements are adjacent to federal jurisdictional wetlands. However, the proposed improvements would occur in upland areas. No construction would occur in wetlands and no significant effects would occur to wetlands.

The DEQ-Tidewater Regional Office states that whereas the Draft EA acknowledges federal wetlands jurisdiction, it does not mention the Virginia Wetlands Protection Program (VWPP). The Final EA should acknowledge the fact that Virginia's surface water and wetland statutes and regulations are more encompassing than federal law and should address the presence or absence of surface water impacts including wetlands relative to these more stringent state requirements. In addition, since the discussion of wetlands impacts in the Draft EA is based solely on federal law and does not include the more stringent Virginia statutes and regulations, it is unclear whether the proposed activity will impact surface waters and/or wetlands regulated by the Commonwealth's VWPP program. Also, the investigation relative to the presence of wetlands at the site appears to be limited to a review of National Wetlands Inventory (NWI) maps and County soil survey maps. It is important to note that while NWI maps are a good reference for generalized wetland locations, they are not appropriate for regulatory determinations. As such they clearly include the following disclaimer:

"The source material used to produce the National Wetlands Inventory (NWI) digital data for these maps was prepared primarily by stereoscopic analysis of high altitude aerial photographs. Wetlands were identified on the photographs based on vegetation, visible hydrology, and geography in accordance with Classification of Wetlands and Deepwater Habitats of the United States (FWS)/OBS - 79/31 December 1979). The aerial photographs typically reflect conditions during the specific year and season when they were taken. In addition, there is a margin of error inherent in the use of the aerial photographs. Thus, a detailed on the ground and historical analysis of a single site may result in a revision of the wetland boundaries established through photographic interpretation. In addition, some small wetlands and those obscured by dense forest cover may not be included on this document. Federal, State and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, State or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or

adjacent to wetland areas should seek the advice of appropriate Federal, State or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Soil Survey Maps are similarly limited in accuracy. Therefore, the DEQ-Tidewater Regional Office recommends that NOAA field confirm the absence of surface water resources, including wetlands, at the project site prior to any construction activity.

The project must comply with Section 404(b)(1) guidelines of the Clean Water Act and with the Commonwealth's wetland laws and regulations. Both Federal and State guidelines recommend avoidance and minimization of wetlands impacts as the first steps in the mitigation process. Any unavoidable impacts to State waters may require compensation such as wetland creation, restoration or other acceptable forms of wetland compensatory mitigation. For unavoidable impacts, DEQ encourages the following practices to minimize the impacts to wetlands and waterways:

- Operate machinery and construction vehicles outside of stream-beds and wetlands; use synthetic mats when in-stream work is unavoidable.
- Preserve the top 12 inches of material removed from wetlands for use as wetland seed and root-stock in the excavated area.
- Erosion and sedimentation controls should be designed in accordance with the most current edition of the Virginia Erosion and Sediment Control Handbook. These controls should be in place prior to clearing and grading, and maintained in good working order to minimize impacts to State waters. The controls should remain in place until the area is stabilized.
- Place heavy equipment, located in temporarily impacted wetland areas, on mats, geotextile fabric, or use other suitable measures to minimize soil disturbance, to the maximum extent practicable.
- Restore all temporarily disturbed wetland areas to pre-construction conditions and plant or seed with appropriate wetlands vegetation in accordance with the cover type (emergent, scrub-shrub, or forested). The Applicant should take all appropriate measures to promote re-vegetation of these areas. Stabilization and restoration efforts should occur immediately after the temporary disturbance of each wetland area instead of waiting until the entire project has been completed.
- Place all materials which are temporarily stockpiled in wetlands, designated for use for the immediate stabilization of wetlands, on mats, geotextile fabric in order to prevent entry of materials into State waters. These materials should be managed in a manner that prevents leachates from entering state waters and must be entirely removed within thirty days following completion of that construction activity. The disturbed areas should be returned to their original contours, stabilized within thirty days following removal of the stockpile, and restored to the original vegetated state.

In addition, as stated in the Draft EA, the proposed 0.6 acres of land disturbance is too small to qualify under Virginia's Pollutant Discharge Elimination System (VPDES) general permit regulations governing storm water runoff from construction activity. However, the continuous planning process in the construction storm water general permit regulations declares that individual, small construction projects of less than an acre still may require a permit once the

total acreage reaches the one acre threshold if these projects are part of a continuous, planned development process. The DEQ-Tidewater Regional Office has further interpreted these requirements to pertain to development occurring within a single budget year or fiscal year. Therefore, this proposed project may require a VPDES General Permit for construction activities if, in combination with other projects at the facility, the one acre threshold is reached within the same budget year or same funding process. VPDES general permits for construction activities will be required for all such projects once the acre threshold is reached regardless of the size of the individual projects.

The DEQ-Tidewater Regional Office is aware of other proposed projects at the Wallops Island facility. However, some of these projects may have been for NASA sites rather than NOAA sites. As a result these may be separate budget processes and the construction activities occurring may be under separate ownership. Therefore, the DEQ-Tidewater Regional Office is not in a position to make such determinations. For this reason, NOAA should contact the DEQ-Tidewater Regional Office to ensure compliance with the VPDES regulations (see "Regulatory and Coordination Needs," item # 1 below).

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

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

Please contact the DEQ-Tidewater Regional Office at (757) 518-2000 for additional information.

3. *Natural Heritage Resources.* The Draft EA (page 24) states that the area has minimal value as wildlife habitat. The Department of Conservation and Recreation (DCR) searched its Biological and Biotics Data System (BDS) for occurrences of natural heritage resources from the areas outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered animal and plant species, unique or exemplary natural communities, and significant geologic communities. According to the information currently in their files, natural heritage resources have not been documented in the project area. Also, pursuant to the Memorandum of Agreement established between DCR and the Virginia Department of Agriculture and Consumer Services (VDACS), 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 plant or insect species under the jurisdiction of VDACS. VDACS reviewed the project and states that no additional comments are necessary in reference to endangered plant and insect species. Please contact DCR's Division of Natural Heritage at (804) 786-7951 if a significant amount of time passes before the project is implemented.

4. *Non-point Source Pollution Control.* The Draft EA (page 21) states that standard erosion and stormwater practices would be implemented at all areas of soil disturbance. DEQ encourages strict adherence to appropriate erosion and sediment control measures and recommends that construction activities be monitored to ensure that erosion and stormwater management practices are adequately preventing sediment and pollutant migration into nearby surface waters, including wetlands.

5. *Solid and Hazardous Wastes.* The DEQ-Waste Division states that solid and hazardous waste issues and sites were addressed in the project document. The DEQ-Waste Division also conducted a cursory review of its data files and did not find any sites that might impact or be impacted by this project. In addition, the DEQ's Federal Facilities Program determined that it would not impact any of the environmental investigation and/or remediation projects currently identified at the site.

6. *Wild and Scenic Rivers.* The Department of Conservation and Recreation has indicated that the proposed project will not affect any state scenic, state natural area preserve or state recreation facilities under DCR's jurisdiction.

7. *Historic Structures and Archaeological Resources.* The Draft EA (page 21) states that NOAA is aware of the need to coordinate with the state historic preservation officer (SHPO) under *Section 106 of the National Historic Reservation Act* in regards to cultural resources. According to the EA, the proposed project will not impact historic resources. However, the existing 50-foot easement is located in an area of high prehistoric and historic archaeological sensitivity. If required by the Virginia SHPO, NOAA would perform a Phase I archaeological survey prior to the construction of any roadways (EA, page 23). The Department of Historic Resources did not respond to our request for comments. NOAA should continue to coordinate with the Virginia SHPO under *Section 106 of the National Historic Preservation Act* (see "Regulatory and Coordination Needs," item # 6, below).

8. *Transportation.* The Virginia Department of Transportation (VDOT) states that the proposed project should not adversely impact existing or future transportation systems. However, careful review of the plans and coordination with VDOT's Accomac Residency is required to ensure that no conflicts are created due to current VDOT requirements regarding geometric design standards, pavement marking, pavement design, transition lengths, work zone safety and sight distance. In order to ensure compliance with current VDOT requirements, the NESDIS must coordinate with VDOT's Accomac Residency (see "Regulatory and Coordination Needs," item # 5 below).

9. *Underground and Aboveground Storage Tanks and Remediation Programs.* The DEQ-Tidewater Regional Office states that this facility operates 37 underground storage tanks (USTs) and 49 aboveground storage tanks (ASTs). In addition, the facility has an "approved" Oil Discharge Contingency Plan on file with the DEQ-Tidewater Regional Office (#05-5655). No tanks or tank and piping systems are located within or near the proposed area of construction.

Also, the facility has had a total of 22 petroleum release cases including 6 active cases. None of these cases are located within or near the proposed area of construction. Should petroleum contaminated soil be encountered during this project, the contaminated soil should be reported to DEQ and properly managed in accordance with Virginia Solid Waste Management Regulations (see "Regulatory and Coordination Needs," item # 4 below).

*10. Pollution Prevention.* The Department of Environmental Quality advocates that principles of pollution prevention be used in all construction projects as well as in facility maintenance, which includes the reduction of solid waste at the source and the use of recycled materials. DEQ has some recommendations regarding pollution prevention:

- Consider development of an effective Environmental Management System (EMS). An effective EMS will ensure that the proposed facility is committed to minimizing its environmental impacts, setting environmental goals, and achieving improvements in its environmental performance. DEQ offers EMS development assistance and recognizes facilities with effective EMS through its Virginia Environmental Excellence Program.
- Consider contractors' commitments to the environment when choosing contractors. Also, specifications regarding raw material selection (alternative fuels and energy sources) and construction practices can be included in contract documents and requests for proposals.
- Choose sustainable practices and materials in infrastructure and building construction and design. These could include asphalt and concrete containing recycled materials and integrated pest management in landscaping.

Pollution prevention measures are likely to minimize chemical exposure to employees, reduce potential environmental impacts, and reduce costs for material purchasing and waste disposal. For more information, contact DEQ's Office of Pollution Prevention, Mr. Tom Griffin at (804) 698-4545.

### **Regulatory and Coordination Needs**

*1. Water Quality and Wetlands.* To ensure compliance with the Virginia Wetlands Protection Program, NOAA must contact the DEQ-Tidewater Regional Office. The person to contact is Bert Parolari at (757) 518-2166.

In addition, any construction occurring in the course of the fiscal year that exceeds the one-acre or more land-disturbing threshold will require a Virginia Pollutant Discharge Elimination System (VPDES) Stormwater General Permit for construction activities. For more information, contact Jim McConathy of the DEQ-Tidewater Regional Office (telephone, (757) 518-2165).

*2. Erosion and Sediment Control.* Federal agencies 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 (VSWML&R), and other applicable federal nonpoint source

pollution mandates (e.g., Clean Water Act-Section 313, Federal Consistency under the Coastal Zone Management Act). Activities that disturb 10,000 square feet or more would be regulated by VESCL&R and those that disturb one acre or greater would be covered by VSWML&R. These activities include clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, or other structures, soil/dredge spoil areas, or related land conversion. Accordingly, NOAA should prepare and implement erosion and sediment control (ESC) and stormwater management (SWM) plans to ensure compliance with state law. NOAA is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and/or other mechanisms consistent with agency policy. DCR encourages NOAA to contact DCR's Chowan, Albemarle & Coastal Watershed Office at (757) 925-2468 for more information.

*3. Air Quality Regulations.* This project may be subject to regulation by the DEQ. The following sections of Virginia Administrative Code may be applicable: 9 VAC 5-50-60 *et seq.* governing fugitive dust emissions and 9 VAC 5-40-5600 *et seq.* addressing open burning. For additional information, please contact the DEQ-Tidewater Regional Office at (757) 518-2000.

*4. Solid and Hazardous Waste.* Any soil that is suspected of contamination that is encountered during construction must be tested and disposed of in accordance with applicable federal, state and local laws and regulations. Should contamination be discovered, please contact the Tidewater Regional Office of the DEQ. Also, all solid waste, hazardous waste, and hazardous materials must be managed in accordance with all applicable federal, state, and local environmental regulations. The following state regulations may be applicable: Virginia Waste Management Act, Code of Virginia Sections 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (9VAC 20-60); Virginia Solid Waste Management Regulations (9VAC 20-80) and Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal 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 Parts 107, 171.1-172.558. Contact DEQ-Tidewater Regional Office at (757) 518-2000 concerning the location and availability of suitable waste management facilities in the project area or if free product, discolored soils, or other evidence of contaminated soils are encountered.

*5. Transportation.* In order to ensure compliance with current VDOT requirements, NOAA must coordinate with VDOT's Accomac Residency (telephone, (757) 787-1550).

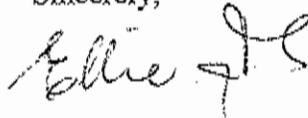
*6. Historic Structures and Archaeological Resources.* Pursuant to *Section 106 of the National Historic Preservation Act*, NOAA must continue to coordinate with the Virginia SHPO to determine if any archaeological resources would be impacted by the project. The person to contact at the Department of Historic Resources is Ethel Eaton (telephone, (804) 367-2323, ext. 112).

*7. Federal Consistency Determination.* Pursuant to the Coastal Zone Management Act of 1972, as amended, federal activities with reasonably foreseeable effects on coastal uses and resources

must be constructed and operated in a manner that is consistent, to the maximum extent practicable, with Virginia's Coastal Program (VCP). Based on the information provided in the consistency determination and comments received from agencies administering the enforceable programs, we concur with the finding that this proposal is consistent with the VCP, provided that NOAA obtain all applicable permits and approvals prior to implementing the project. Also, there are other state approvals, which may apply to this project, that are not included in this response. Therefore, NOAA must ensure that this project is constructed in accordance with all applicable federal, state, and local laws and regulations. Contact Anne Newsom at (804) 698-4135 for more information.

Thank you for the opportunity to review the Draft Environmental Assessment and consistency determination. Detailed comments of reviewing agencies are attached for your review. If you have any questions, please contact Anne Newsom at (804) 698-4135.

Sincerely,



Ellie L. Irons, Program Manager  
Office of Environmental Impact Review

Enclosures

Cc: Dave Davis, DEQ-Water Division  
Harold Winer, DEQ-TRO  
Synthia Waymack, DCR  
Keith Tignor, VDACS  
Ethel Eaton, DHR  
Chip Ray, VDOT  
Paul Berge, Accomack-Northampton PDC  
R. Keith Bull, Accomack County  
Lawrence James, NOAA

RECEIVED

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF WATER QUALITY  
Larry G. Lawson, P.E., Director

APR 21 2004

DEQ-Office of Environmental  
Impact Review

**TO:** Anne B. Newsome  
Office of Environmental Impact Review

**FROM:** Ellen Gilinsky, Ph.D., PWS   
Office of Wetlands and Water Protection and Compliance

**DATE:** April 20, 2004

**SUBJECT:** Environmental Assessment (EA)  
Proposed Construction of Turnout Lanes from VA State Highway 175 to the  
National Environmental Satellite, Data, & Information Service (NESDIS)  
04-064F

We have reviewed the information provided concerning the above-referenced project. The purpose of the project is to remove the existing jug handle lane pavement and road bed, widen Highway 175 for left turn in center of road, widen westbound lane of 175 and existing right turn lane on to Wallops Island CDAS access road, and create a new right turn taper from 175 onto the Chincoteague well field access road. The report states that the project would not occur in wetlands subject to federal jurisdiction, it would only occur on upland areas. In addition to the federal permitting mentioned in the report, Virginia also has jurisdiction over surface waters including wetlands. The report further states that the project is adjacent to wetlands identified on the NWI map. Field investigations and delineation confirmation should be performed to confirm the presence or absence of wetlands and streams in the vicinity of the project. If surface waters, including wetlands, are to be impacted by this project, a VWP permit may be required, and the project proponent should coordinate with the DEQ Tidewater Regional Office for final permit determination.

Should the size or scope of the project change, additional review may be necessary. We recommend strict adherence to erosion and stormwater management practices, and further encourage the project proponent to monitor construction activities to make certain that erosion and stormwater management practices are adequately preventing sediment and pollutant migration into surface waters, including wetlands. A VPDES stormwater general permit for construction activities will be required should the project disturb one or more acres of land.

## **Newsom, Anne**

**From:** Winer, Harold  
**Sent:** Monday, April 19, 2004 2:09 PM  
**To:** Newsom, Anne  
**Cc:** McConathy, James; Parolari, Bert; Johnston, Milton; Borton, David  
**Subject:** EIR #04-064F, Proposed Construction of Turnout Lanes, NESDIS, Accomack County

As requested, TRO staff have reviewed the supplied information and have the following comments:

**Regarding Water permitting**, the information provided in the Environmental Assessment document for this project states that the area of disturbance, 0.6 acre, is too small to qualify under the regulation for a general permit regulating storm water runoff from construction activity. That is a correct statement. However, as we have discussed for other projects, there is a continuous planning process in the construction storm water general permit regulation declaring that individual, small construction projects of less than an acre still may require a permit once the total acreage reaches the one acre threshold if these projects are part of a continuous, planned development process. TRO is further interpreting the requirement to apply to any major site such as a university campus, military installation, airport or similar site where new construction, expansion, or modification of existing structures could occur as part of a planned, long term development process. In an attempt to make this interpretation as simple and reasonable as possible, we have limited the planning period to a single budget year or fiscal year.

We are aware that other projects at Wallops Island have recently had environmental assessments submitted for construction activity. Some of these projects may have been for NASA sites rather than NOAA sites. As a result these may be separate budget processes and the construction activities occurring may be under separate ownership. We are not in a position to make such determinations.

We do believe it is appropriate to alert personnel concerned with environmental permitting at Wallops Island to this interpretation of the regulations. Therefore, in regard to this project permits may be required if in combination with other projects at Wallops Island planned for initiation in the same budget year and under the same funding process and ownership one acre or more is to be disturbed. Construction storm water general permits will be required for all such projects once the acre threshold is reached regardless of the size of the individual projects.

**Concerning VWP issues**, page iii of the document summary states that "The proposed construction activities would not occur in wetlands subject to federal jurisdiction..." The report should acknowledge the fact that Virginia's surface water and wetland statutes and regulations are more encompassing than federal law, and should address the presence or absence of surface water impacts including wetlands relative to these more stringent state requirements as well. Similarly, Section 4.10 of the report again predicates wetland impact discussions on federal law, not the more stringent Virginia statutes and regulations. It is unclear whether the proposed activity will impact surface waters and/or wetlands regulated by Virginia's VWPP program. This is especially true since the investigation relative to the presence of wetlands at the site appears to be limited to a review of National Wetlands Inventory (NWI) maps and County soil survey maps. It is important to note that while these NWI maps are a good reference for generalized wetland locations, they are not appropriate for regulatory determinations. As such they clearly include the following disclaimer:

*"The source material used to produce the National Wetlands Inventory (NWI) digital data for these maps was prepared primarily by stereoscopic analysis of high altitude aerial photographs. Wetlands were identified on the photographs based on vegetation, visible hydrology, and geography in accordance with Classification of Wetlands and Deepwater Habitats of the United States (FWS)/OBS - 79/31 December 1979). The aerial photographs typically reflect conditions during the specific year and season when they were taken. In addition, there is a margin of error inherent in the use of the aerial photographs. Thus, a detailed on the ground and historical analysis of a single site may result in a revision of the wetland boundaries established through photographic interpretation. In addition, some small wetlands and those obscured by dense forest cover may not be included on this document. Federal, State and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, State or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, State or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.*

Soil Survey Maps are similarly limited in accuracy. We recommend field confirming the absence of surface water resources, including wetlands, at the project site prior to any construction activity.

**Regarding our UST/AST and Remediation programs**, this facility operates 37 Underground Storage Tanks (USTs) and 49 Aboveground Storage Tanks (ASTs) and has a "approved" Oil Discharge Contingency Plan on file with our office (#05-5655). Total aboveground petroleum storage capacity is 333,668 gallons. No tanks or tank and piping systems are

located within or near the proposed area of construction.

In addition, the facility has had a total of 22 petroleum release cases including 6 active cases. None of these cases are located within or near the proposed area of construction. Should petroleum contaminated soil be encountered during this project, the contaminated soil should be reported to DEQ and properly managed in accordance with Virginia Solid Waste Management Regulations.

Thanks for the opportunity to comment.

Harold J. Winer  
Deputy Regional Director  
DEQ, Tidewater Regional Office  
Phone - 757-518-2153 Fax - 757-518-2003  
email - [hjwiner@deq.state.va.us](mailto:hjwiner@deq.state.va.us)

DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF AIR PROGRAM COORDINATION

ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY

TO: Anne B. Newsom

DEQ - OEIA PROJECT NUMBER: 03 - 242F

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

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APR 19 2004

PROJECT TITLE: PROPOSED CONSTRUCTION OF TUROUT LANES FROM VA. STATE HIGHWAY 175 TO THE NATIONAL ENVIRONMENTAL SATELLITE DATA & INFORMATION SERVICE (NESDIS) DEQ Office of Environmental Impact Review

PROJECT SPONSOR: DOC / NOAA NESIS

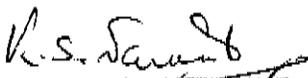
PROJECT LOCATION:  OZONE NON ATTAINMENT AREA  
 OZONE MAINTENANCE AREA  
 STATE VOLATILE ORGANIC COMPOUNDS & NITROGEN OXIDES EMISSION CONTROL AREA

REGULATORY REQUIREMENTS MAY BE APPLICABLE TO:  CONSTRUCTION  
 OPERATION

STATE AIR POLLUTION CONTROL BOARD REGULATIONS THAT MAY APPLY:

1.  9 VAC 5-40-5200 C & 9 VAC 5-40-5220 E - STAGE I
2.  9 VAC 5-40-5200 C & 9 VAC 5-40-5220 F - STAGE II Vapor Recovery
3.  9 VAC 5-40-5490 et seq. - Asphalt Paving operations
4.  9 VAC 5-40-5600 et seq. - Open Burning
5.  9 VAC 5-50-60 et seq. Fugitive Dust Emissions
6.  9 VAC 5-50-130 et seq. - Odorous Emissions; Applicable to \_\_\_\_\_
7.  9 VAC 5-50-160 et seq. - Standards of Performance for Toxic Pollutants
8.  9 VAC 5-50-400 Subpart \_\_\_\_\_, Standards of Performance for New Stationary Sources, designates standards of performance for the \_\_\_\_\_
9.  9 VAC 5-80-10 et seq. of the regulations - Permits for Stationary Sources
10.  9 VAC 5-80-1700 et seq. Of the regulations - Major or Modified Sources located in PSD areas. This rule may be applicable to the \_\_\_\_\_
11.  9 VAC 5-80-2000 et seq. of the regulations - New and modified sources located in non-attainment areas
12.  9 VAC 5-80-800 et seq. Of the regulations - Operating Permits and exemptions. This rule may be applicable to \_\_\_\_\_

COMMENTS SPECIFIC TO THE PROJECT:

  
(Kotur S. Narasimhan)  
Office of Air Data Analysis

DATE: April 19, 2004



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APR 23 2004

DEQ-Office of Environmental  
Impact Review

# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

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

Mailing address: P.O. Box 10009, Richmond, Virginia 23240

Fax (804) 698-4500 TDD (804) 698-4021

www.deq.state.va.us

W. Tayloe Murphy, Jr.  
Secretary of Natural Resources

Robert G. Burnley  
Director

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

### MEMORANDUM

**TO:** Anne Newsom

**FROM:** Thomas Modena *JM*

**DATE:** April 23, 2004

**COPIES:** Kevin Greene

**SUBJECT:** Environmental Assessment  
Wallops Island Proposed Construction of Turnout Lanes from VA State Highway  
175 to NESDIS

The Waste Division has reviewed the Environmental Assessment for the Wallops Island Proposed Construction of Turnout Lanes from VA State Highway 175 to NESDIS, Accomack County. We have the following comments concerning the waste issues associated with this project.

Solid and hazardous waste issues and sites were addressed in the report. The Waste Division did a cursory review of its data files and did not find any sites that might impact or be impacted by this project.

The Virginia Department of Environmental Quality's Federal Facilities Section also reviewed the report and determined that it would not impact any of the environmental investigation and remediation projects currently identified at the site.

Any soil that is suspected of contamination or wastes that are generated 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 Parts 107, 171.1-172.558.

Finally, the report addressed pollution prevention. VDEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All hazardous wastes should be minimized.

If you have any questions or need further information, please let me know.



**COMMONWEALTH of VIRGINIA**  
**DEPARTMENT OF CONSERVATION AND RECREATION**

203 Governor Street  
Richmond, Virginia 23219-2010  
TDD (804) 786-2121

**MEMORANDUM**

**RECEIVED**

**APR 16 2004**

**DEQ-Office of Environmental  
Impact Review**

**Date:** 14 April 2004

**To:** Anne B. Newsom, Virginia Department of Environmental Quality



**From:** John R. Davy, Director, Planning & Recreation Resources

**Subject:** DEQ#04-064F: Proposed Construction of Turnout Lanes From Route 175 to the National Environmental Satellite, Data, & Information Service

The Department of Conservation and Recreation (DCR) functions to preserve and protect the environment of the Commonwealth of Virginia and advocate the wise use of its scenic, cultural, recreation and natural heritage resources. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, state unique or exemplary natural communities, significant geologic formations and similar features of scientific interest.

DCR has 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 our files, natural heritage resources have not been documented in the project area. This absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

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.

Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks additional natural heritage resources. New and updated information

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

Please note that federal agencies 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 (VSWML&R), 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, or other structures, soil/dredge spoil areas, or related land conversion activities that disturb 2,500 square feet or more would be regulated by VESCL&R and those that disturb one acre or greater would be covered by VSWML&R. Accordingly, federal agencies should prepare and implement erosion and sediment control (ESC) and stormwater management (SWM) plans to ensure compliance with state law. The sponsoring federal agency is ultimately responsible for achieving project compliance through oversight of on site contractors, regular field inspection, prompt action against non-compliant sites, and/or other mechanisms consistent with agency policy. The National Oceanic and Atmospheric Administration is highly encouraged to contact DCR's Chowan, Albemarle & Coastal Watershed Office and/or the local ESC and SWM authorities to obtain plan development, implementation assistance and to ensure project conformance during and after active construction. [Reference: VESCL §10.1-567; VSWML §10.1-603.15]

No state scenic, state recreation facility or state natural area preserve under DCR's jurisdiction will be impacted by this project.

Thank you for the opportunity to offer comments on this project.

If you cannot meet the deadline, please notify ANNE B. NEWSOM at 804/698-4135 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

- A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.
- B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.
- C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

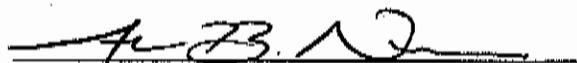
Please return your comments to:

MS. ANNE B. NEWSOM  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
OFFICE OF ENVIRONMENTAL IMPACT REVIEW  
629 EAST MAIN STREET, SIXTH FLOOR  
RICHMOND, VA 23219  
FAX #804/698-4319

**RECEIVED**

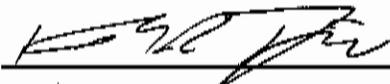
APR 22 2004

DEQ-Office of Environmental  
Impact Review

  
ANNE B. NEWSOM  
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

Statements in the project document concerning endangered species were reviewed and compared to available information. No additional comments are necessary in reference to endangered plant and insect species regarding this project.

(signed)  (Keith R. Tignor) (date) April 20, 2004  
(title) Endangered Species Coordinator  
(agency) VDACS, Office of Plant and Pest Service



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, VIRGINIA 23218-2000

PHILIP A. SHUCET  
COMMISSIONER

RECEIVED

APR 26 2004

DEQ-Office of Environmental  
Impact Review

EARL T. ROBB  
STATE ENVIRONMENTAL ADMINISTRATOR

April 26, 2004

Ms. Anne B. Newsom  
Department of Environmental Quality  
Office of Environmental Impact Review  
629 East Main St., Sixth Floor  
Richmond VA 23219

Re: #04-064F: Proposed Construction of Turnout Lanes from VA State Highway 175 to the National Environmental Satellite, Data & Information Service, Accomack County

Dear Ms. Newsom:

Eric Stringfield, in the Virginia Department of Transportation's Hampton Roads District Transportation Planning Division has reviewed the information provided for the referenced project. Our review covers impacts to existing and proposed transportation facilities.

The proposed project should not adversely impact the existing or future transportation system. However, careful review of the plans and coordination with the Accomack Residency is required to ensure that no conflicts are created due to current VDOT requirements regarding geometric design standards, pavement marking, pavement design, transition lengths, work zone safety and sight distance. All work with the potential to effect roadways or other transportation facilities should be coordinated with VDOT's Accomack Residency (757-787-1550).

Thank you for the opportunity to comment on this project.

Sincerely,

A. C. Ray  
Environmental Specialist II  
VDOT  
1401 East Broad St.  
Richmond, VA 23219  
804-371-6823 - O  
804-786-7401 - FAX

If you cannot meet the deadline, please notify ANNE B. NEWSOM at 804/698-4135 prior to the date given. Arrangements will be made to extend the date for your review if possible. An agency will not be considered to have reviewed a document if no comments are received (or contact is made) within the period specified.

REVIEW INSTRUCTIONS:

- A. Please review the document carefully. If the proposal has been reviewed earlier (i.e. if the document is a federal Final EIS or a state supplement), please consider whether your earlier comments have been adequately addressed.
- B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency.
- C. Use your agency stationery or the space below for your comments. **IF YOU USE THE SPACE BELOW, THE FORM MUST BE SIGNED AND DATED.**

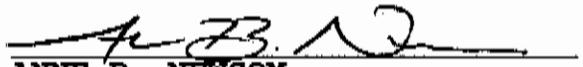
Please return your comments to:

MS. ANNE B. NEWSOM  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
OFFICE OF ENVIRONMENTAL IMPACT REVIEW  
629 EAST MAIN STREET, SIXTH FLOOR  
RICHMOND, VA 23219  
FAX #804/698-4319

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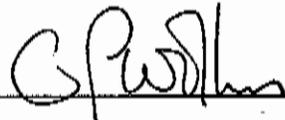
APR 15 2004

DEQ-Office of Environmental  
Impact Review

  
ANNE B. NEWSOM  
ENVIRONMENTAL PROGRAM PLANNER

COMMENTS

NO COMMENTS.

(signed)  (date) 4/13/04  
(title) GEOLOGIST SR  
(agency) DAME

**This page intentionally left blank.**



RECEIVED

MAY 21 2004

# COMMONWEALTH of VIRGINIA

ROBERT B. STROUBE, M.D., M.P.H.  
STATE HEALTH COMMISSIONER

Department of Health  
OFFICE OF DRINKING WATER

SOUTHEAST VIRGINIA ENGINEERING FIELD OFFICE

830 SOUTHAMPTON AVENUE, ROOM 2058  
NORFOLK, VIRGINIA 23510-1001  
PHONE (757) 683-2000  
FAX (757) 683-2007

**SUBJECT:** Accomack County  
Water - Wallops Flight Facility

Draft EA - NOAA CDAS

MAY 18 2004

Mr. Jeffrey Coron, Project Manager  
SRI International  
1100 Wilson Boulevard, Suite 2800  
Arlington, VA 22209

Dear Mr. Coron:

This is in response to your letter dated April 2, 2004, which requested comment on the Draft Environmental Assessment report for the proposed construction of turnout lanes on Route 175, to serve the NESDIS facility at NOAA CDAS Wallops Island. Your letter requested comment no later than May 3, 2004. As I discussed in a telephone conversation with you on May 3, the report did not arrive in this office until just before the comment deadline. You graciously allowed us some additional time to review the draft EA and provide comment.

Based on my review of the draft EA for this project, it does not appear that the project will have any adverse affects on water supply facilities. Accordingly, this office has no objections to this project.

I did note that reference was made to a separate project, which will involve the construction of a water supply line to serve the CDAS facility. Comments on that project were previously sent to you by Mr. Alan Weber, P.E., of our central office.

If you have any questions on the above, or if we may be of additional assistance, please do not hesitate to contact me.

Sincerely,

Daniel B. Horne, P.E.  
Engineering Field Director

pc: V.D.H. - Office of Drinking Water (Field Services Engineer)

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### **5.3 Responses to Comments**

#### **5.3.1 Response to Comment Letter 1: Water Quality and Wetlands**

The DEQ letter states that the DEQ Tidewater Regional Office must be contacted to ensure compliance with the Virginia Wetlands Protection Program and to determine the need for a VPDES stormwater general permit for construction activities in light of the regulation's provision addressing activities that are part of a continuous planning process. The USACE project design engineer coordinated with the USACE Eastern Shore Field Office on the design of the proposed road improvements to avoid impacting wetlands adjacent to the eastern margin of the proposed site. Since the cumulative acreage of ground disturbance of the proposed entrance road improvements combined with the Wallops CDAS proposed sewerage and water main infrastructure improvements equal 1.12 acres, NESDIS will obtain a VPDES stormwater general permit for construction (see mitigation measures listed in Section 4.7.4 of this Final EA).

The DEQ letter stated that NESDIS must ensure it is in compliance with the VESCL&R and VSWML&R. NESDIS will prepare an erosion and sedimentation control plan, and a stormwater management plan to ensure best management practices and compliance with state law during construction. Additionally, construction activity will be monitored to ensure strict adherence to erosion and sediment control, and stormwater management practices and compliance with state law (see mitigation measures listed in Section 4.7.4 of this Final EA).

#### **5.3.2 Response to Comment Letter 1: Air Quality Regulations**

The DEQ letter states that the project may be subject to air regulations administered by the DEQ and that applicable state regulations for the Control and Abatement of Air Pollution outlined in 9 VAC 5-50-60 et seq. and 9 VAC 5-40-5600 et seq. may apply to project activities related to the control of fugitive dust emissions and open burning. Exposed areas of soil will be sprayed with water or treated with dust suppressants. Additionally, spilled or tracked dirt or other materials and dried sediments resulting from soil erosion will be promptly removed from paved surfaces (see mitigation measures listed in Section 4.5.4 of this Final EA). No open burning is expected during project implementation.

#### **5.3.3 Response to Comment Letter 1: Natural Heritage Resources**

NESDIS notes DEQ's finding that no significant effects would result on natural heritage resources.

#### **5.3.4 Response to Comment Letter 1: Non-point Source Pollution Control**

See response to comment in Section 5.3.1.

### **5.3.5 Response to Comment Letter 1: Solid and Hazardous Waste**

The DEQ letter states that all solid waste, hazardous waste, and hazardous materials must be managed in accordance with all applicable federal, state and local environmental regulations. Additionally, if evidence of contaminated soils (i.e., discolored soils, free product) is encountered during construction, the soil must be managed in accordance with all applicable federal, state and local environmental laws and regulations. During construction NESDIS will segregate non-hazardous wastes from possible hazardous wastes for proper disposal. If petroleum contaminated soil is encountered during construction, the soil will be sampled and tested for the presence of petroleum hydrocarbons and VOCs. If contaminants are found at regulatory action levels, the DEQ Tidewater Regional Office and NASA Environmental Office will be notified to determine appropriate corrective actions (see mitigation measures listed in Section 4.17.4 of this Final EA).

### **5.3.6 Response to Comment Letter 1: Wild and Scenic Rivers**

Comment noted. No impacts on wild and scenic rivers would result (see Section 4.13 of this Final EA).

### **5.3.7 Response to Comment Letter 1: Historic Resources**

As required by the VDHR, a Phase 1 archaeological survey was completed to identify and recover archaeological materials that may be harmed by the proposed road construction (see VDHR letter dated April 28, 2004, in Appendix A). The survey was conducted by a qualified professional in a manner consistent with the Secretary of the Interior's *Standard for Identification* (48 *Federal Register* 447200-23) and the Virginia Department of Historic Resource's *Guidelines for Conducting Cultural Resource Survey in Virginia*. During the survey twenty-nine shovel tests were excavated, of which six were positive for artifacts. The six positive shovel tests represent four archaeological locations consisting of isolated finds in redeposited fill soil. The survey report concluded that, by definition, the archaeological locations are not eligible for the NRHP and no further investigation was determined to be necessary. A copy of the archaeological survey report was provided to the VDHR for their review. In their response the VDHR concurred that the project area is not eligible for the NRHP and that no further investigation was determined to be necessary (see VDHR letter dated July 13, 2004 in Appendix A).

Prior to the start of construction, archaeological resource awareness training will be performed to inform the construction engineers and contractors of the potential presence of prehistoric and historic artifacts in the project area, and of the necessary procedures to be taken if artifacts are unearthed. If potentially significant artifacts are uncovered during construction activities, construction activities that could harm the find will be suspended and the NASA Facility Historic Preservation Officer and VDHR will be notified to assess the significance of the find (see mitigation measures listed in Section 4.8.4 of this Final EA).

### **5.3.8 Response to Comment Letter 1: Transportation**

The DEQ letter states that NESDIS must coordinate with the VDOT Accomack Residency to ensure that no conflicts are created due to current VDOT requirements regarding geometric design standards, pavement marking, pavement design transition lengths, work zone safety, and site distance. NESDIS will coordinate with the VDOT Accomack Residency on the project design and implementation to ensure that no conflicts are created due to current VDOT design requirements and work zone safety (see mitigation measures listed in Section 4.3.4 of this Final EA).

### **5.3.9 Response to Comment Letter 1: Underground and Aboveground Storage Tanks and Remediation Program**

The proposed action would not include removal of underground or aboveground storage tanks or installation of new tanks. No effects on storage tanks would result.

### **5.3.10 Response to Comment Letter 1: Pollution Prevention**

NESDIS will incorporate the pollution prevention principles described in the DEQ letter into project design (see Section 4.17 of this Final EA).

### **5.3.11 Response to Comment Letter 1: Federal Consistency Determination**

The DEQ concurs with the finding that implementation of any of the alternatives of the proposed action would be fully consistent with the VCP so long as NOAA obtains all applicable permits and approvals referenced in this EA prior to implementing the project. NOAA will obtain all required permits and approvals.

### **5.3.12 Response to Comment Letter 2: Water Supply**

NESDIS notes that the DEQ's Department of Health, Office of Drinking Water believes that the proposed project will not adversely affect water supply facilities and does not object to the project.

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## 6 CONCLUSION

No significant environmental effects would result from implementation of the proposed action. Recommended mitigation measures include:

- NESDIS would provide road design plans to Accomack County for a 30-day courtesy review and allow normal inspections during the construction period as required by the *Public Buildings Amendments of 1988, Public Law 100-678*.
- To minimize traffic delays to both the Wallops area commuting work force and vacation travelers visiting the Chincoteague area, the road construction project would be started in mid-September 2004 and be completed before mid-April 2005. Additionally, during that time lane closures would be restricted to the hours between 8:30 A.M. and 4:00 P.M. to minimize construction related traffic delays to the Wallops area commuting work force.
- NOAA would coordinate with the VDOT Accomack Residency on the project design and implementation to ensure that work is consistent with current VDOT design and work zone safety requirements.
- To minimize the amount of dust generated during the road construction, exposed areas of soil would be sprayed with water or treated with dust suppressants. Additionally, spilled or tracked dirt or other materials and dried sediments resulting from soil erosion would be promptly removed from paved surfaces.
- To minimize the potential for soil erosion, standard erosion control measures would be implemented at all areas of soil disturbance in accordance with the VESCH. Those measures would include placement of temporary silt fences or hay bales at the boundaries of cleared areas to retain soil, periodic spraying of water on bare soil to reduce dust entrainment, and prompt planting or hydroseeding of bare areas after construction is complete to establish vegetative cover. Construction activities would be monitored to ensure that erosion and sediment control and stormwater management practices are adequately preventing sediment and pollutant migration into surface waters, including wetlands.
- NESDIS would obtain an excavation permit from NASA Facilities Management prior to start of excavation activities.
- NESDIS would obtain a VPDES stormwater general permit for the construction activities, prepare an erosion and sedimentation control plan, and a stormwater management plan to ensure best management practices and compliance with state law during construction. Construction activity would be monitored to ensure strict adherence

to erosion and sediment control, and stormwater management practices and compliance with state law.

- The proposed road design would include design features to provide for appropriate surface grades and drainage ditches to carry stormwater runoff to storm sewer inlets and discharge outlets in conformance with VDOT design requirements.
- Prior to the start of construction, archaeological resource awareness training would be performed to inform the construction engineers and contractors of the potential presence of prehistoric and historic artifacts in the project area, and of the necessary procedures to be taken if artifacts are unearthed.
- If potentially significant artifacts are uncovered during construction activities, construction activities that could harm the find would be suspended and the NASA Facility Historic Preservation Officer and the VDHR would be notified to assess the significance of the find. The VDHR can be notified at (804) 367-2323.
- Some wastes, such as chemicals and rags used to clean or degrease materials and equipment, may be considered hazardous. They would be separated from non-hazardous wastes for proper disposal. All solid waste, hazardous waste, and hazardous materials would be managed in accordance with all applicable federal, state and local environmental regulations. Asphalt removed from the jug handle and roadway should be recycled either for reuse within the road project or other project requiring stone aggregate.
- If during construction suspected petroleum contaminated soil is encountered, the suspect contaminated soil will be segregated and contained to prevent further spreading and the soil will be sampled and tested for the presence of petroleum hydrocarbons and VOCs. The DEQ Tidewater Regional Office and NASA Environmental Office will be notified to determine the need for additional measures.

Implementation of either the proposed action or the no-action alternative would not result in significant environmental effects. Therefore, an EIS is not required. Preparation of a FONSI is warranted for the proposed action under Section 5.03c of NOAA Administrative Order 216-6.

## 7 LIST OF PREPARERS

SRI International of Menlo Park, California, served as the prime contractor for the preparation of this EA under contract to the U.S. Department of Commerce. The following staff from SRI International worked on this Final EA.

- Bernice Bumbaca, in process of obtaining A.S., physical science, College of San Mateo, California; 11 years of experience in environmental research and analyses. Ms. Bumbaca served as consistency reviewer for this EA.
- Teresa Cochran, A.A., individual studies, Foothill College, Los Altos Hills, California; 13 years of experience in report preparation and coordination. Ms. Cochran served as editor and word processor for this report.
- Jeffrey L. Coron, B.S., geology, Mary Washington College, Fredericksburg, Virginia; Registered Professional Geologist, Pennsylvania; 15 years of experience in environmental site assessments, contaminant characterization and remediation studies, remediation services, and asbestos inspections and management plans. Mr. Coron served as project leader and principle author for this report.
- Roshni Easley, A.A., general studies-social science, Foothill College, Los Altos Hills, California; 5 years of experience in report preparation and coordination. Ms. Easley served as report coordinator for this report.
- Linda Hawke-Gerrans, A.A., technical illustration, College of San Mateo, California; 30 years of experience in technical illustration and 11 years of experience in geographic information systems. Ms. Hawke-Gerrans served as technical illustrator and geographic analyst for this EA.
- James Manidakos, Jr., J.D., law, Peninsula University College of Law, Mountain View, California; M.A., geology, University of California at Berkeley; B.A., geology and economics, Williams College, Williamstown, Massachusetts; certificate, hazardous materials management, University of California at Santa Cruz Extension; California Registered Environmental Assessor 1-07047; 20 years of experience in environmental impact assessment and project management. Mr. Manidakos served as project supervisor and technical reviewer for this report.
- Mark Stumbaugh, certificate, technical illustration, College of San Mateo, California; 28 years of experience in technical illustration. Mr. Stumbaugh served as technical illustrator for this EA.

- Amanda Tyrrell, B.S., integrated science and technology with a concentration in environmental science, James Madison University, Harrisonburg, Virginia; 4 years of experience in NEPA documentation and environmental database management. Ms. Tyrrell served as research analyst for this EA.
- Cherry Zamora, B.A., geography with an emphasis in physical environmental change, University of California at Berkeley. Ms. Zamora served as research analyst and assisted in preparing this report.

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**APPENDIX A**

**AGENCY CORRESPONDENCE AND BACKGROUND INFORMATION**

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**APPENDIX A  
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National Aeronautics and  
Space Administration  
**Headquarters**  
Washington, DC 20546-0001



May 5, 2004

Reply to Attn of:

Mr. Lawrence James  
Project Engineer  
National Environmental Satellite, Data, and Information Service  
National Oceanic and Atmospheric Administration  
Suitland, MD 20746

Dear Mr. James:

As the host agency, the National Aeronautics and Space Administration (NASA) request Cooperating Agency status for the following Environmental Assessments (EA) being prepared for the National Oceanic and Atmospheric Administration (NOAA) by SRI International:

1. Environmental Assessment of the Proposed Sanitary Sewage Lift Station and Force Main, and Water Main Connection at the National Environmental Satellite, Data, and Information Service (NESDIS) Wallops Command and Data Acquisition Station (CDAS), Wallops Island, Virginia; and
2. Environmental Assessment of the Proposed Construction of Turnout Lanes from Virginia State Highway 175 to the National Environmental Satellite, Data, and Information Service (NESDIS) Wallops Command and Data Acquisition Station (CDAS), Wallops Island, Virginia.

As the Lead Agency, NOAA would complete the final EA's and Findings of No Significant Impact (FONSI's), which would incorporate NASA's review comments and note that we are a Cooperating Agency. One FONSI would be prepared for each EA with separate signature pages for each agency, such that NASA and NOAA could process and sign the FONSI's simultaneously. The signature pages would be assembled in each FONSI document for distribution and filing in the Administrative Record.

If you have any comments or questions, please contact Ms. Shari Silbert at (757) 824-2327.

Cordially,

A handwritten signature in cursive script, appearing to read "Ann Clarke".

Ann Clarke  
Environmental Program Manager  
Environmental Management Division

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UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL ENVIRONMENTAL SATELLITE, DATA  
AND INFORMATION SERVICE  
Suitland, Maryland 210748-4304

May 14, 2004

Ms. Ann Clarke  
Environmental Program Manager  
Headquarters  
National Aeronautics and Space Administration  
Washington, D.C. 20546-001

Dear Ms. Clarke:

The National Aeronautics and Space Administration (NASA) request for Cooperating Agency status for Environmental Assessments (EA) being prepared for the National Oceanic and Atmospheric Administration (NOAA), National Environmental Satellite, Data, and Information Service (NESDIS) by SRI International has been received and reviewed.

NOAA/NESDIS as the Lead Agency would be very pleased to collaborate with NASA on the two EA's under preparation. The construction for both proposed projects will be on NASA property at the NASA Goddard Space Flight Center's Wallops Flight Facility. Working together will bring benefits to all the participants in these projects.

The coordination of review comments with the final EA's and Findings of No Significant Impact, as warranted, will be provided. Separate FONSI documents will be prepared with separate signature pages for each agency to allow NASA and NOAA/NESDIS simultaneous processing and sign off. The signature pages will be assembled in each FONSI document for distribution and filing in the Administrative Record.

Please be advised the team of individuals at the Wallops Flight Facility supporting our research and review for these EA's have been very supportive. Their efforts on our behalf are deeply appreciated.

Sincerely,

Lawrence S. James, Project Engineer  
Office of Systems Development  
Ground Systems Division



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January 15, 2004

VIA FEDERAL EXPRESS

Town of Chincoteague  
Attn: Mayor Jack Tarr  
6150 Community Drive  
Chincoteague, Virginia 23336

Dear Mayor Tarr:

The National Oceanic and Atmospheric Administration (NOAA) National Environmental Satellite, Data, and Information Service (NESDIS) operates the Wallops Command and Data Acquisition Station (CDAS), a major satellite control and communications facility located in Accomack County, Virginia (see Figure 1(a)). The CDAS is a tenant on the National Aeronautics and Space Administration (NASA) Wallops Flight Facility (WFF) near Chincoteague, Virginia. The facility is accessed by Virginia State Highway Route Number 175. The CDAS was built in 1965, and became operational in 1966.

NESDIS proposes to implement three capital improvements serving the CDAS facility to improve highway access safety from Route 175 onto the CDAS access road, and to modernize aging water and sewer infrastructure. NESDIS proposes to implement the following specific facility improvements at the Wallops CDAS during Fiscal Year 2004:

- Construct dedicated turnout lanes from both traffic directions of Highway 175 to the CDAS access road (see attached figures).
- Construct an approximately 6,000 feet long sanitary sewer line that will connect the CDAS to the NASA WFF waste water treatment facility (see attached figures).
- Abandon the existing sewage drain field in accordance with Virginia Department of Health recommendations.
- Construct a 200 feet long potable water supply line extension from an existing CDAS water supply tie-in (see attached figures).
- Remove the 6-inch water supply well from everyday service by turning off the electric power supply and securing the well cap. The well will be kept inactive pending emergency water supply needs.

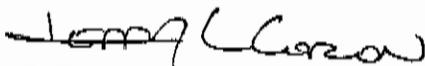
**SRI International**

1100 Wilson Blvd. • Suite 2800 • Arlington, VA 22209-3915 • (703) 524 - 2053  
Telefax: (703) 247-8569

SRI is preparing an Environmental Assessment (EA) conforming with requirements of the National Environmental Policy Act analyzing construction of the proposed improvements. A copy of the draft EA report will be provided to your office for review prior to completion of the final EA. We would appreciate your office's assistance by providing information on the Town's issues that could be related to the proposed activities serving the CDAS, and the potential for implementation of the proposed actions to effect those issues.

Should you have any questions about this proposed action or the NEPA process, please call me at (703) 247-8484. Thank you for participating in this environmental review and planning process.

Sincerely,



Jeffrey L. Coron

Project Leader

Attachment: Project location figures

cc: Jim West, Town Manager  
P14750 file



## COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, VIRGINIA 23219-2000

PHILIP A. SHUCET  
COMMISSIONER

EARL T. ROBB  
STATE ENVIRONMENTAL ADMINISTRATOR

March 5, 2004

Mr. Jeffery L. Coron  
Project Leader  
SRI International  
1100 Wilson Blvd., Suite 2800  
Arlington, VA 22209-3915

Re: Wallops Command & Data Acquisition Station Road Access Improvement, Rt. 175

Dear Mr. Coron:

The Virginia Department of Transportation has reviewed the information provided for the referenced project. Our review covers impacts to existing and proposed transportation facilities. Preliminary review of the report does not indicate any negative impacts to the transportation system. The Rt. 13/Wallops Island Access Management Study recommends localized widening and shoulder improvements for Rt. 175 similar to those noted in the submitted impact statement.

The access improvement notes coordination with VDOT. The improvement should not adversely impact the existing or future transportation system, however careful consideration and coordination with the Accomack Residency is required to ensure that no conflicts are created due to current VDOT requirements regarding geometric design standards, paving markings, pavement designs, transition lengths, work zone safety and sight distance. Otherwise VDOT has no objections to the planned improvements.

Thank you for the opportunity to comment on this project.

Sincerely,

A handwritten signature in black ink, appearing to read "A. C. Ray".

A. C. (Chip) Ray  
Environmental Specialist II  
VDOT  
1401 East Broad St.  
Richmond, VA 23219  
804-371-6823 - O  
804-786-7401 - FAX

A-11

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United States  
Department of  
Agriculture

Soil  
Conservation  
Service

In cooperation with  
Virginia Polytechnic  
Institute and State  
University

# Soil Survey of Accomack County, Virginia



ISSUED SEPTEMBER 1994

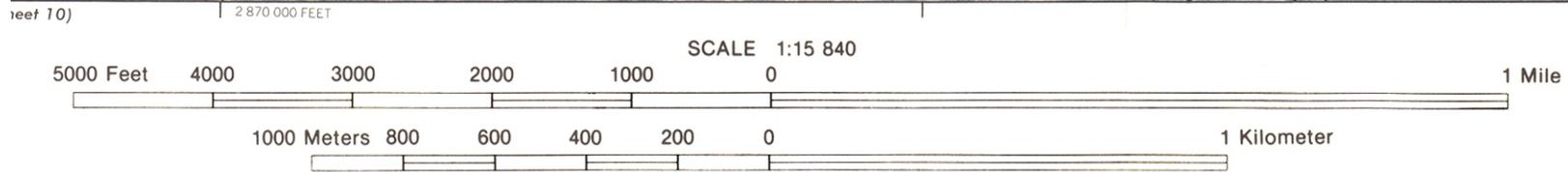
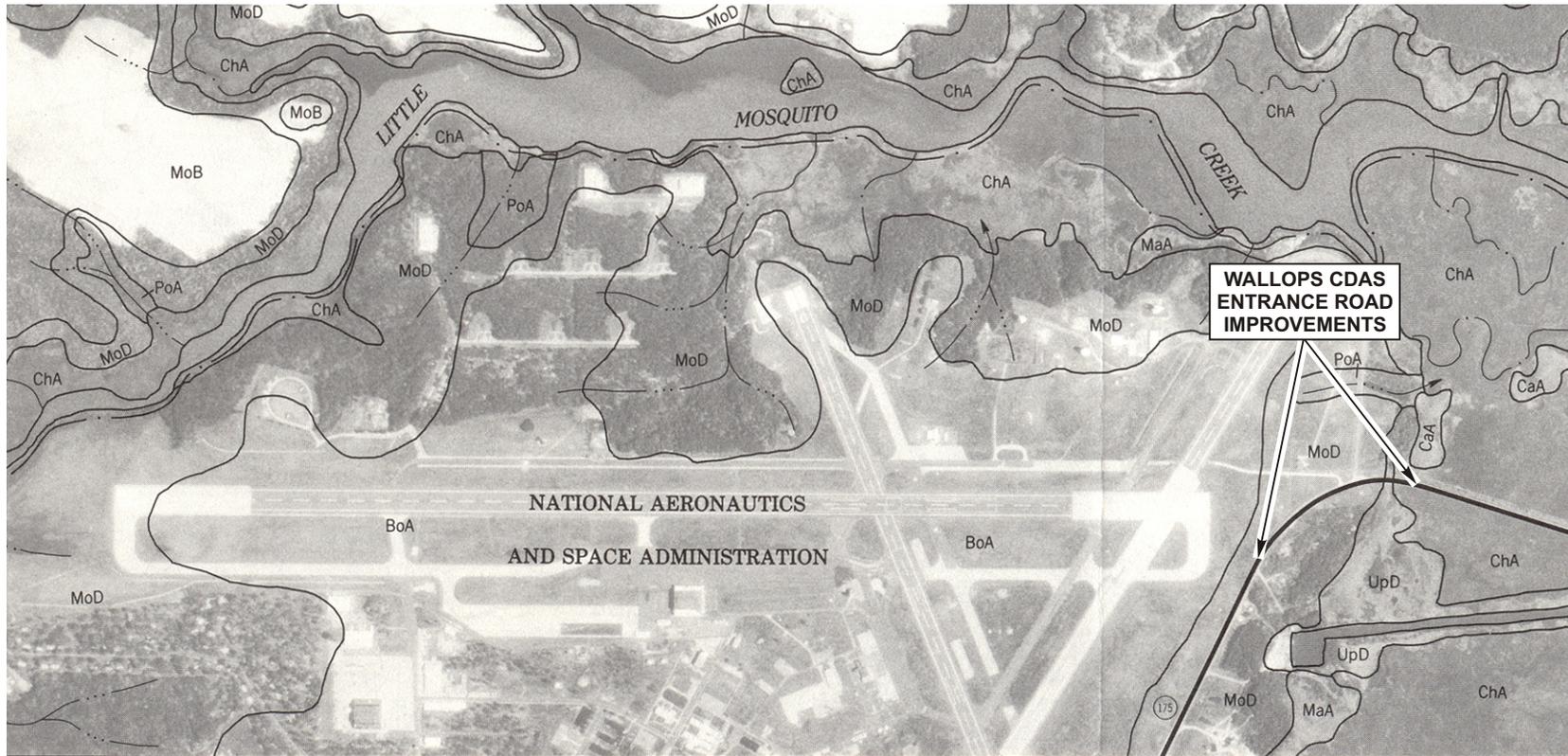
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SOIL SURVEY OF  
ACCOMACK COUNTY, VIRGINIA  
SHEET NUMBER 4

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE



A-15



Base maps are orthophotographs prepared by the U. S. Department of the Interior, Geological Survey, from 1982 aerial photography. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

SOIL SURVEY OF  
ACCOMACK COUNTY, VIRGINIA  
SHEET NUMBER 4

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## Selected Component Text Entries

Accomack County, Virginia

Only those components that have entries for the selected text kinds and categories are included in this report.

### Map Unit: ChA - CHINCOTEAGUE SILT LOAM, 0 TO 1 PERCENT SLOPES, FREQUENTLY FLOODED

Componet: CHINCOTEAGUE (95%)

Text Kind/Category: SO15 description

*THE CHINCOTEAGUE SERIES CONSISTS OF VERY DEEP, VERY POORLY DRAINED SOILS IN SALT MARSHES. TYPICALLY, THEY HAVE A DARK GRAY SILT LOAM SURFACE LAYER 6 INCHES THICK. THE SUBSTRATUM IS DARK GRAY SILT LOAM FROM 6 TO 13 INCHES, DARK GRAY SILTY CLAY LOAM FROM 13 TO 40 INCHES, AND DARK GRAY SILT LOAM FROM 40 TO 60 INCHES. SLOPES RANGE FROM 0 TO 2 PERCENT.*

Componet: Camocca (%)

Text Kind/Category: SO15 description

*THE CAMOCCA SERIES CONSISTS OF POORLY DRAINED SANDS ALONG THE COAST AT ELEVATIONS OF ABOUT 10 FEET OR LESS. THEY HAVE DARG GRAYISH BROWN FINE SAND SURFACE LAYERS OVER GRAY FINE SAND LAYERS THAT HAVE BEEN REWORKED BY WIND AND WAVES. THE SOIL SURFACE IS PLANE TO CONCAVE AND SLOPES ARE 0 TO 2 PERCENT.*

Componet: Dragston (%)

Text Kind/Category: SO15 description

*THE DRAGSTON SERIES CONSISTS OF DEEP, SOMEWHAT POORLY DRAINED SOILS THAT FORMED IN LOAMY FLUVIAL OR MARINE SEDIMENTS ON STREAM TERRACES AND ON THE LOWER COASTAL PLAIN. TYPICALLY, THEY HAVE A DARK GRAYISH BROWN FINE SANDY LOAM SURFACE ABOUT 9 INCHES THICK. THE SUBSOIL TO 17 INCHES IS MOTTLED LIGHT OLIVE BROWN FINE SANDY LOAM. BELOW THIS IT IS MOTTLED GRAYISH BROWN FINE SANDY LOAM TO 37 INCHES. THE SUBSTRATUM FROM 37 TO 66 INCHES IS MOTTLED BROWNISH YELLOW FINE SAND. SLOPES RANGE FROM 0 TO 2 PERCENT.*

Componet: Magotha (%)

Text Kind/Category: SO15 description

*THE MAGOTHA SERIES CONSISTS OF VERY DEEP, POORLY DRAINED SOILS ON HIGHER LANDSCAPE POSTIONS IN SALT MARSHES THAT WERE FORMER UPLANDS. TYPICALLY, THEY HAVE A DARK GRAYISH BROWN FINE SANDY LOAM SURFACE LAYER 5 INCHES THICK. THE SUBSOIL IS LIGHT BROWNISH GRAY FINE SANDY LOAM MOTTLED WITH STRONG BROWN AND OLIVE YELLOW FROM 5 TO 22 INCHES AND GRAY FINE SANDY LOAM FROM 22 TO 40 INCHES. THE SUBSTRATUM, BELOW 40 INCHES, IS LIGHT GRAY FINE SAND. SLOPES RANGE FROM 0 TO 2 PERCENT.*

## Selected Component Text Entries - Continued

Accomack County, Virginia

### Map Unit: ChA - CHINCOTEAGUE SILT LOAM, 0 TO 1 PERCENT SLOPES, FREQUENTLY FLOODED

Component: Munden (%)

Text Kind/Category: SO15 description

*SOILS OF THE MUNDEN SERIES ARE VERY DEEP AND MODERATELY WELL DRAINED. THEY FORMED IN LOAMY MARINE OR FLUVIAL SEDIMENTS ON STREAM TERRACES AND RIDGES ON THE COASTAL PLAIN. TYPICALLY, THE SURFACE LAYER IS DARK GRAYISH BROWN SANDY LOAM 8 INCHES THICK. THE SUBSOIL IS YELLOWISH BROWN SANDY LOAM FROM 8 TO 15 INCHES ARE YELLOWISH BROWN LOAM FROM 15 TO 25 INCHES. THE LOWER PART OF THE SUBSOIL FROM 25 TO 32 INCHES IS BROWN AND YELLOWISH BROWN SANDY LOAM MOTTLED WITH LIGHT BROWNISH GRAY. THE SUBSTRATUM, TO 62 INCHES, IS MOTTLED BROWN, GRAY, AND RED SAND. SLOPES RANGE FROM 0 TO 6 PERCENT.*

Component: Nimmo (%)

Text Kind/Category: SO15 description

*THE NIMMO SERIES CONSISTS OF VERY DEEP, POORLY DRAINED SOILS THAT FORMED IN LOAMY AND SANDY MARINE OR FLUVIAL SEDIMENTS ON THE LOWER COASTALPLAIN. TYPICALLY, THESE SOILS HAVE A DARK GRAY LOAM SURFACE LAYER 7 INCHES THICK. THE SUBSOIL IS LIGHT GRAY FINE SANDY LOAM IN THE UPPER 7 INCHES. IT IS GRAY LOAM FROM 14 TO 25 INCHES AND GRAY FINE SANDY LOAM FROM 25 TO 33 INCHES. THE SUBSTRATUM FROM 33 TO 60 INCHES IS LIGHT GRAY FINE SAND. SLOPES RANGE FROM 0 TO 2 PERCENT.*

---

### Map Unit: MoD - MOLENA LOAMY SAND, 6 TO 35 PERCENT SLOPES

Component: MOLENA (90%)

Text Kind/Category: SO15 description

*THE MOLENA SERIES CONSISTS OF SOMEWHAT EXCESSIVELY-DRAINED, VERY GENTLY SLOPING TO SLOPING SANDY SOILS ON STREAM TERRACES AND UPLANDS. IN A REPRESENTATIVE PROFILE, THE SURFACE LAYER IS REDDISH-BROWN SAND, ABOUT 7 INCHES THICK. THE SUBSOIL IS YELLOWISH-RED TO A DEPTH OF 51 INCHES. IT IS LOAMY SAND IN THE UPPER 11 INCHES, AND LOAMY FINE SAND IN THE LOWER 33 INCHES. THE UNDERLYING MATERIAL, TO A DEPTH OF ABOUT 60 INCHES, IS YELLOWISH-RED COARSE SAND. SLOPES RANGE FROM 0 TO 35 PERCENT.*

Component: Dragston (%)

Text Kind/Category: SO15 description

*THE DRAGSTON SERIES CONSISTS OF DEEP, SOMEWHAT POORLY DRAINED SOILS THAT FORMED IN LOAMY FLUVIAL OR MARINE SEDIMENTS ON STREAM TERRACES AND ON THE LOWER COASTAL PLAIN. TYPICALLY, THEY HAVE A DARK GRAYISH BROWN FINE SANDY LOAM SURFACE ABOUT 9 INCHES THICK. THE SUBSOIL TO 17 INCHES IS MOTTLED LIGHT OLIVE BROWN FINE SANDY LOAM. BELOW THIS IT IS MOTTLED GRAYISH BROWN FINE SANDY LOAM TO 37 INCHES. THE SUBSTRATUM FROM 37 TO 66 INCHES IS MOTTLED BROWNISH YELLOW FINE SAND. SLOPES RANGE FROM 0 TO 2 PERCENT.*

## Selected Component Text Entries - Continued

Accomack County, Virginia

**Map Unit:** UpD - UDORTHENT AND UDIPSAMMENT SOILS, 0 TO 30 PERCENT SLOPES

**Componet:** Bojac (%)

**Text Kind/Category:** SOI5 description

*SOILS OF THE BOJAC SERIES ARE VERY DEEP AND WELL DRAINED. THEY FORMED IN LOAMY AND SANDY SEDIMENTS ON TERRACES. TYPICALLY THESE SOILS HAVE A BROWN LOAMY FINE SAND SURFACE LAYER 8 INCHES THICK. THE SUBSOIL FROM 8 TO 47 INCHES IS YELLOWISH-BROWN AND STRONG BROWN FINE SANDY LOAM. THE SUBSTRATUM, FROM 47 TO 85 INCHES, IS STRATIFIED VERY PALE BROWN LOAMY FINE SAND AND YELLOW COARSE SAND. SLOPES RANGE FROM 0 TO 6 PERCENT.*

**Componet:** Chincoteague (%)

**Text Kind/Category:** SOI5 description

*THE CHINCOTEAGUE SERIES CONSISTS OF VERY DEEP, VERY POORLY DRAINED SOILS IN SALT MARSHES. TYPICALLY, THEY HAVE A DARK GRAY SILT LOAM SURFACE LAYER 6 INCHES THICK. THE SUBSTRATUM IS DARK GRAY SILT LOAM FROM 6 TO 13 INCHES, DARK GRAY SILTY CLAY LOAM FROM 13 TO 40 INCHES, AND DARK GRAY SILT LOAM FROM 40 TO 60 INCHES. SLOPES RANGE FROM 0 TO 2 PERCENT.*

**Componet:** Molena (%)

**Text Kind/Category:** SOI5 description

*THE MOLENA SERIES CONSISTS OF SOMEWHAT EXCESSIVELY-DRAINED, VERY GENTLY SLOPING TO SLOPING SANDY SOILS ON STREAM TERRACES AND UPLANDS. IN A REPRESENTATIVE PROFILE, THE SURFACE LAYER IS REDDISH-BROWN SAND, ABOUT 7 INCHES THICK. THE SUBSOIL IS YELLOWISH-RED TO A DEPTH OF 51 INCHES. IT IS LOAMY SAND IN THE UPPER 11 INCHES, AND LOAMY FINE SAND IN THE LOWER 33 INCHES. THE UNDERLYING MATERIAL, TO A DEPTH OF ABOUT 60 INCHES, IS YELLOWISH-RED COARSE SAND. SLOPES RANGE FROM 0 TO 35 PERCENT.*

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## Hydric Soils List

Accomack County, Virginia

Map Symbol and Map Unit Name	Component	Hydric	Local Landform	Hydric Soils Criteria				Acres
				Hydric Criteria Code	Meets Saturation Criteria	Meets Flooding Criteria	Meets Ponding Criteria	
ChA: CHINCOTEAGUE SILT LOAM, 0 TO 1 PERCENT SLOPES, FREQUENTLY FLOODED	CHINCOTEAGUE	Yes	Salt Marsh	2B3	Yes	No	No	45,139
	Camocca	Yes	Depression	2B1,2B2	Yes	No	No	—
	Dragston	No	---	---	---	---	---	---
	Magotha	Yes	Tidal Flat	2B3	Yes	No	No	---
	Munden	No	---	---	---	---	---	---
	Nimmo	Yes	Terrace	2B3	Yes	No	No	—
	Tidal Mudflats	Yes	Tidal Flat	2B3,3	Yes	No	Yes	---
MoD: MOLENA LOAMY SAND, 6 TO 35 PERCENT SLOPES	MOLENA	No	---	---	---	---	---	6,390
	Dragston	No	---	---	---	---	---	—
UpD: UDORTHENT AND UDIPSAMMENT SOILS, 0 TO 30 PERCENT SLOPES	UDORTHENTS	No	---	---	---	---	---	837
	UDIPSAMMENTS	No	---	---	---	---	---	651
	Bojac	No	---	---	---	---	---	—
	Chincoteague	Yes	Salt Marsh	2B3	Yes	No	No	—
	Molena	No	---	---	---	---	---	---

**Table H. - Engineering Index Properties**

Accomack County, Virginia

Absence of an entry indicates that the data were not estimated.

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Map Symbol and Soil Name	Depth	USDA Texture	Classification		Fragments		Percent Passing Sieve Number				Liquid Limit	Plasticity Index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
		In			Pct	Pct					Pct	
ChA: CHINCOTEAGUE	0-13	Silt Loam	CL CL-ML ML	A-4 A-6	0	0	100	98-100	70-100	50-95	20-40	NP-20
	13-40	Silt Loam Loam	CL	A-4 A-6	0	0	100	98-100	85-100	60-95	25-45	7-25
	40-85	Silty Clay Loam Stratified Coarse Sand To Silty Clay Loam	CL ML SC SM	A-4 A-6 A-7 A-1 A-2 A-4 A-6	0	0	100	75-100	35-100	5-95	15-40	NP-20
Camocca	0-85	Fine Sand	SM SP SP-SM	A-1-b A-2 A-3	0	0	100	80-100	40-75	3-18	---	NP
Dragston	0-6	Fine Sandy Loam	CL-ML SC SC-SM SM	A-2 A-4	0	0	100	95-100	60-85	30-60	15-20	NP-8
	6-40	Sandy Loam Loam Fine Sandy Loam	CL-ML SC SC-SM SM	A-2 A-4	0	0	100	95-100	60-85	30-60	15-25	NP-10
	40-85	Sand Fine Sandy Loam Fine Sand	SC-SM SM SP-SM	A-1 A-2 A-3	0	0	95-100	85-100	35-70	5-30	15-18	NP-7

**Table H. - Engineering Index Properties - Continued**

Accomack County, Virginia

Map Symbol and Soil Name	Depth	USDA Texture	Classification		Fragments		Percent Passing Sieve Number				Liquid Limit	Plasticity Index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
		In			Pct	Pct					Pct	
ChA: Magotha	0-5	Fine Sandy Loam	CL	A-2	0	0	100	75-100	45-95	30-65	20-35	NP-15
			ML	A-4								
			SC	A-6								
			SM									
	5-40	Sandy Loam	CL	A-2	0	0	100	75-100	45-95	30-65	20-35	NP-15
		Fine Sandy Loam	ML	A-4								
		Loam	SC	A-6								
			SM									
	40-85	Coarse Sand	SC	A-1	0	0	100	75-100	35-99	10-35	10-25	NP-10
		Fine Sand	SC-SM	A-2								
		Loamy Fine Sand	SM									
			SP-SM									
A-22 Munden	0-8	Sandy Loam	SC	A-4	0	0	100	90-100	60-95	35-75	15-22	NP-10
			SC-SM									
			SM									
	8-40	Loam	SC	A-2	0	0	100	90-100	60-95	30-75	15-30	NP-15
		Sandy Loam	SC-SM	A-4								
		Fine Sandy Loam	SM	A-6								
	40-85	Fine Sand	SC-SM	A-2	0	0	100	90-100	50-90	5-35	15-18	NP-7
		Fine Sandy Loam	SM	A-3								
		Loamy Sand	SP-SM									

**Table H. - Engineering Index Properties - Continued**

Accomack County, Virginia

Map Symbol and Soil Name	Depth	USDA Texture	Classification		Fragments		Percent Passing Sieve Number				Liquid Limit	Plasticity Index
			Unified	AASHTO	>10 Inches	3-10 inches	4	10	40	200		
		In			Pct	Pct					Pct	
ChA: Nimmo	0-6	Sandy Loam	ML SC SC-SM	A-4	0	0	100	95-100	60-85	36-60	15-22	NP-10
	6-32	Fine Sandy Loam Sandy Loam Loam	CL ML SC SM	A-2 A-4 A-6	0	0	100	95-100	60-95	30-75	15-30	NP-10
	32-85	Fine Sand Sand Loamy Sand	SC-SM SM SP-SM	A-2 A-3	0	0	100	95-100	50-80	5-35	15-18	NP-7
Tidal Mudflats	---				---	---	---	---	---	---	---	---
MoD: MOLENA	0-8	Loamy Sand	SM SP-SM	A-2 A-3	0	0	100	98-100	55-95	5-15	---	NP
	8-45	Loamy Fine Sand Loamy Sand	SM SP-SM	A-2 A-3	0	0	100	98-100	55-95	7-25	---	NP
	45-85	Coarse Sand Sand Gravelly Sand	SP SP-SM	A-2 A-3	---	0-5	90-100	60-100	51-80	2-12	---	NP

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**Table H. - Engineering Index Properties - Continued**

Accomack County, Virginia

Map Symbol and Soil Name	Depth	USDA Texture	Classification		Fragments		Percent Passing Sieve Number				Liquid Limit	Plasticity Index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
		In			Pct	Pct					Pct	
<b>MoD:</b>												
Dragston	0-8	Fine Sandy Loam	CL-ML SC SC-SM	A-2 A-4	0	0	100	95-100	60-85	30-60	15-20	NP-8
	6-40	Loam Sandy Loam Fine Sandy Loam	CL-ML SC SC-SM	A-2 A-4	0	0	100	95-100	60-85	30-60	15-25	NP-10
	40-85	Fine Sand Sand Fine Sandy Loam	SC-SM SM SP-SM	A-1 A-2 A-3	0	0	95-100	85-100	35-70	5-30	15-18	NP-7
<b>UpD:</b>												
UDORTHENTS	---				---	---	---	---	---	---	---	---
UDIPSAMMENTS	---				---	---	---	---	---	---	---	---
Bojac	0-7	Loamy Sand	SM	A-2	0	0	95-100	95-100	50-100	15-30	15-20	NP
	7-40	Sandy Loam Loam Fine Sandy Loam	ML SM	A-2 A-4	0	0	95-100	95-100	55-100	20-60	15-35	NP-10
	40-85	Stratified Coarse Sand To Loamy Fine Sand	SM SP SW-SM	A-1 A-2 A-3	0	0	80-100	75-100	12-100	2-35	15-20	NP

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**Table H. - Engineering Index Properties - Continued**

Accomack County, Virginia

Map Symbol and Soil Name	Depth	USDA Texture	Classification		Fragments		Percent Passing Sieve Number				Liquid Limit	Plasticity Index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
		In			Pct	Pct					Pct	
UpD: Chincoteague	0-13	Silt Loam	CL CL-ML ML	A-4 A-6	0	0	100	98-100	70-100	50-95	20-40	NP-20
	13-40	Loam Silt Loam Silty Clay Loam	CL	A-4 A-6 A-7	0	0	100	98-100	85-100	60-95	25-45	7-25
	40-85	Stratified Coarse Sand To Silty Clay Loam	CL ML SC SM	A-1 A-2 A-4 A-6	0	0	100	75-100	35-100	5-95	15-40	NP-20
A-25 Molena	0-8	Loamy Sand	SM SP-SM	A-2 A-3	0	0	100	98-100	55-95	5-15	---	NP
	8-45	Loamy Fine Sand Loamy Sand	SM SP-SM	A-2 A-3	0	0	100	98-100	55-95	7-25	---	NP
	45-85	Coarse Sand Sand Gravelly Sand	SP SP-SM	A-2 A-3	---	0-5	90-100	60-100	51-80	2-12	---	NP

**Table K2. - Soil Features**

Accomack County, Virginia

Absence of an entry indicates that the feature is not a concern or that data were not estimated.

Map Symbol and Soil Name	Restrictive Layer				Subsidence		Potential for Frost Action	Risk of Corrosion	
	Kind	Depth to Top	Thickness	Hardness	Initial	Total		Uncoated Steel	Concrete
		In	In		In	In			
ChA: CHINCOTEAGUE	--	--	--	--	--	--	--	High	High
Camocca	--	--	--	--	--	--	--	Low	Low
Dragston	--	--	--	--	--	--	--	Low	High
Magotha	--	--	--	--	--	--	--	High	High
Munden	--	--	--	--	--	--	--	Low	High
Nimmo	--	--	--	--	--	--	--	Low	High
Tidal Mudflats	--	--	--	--	--	--	--	--	--
MoD: MOLENA	--	--	--	--	--	--	--	Low	High
Dragston	--	--	--	--	--	--	--	Low	High
UpD: UDORTHENTS	--	--	--	--	--	--	--	--	--

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**Table K2. - Soil Features - Continued**

Accomack County, Virginia

Map Symbol and Soil Name	Restrictive Layer				Subsidence		Potential for Frost Action	Risk of Corrosion	
	Kind	Depth to Top	Thickness	Hardness	Initial	Total		Uncoated Steel	Concrete
		In	In		In	In			
UpD: UDIPSAMMENTS	--	--	--	--	--	--	--	--	--
Bojac	--	--	--	--	--	--	--	Low	High
Chincoteague	--	--	--	--	--	--	--	High	High
Molena	--	--	--	--	--	--	--	Low	High

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# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

5636 Southern Boulevard  
Virginia Beach, VA 23462  
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W. Tayloe Murphy, Jr.  
Secretary of Natural Resources

Robert G. Burnley  
Director

Francis L. Daniel  
Tidewater Regional Director  
(757) 518-2000

January 21, 2004

Mr. Jeffrey L. Coron  
Project Leader  
SRI International  
1100 Wilson Blvd.  
Suite 2800  
Arlington, VA 22209-3915

**Re: NOAA Wallops Flight Facility Scoping Comments, Accomack County**

Dear Mr. Coron:

A cursory review has been made of information submitted to this office with your letter to me of January 15, 2004. Based on the information provided I can offer you some general comments. The proposed project may require permits from this office for storm water construction activities and/or wetlands issues. However, there is not enough information provided to make those determinations. Should you proceed with this project, I suggest you contact this office prior to work for further information about possible permitting procedures. Your contacts will be Mr. Jim McConathy at 757-518-2165 for storm water and Mr. Bert Parolari at 757-518-2166 for wetlands.

I hope this information is helpful to you.

Sincerely,

A handwritten signature in cursive script, appearing to read "Harold J. Winer".

Harold J. Winer  
Deputy Regional Director

c: Ellie Irons

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# COMMONWEALTH of VIRGINIA

## Department of Historic Resources

2801 Kensington Avenue, Richmond, Virginia 23221

W. Tayloe Murphy, Jr.  
Secretary of Natural Resources

Kathleen S. Kilpatrick  
Director

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April 28, 2004

Mr. Larry James  
National Oceanic and Atmospheric Administration  
4401 Suitland Road, FB-4, Room 3308  
Suitland, MD 20746

RE: Proposed Construction of Turnout Lanes on VA 175  
NESDIS Facility at Wallops Command and Data Acquisition Station (CDAS), Wallops Island, VA  
Accomack County, Virginia  
DHR File No. 2004-0045

Dear Mr. James:

Thank you for your request for review of the referenced project. We have received all the required documentation from your agent, SRI International, including the application for project review, the relevant Environmental Assessment report, and current archival information.

The project consists of removal of existing jug handle pavement and road bed, widening of approximately 1,100 feet of VA 175 to accommodate a left turn in the center of the roadway, widening of approximately 120 feet of the westbound land of VA 175 and approximately 190 feet of the existing right turn lane onto the Wallops CDAS access road, and creation of a new 80-foot long taper lane from VA 175 into the unnamed Chincoteague well field access road. We concur with your definition of the area of potential effect for this project.

A cultural resource assessment of the NASA Wallops Flight Facility (WFF), in which CDAS is currently a tenant, was conducted by URS Group, Inc. (URS) in 2003. That study recorded 166 buildings and structures fifty years old or older. Two of those structures, the WEMA Recreational Facility (V-065) and the Coast Guard Station/Observation Tower (V-070), were found to be potential eligible for listing in the National Register of Historic Places. Neither will be directly or indirectly affected by the proposed undertaking.

With regards to archaeological resources within WFF, the URS cultural resources assessment developed a predictive model based on landform, soil type, level of disturbance, and documentary evidence and identified areas considered low, medium, and high sensitivity for prehistoric and historic archaeological sites. The area to be impacted by the construction of the turnout lane is considered a moderately sensitive area for prehistoric sites due to the adjacent tidal marsh. While groups exploiting the abundant food

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Page 2  
April 28, 2004  
Mr. Larry James

supplies concentrated at the periphery of tidal marshes often establish semi-permanent camps in this highly productive environment, the disturbance from previous construction at this location lessens its sensitivity. Concerning historic archaeological resources, due to the proximity of the project to the possible Revolutionary War fort at Mosquito Point located approximately 0.75 miles north and to the tidal marshes, the area under review is considered high sensitivity for historic maritime archaeological sites.

No archeological sites are recorded within the project's area of potential effects, but this does not mean that none exist. Further identification efforts are needed. The property has a moderate to high potential to contain significant archeological sites, both historic and prehistoric. Because of the archeological sensitivity of the area we recommend that an Identification (Phase I) archeological survey be conducted of all areas that may be affected by ground disturbing activities. The survey shall be conducted by a qualified professional in a manner consistent with the Secretary of the Interior's *Standards for Identification* (48 FR 44720-23) and our state *Guidelines for Archeological Investigations in Virginia*. Two copies of the resulting technical report should be submitted to us for review. Once we have the results of the archeological survey, we will be able to advise you whether further steps are needed to reduce, avoid or mitigate effects to archeological resources.

If you have any questions or if we may provide further guidance in the Section 106 review process, please do not hesitate to contact me at (804) 367-2323, ext. 153; fax (804) 367-2391; e-mail [roger.kirchen@dhr.virginia.gov](mailto:roger.kirchen@dhr.virginia.gov). We look forward to working with you and SRI International on this project.

Sincerely,



Roger W. Kirchen, Archaeologist  
Office of Review and Compliance

Cc: Jeffery L. Coron, SRI International  
Anne B. Newsom, Department of Environmental Quality



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JUL 16 2004

# COMMONWEALTH of VIRGINIA

Department of Historic Resources

2801 Kensington Avenue, Richmond, Virginia 23221

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Secretary of Natural Resources

Kathleen S. Kilpatrick  
Director

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www.dhr.state.va.us

July 13, 2004

Mr. Larry James  
National Oceanic and Atmospheric Administration  
4401 Suitland Road, FB-4, Room 3308  
Suitland, Maryland 20746

Re: *Archaeological Survey of the Proposed Route 175 Turnout Lanes Project, NESDIS, Wallops CDAS, Wallops Island, Accomack County, Virginia*  
DHR File No. 2004-0045

Dear Mr. James:

We have received for review a copy of the report referenced above prepared by the William and Mary Center for Archaeological Research for SRI International. We are pleased to inform you that the report meets the Secretary of the Interior's *Standards and Guidelines for the Documentation of Archaeological Sites* (48 FR 44734-44742) and our Department's *Survey Guidelines* (revised 2001).

Soil data collected as part of this investigation demonstrates the high level of previous disturbance in the project area. Survey of the Area of Potential Effects resulted in the identification of four non-site locations. No previously unrecorded archaeological sites were documented. By definition, non-site locations are *not eligible* for inclusion in the National Register of Historic Places. We concur with the consultant's recommendations for no further work.

Thank you for your consideration of historic resources during on-going projects at the Wallops Island facility. If you have any questions concerning our comments, or if we may provide any further assistance, please do not hesitate to contact me at (804) 367-2323, ext. 153; fax (804) 367-2972. We look forward to working with you on future projects.

Sincerely,

Roger W. Kirchen, Archaeologist  
Office of Review and Compliance

Cc: Jeffery L. Coron, SRI International  
Anne B. Newsom, Department of Environmental Quality  
Joe B. Jones, William and Mary Center for Archaeological Research

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Roanoke Region Office  
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Winchester Region Office  
107 N. Kent Street, Suite 203  
Winchester, VA 22601  
Tel: (540) 722-3427  
Fax: (540) 722-7535

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W. Tayloe Murphy, Jr.  
Secretary of Natural  
Resources

Joseph H. Maroon  
Director

**COMMONWEALTH of VIRGINIA**  
**DEPARTMENT OF CONSERVATION AND RECREATION**

203 Governor Street  
Richmond, Virginia 23219-2010  
(804) 786-6124

11 February 2004

Mr. Jeffrey L. Coron  
Project Leader  
SRI International  
1100 Wilson Boulevard, Suite 2800  
Arlington, Virginia 22209-3915

Re: National Oceanic and Atmospheric (NOAA) National Environmental Satellite, Data, and Information Service's (NESDIS) Highway Access Safety Improvement Project from Route 175 onto the Wallops Command and Data Acquisition Station (CDAS)

Dear Mr. Coron:

The Department of Conservation and Recreation (DCR) functions to preserve and protect the environment of the Commonwealth of Virginia and advocate the wise use of its scenic, cultural, recreation and natural heritage resources. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, state unique or exemplary natural communities, significant geologic formations and similar features of scientific interest.

DCR has searched its Biotics Data System for occurrences of natural heritage resources in the project vicinity. According to the information currently in our files, the presences of natural heritage resources have been documented in the project vicinity. However, due to the scope of the activity and the distance to the resources, we do not anticipate that this project will adversely impact these natural heritage resources.

The Virginia Department of Agriculture and Consumer Services (VDACS), which has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act, has established a Memorandum of Agreement with the Virginia Department of Conservation and Recreation (DCR). Under this Agreement DCR, in consultation with VDACS, represents VDACS in its comments and recommendations regarding

*Conserving Virginia's Natural and Recreational Resources*

the potential impact of reviewed projects or activities on state-listed plant and insect species. The planned activity will not affect any documented state-listed plants or insects.

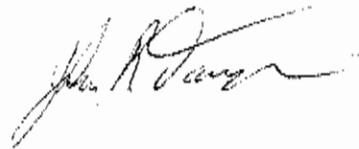
Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks additional natural heritage resources. New and updated information is continually added to BCD. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

For compliance with Erosion and Sediment Control and Stormwater Management Laws and Regulations, please note that if a project on privately- or locality-owned lands involves a land-disturbing activity of 2,500 square feet or more, the property owner is responsible for submitting a site-specific erosion and sediment control (ESC) plan to Accomack County for review and approval pursuant to the local ESC ordinance. The ESC plan must be approved prior to initiation of any land disturbance on the project site. All regulated land-disturbing activities associated with the project, including on or off site access roads, staging areas, of spoil or borrow areas, must be covered by an approved plan. Note that dependent on local requirements, a separate stormwater management (SWM) plan may also be required. Local ESC and SWM program requirements should be requested through Accomack County. [Reference: Virginia Erosion and Sediment Control Law §10.1-563; Virginia Erosion and Sediment Control Regulations §4VAC50-30-30; Virginia Stormwater Management Law §10.1-603.3; Virginia Stormwater Management Regulations §4VAC-3-20-90-141]

Lastly, no state scenic, state recreation or state natural area preserves under DCR's jurisdiction are anticipated to be impacted by this project.

Thank you for the opportunity to offer comments on this project.

Sincerely,



John R. Davy, Jr.  
Director, Planning & Recreation Resources



# COMMONWEALTH of VIRGINIA

W. Tayloe Murphy, Jr.  
Secretary of Natural Resources

Department of Game and Inland Fisheries

William L. Woodfin, Jr.  
Director

February 6, 2004

Jeffrey L. Coron  
Project Leader  
SRI International  
1100 Wilson Boulevard, Suite 2800  
Arlington, Virginia 22209-3915

RE: ESSLOG #19341, Wallops CDAS Capital Improvements, Accomack County, VA.

Dear Mr. Coron:

This letter is in response to your request for information related to the presence of threatened or endangered species in the vicinity of the above referenced project.

**The following *federal threatened/state threatened* species have been documented approximately 0.5 mile from the westernmost portion of the project area (lat./long.: 37,56,36 75,28,43): bald eagle (*Haliaeetus leucocephalus*) and piping plover (*Charadrius melodus*). Therefore, the applicant should coordinate with the U.S. Fish and Wildlife Service and with this Department concerning potential impacts to these species. Contact information for the U.S. Fish and Wildlife Service is as follows: Karen Mayne, 6669 Short Lane; Gloucester, VA 23061, (804) 693-6694 (phone), and (804) 693-9032 (fax). To contact this Department, call one of our Region 1 Wildlife Diversity Biologists, Ruth Boettcher, at (757) 442-2429.**

Also, a block survey of an area encompassing this project documented the *state special concern* great egret (*Ardea alba*) during the breeding season. As well, the *state special concern* Forster's tern (*Notropis bifrenatus*) has been documented within 0.25 mile of the northernmost point of the project area (lat./long.: 37,56,47 75,27,34). Additionally, the *state special concern* northern harrier (*Circus cyaneus*) has been documented within 0.25 mile of the easternmost point of the project area (lat./long.: 37,56,36 75,27,09). However, the classification of *state special concern* is not a legal designation and does not require further coordination. Additionally, please note that this project is approximately 2 miles or less from Wallops National Wildlife Refuge, which is a U.S. Fish and Wildlife Service property.

Information about fish and wildlife species was generated from our agency's computerized Fish and Wildlife Information System, which describes animals that are known or may occur in a particular geographic area. Field surveys may be necessary to determine the presence or absence of some of these species on or near the proposed area. Also, additional sensitive animal species may be present, but their presence has not been documented in our information system.

Jeffrey L. Coron  
ESSLog #19341  
2/6/2004  
Page 2

Endangered plants and insects are under the jurisdiction of the Virginia Department of Agriculture and Consumer Services, Bureau of Plant Protection. Questions concerning sensitive plant and insect species occurring at the project site should be directed to Keith Tignor at (804) 786-8261.

There is a processing charge of \$50.00 for our response. Please remit a check, made payable to **TREASURER OF VIRGINIA**, within 30 days. To insure proper credit to your account, please address your payment envelope directly to MaryBeth Murr at the address listed in the letterhead.

This letter summarizes the likelihood of the occurrence of endangered or threatened animal species at the project site. If you have additional questions in this regard, please contact me at (804) 367-1185.

*Please note that the data used to develop this response are continually updated. Therefore, if significant changes are made to your project or if the project has not begun within 6 months of receiving this letter, then the applicant should request a new review of our data.*

The Fish and Wildlife Information Service, the system of databases used to provide the information in this letter, can now be accessed via the Internet! The Service currently provides access to current and comprehensive information about all of Virginia's fish and wildlife resources, including those listed as threatened, endangered, or special concern; colonial birds; waterfowl; trout streams; and all wildlife. Users can choose a geographic location and generate a report of species known or likely to occur around that point. From our main web page, at [www.dgif.state.va.us](http://www.dgif.state.va.us), choose the hyperlinks to "Wildlife" then "Wildlife Information and Mapping Services", and then "Wildlife Information Online Service". For more information about the service, please contact Amy Martin, Online Service Coordinator, at (804) 367-2211.

Thank you for your interest in the wildlife resources of Virginia.

Sincerely,



Susan H. Watson  
Research Specialist Senior

cc: R.T. Fernald, VDGIF  
E. Davis, USFWS



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

Ecological Services  
6669 Short Lane  
Gloucester, VA 23061

January 21, 2004

Mr. Jeffrey L. Coron  
SRI International  
1100 Wilson Boulevard, Suite 2800  
Arlington, Virginia 22209-3915

Re: Project #3255

Greetings:

The U.S. Fish and Wildlife Service (Service) has received your request to review the attached project for potential impacts to federally listed or proposed endangered and threatened species and designated critical habitat in Virginia pursuant to the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). Attached is a list of species with Federal status and species of concern that have been documented or may occur in the county where your project is located. This list was prepared by this office and is based on information obtained from previous surveys for rare and endangered species.

In order to ensure coordination with the State agencies, we consistently recommend that individuals contact the Virginia Department of Conservation and Recreation, Division of Natural Heritage **and** the Virginia Department of Game and Inland Fisheries, since each agency maintains a different database and has differing expertise and/or regulatory responsibility. You can contact these agencies at the following addresses:

Virginia Department of Game and Inland Fisheries  
Environmental Services Section  
P.O. Box 11104  
Richmond, VA 23230  
(804) 367-1000

Virginia Department of Conservation and Recreation  
Division of Natural Heritage  
217 Governor Street, 2nd Floor  
Richmond, VA 23219  
(804) 786-7951

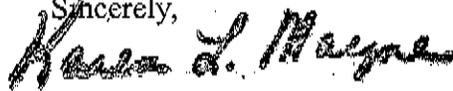
Mr. Jeffrey L. Coron

Page 2

**If either of these agencies determines that your project may impact a federally listed, proposed, or candidate species OR federally designated critical habitat, please contact this office and provide a copy of the response letter from each agency and the above referenced project number; otherwise, further contact with this office is not necessary.**

If you have any questions or need further assistance, please contact Ms. Jolie Harrison at (804) 693-6694, extension 208.

Sincerely,

A handwritten signature in cursive script that reads "Karen L. Mayne".

Karen L. Mayne  
Supervisor  
Virginia Field Office

Enclosures



January 13, 2004

VIA FEDERAL EXPRESS

U.S. Fish and Wildlife Service  
Attn: Eric Davis  
Assistant Field Supervisor  
6669 Short Lane  
Gloucester, Virginia 23061

Dear Mr. Davis:

The National Oceanic and Atmospheric Administration (NOAA) National Environmental Satellite, Data, and Information Service (NESDIS) operates the Wallops Command and Data Acquisition Station (CDAS), a major satellite control and communications facility located in Accomack County, Virginia (see Figure 1(a)). The CDAS is a tenant on the National Aeronautics and Space Administration (NASA) Wallops Flight Facility (WFF) near Chincoteague, Virginia. The facility is accessed by Virginia State Highway Route Number 175. The CDAS was built in 1965, and became operational in 1966.

NESDIS proposes to implement three capital improvements serving the CDAS facility to improve highway access safety from Route 175 onto the CDAS access road, and to modernize aging water and sewer infrastructure. NESDIS proposes to implement the following specific facility improvements at the Wallops CDAS during Fiscal Year 2004:

- Construct dedicated turnout lanes from both traffic directions of Highway 175 to the CDAS access road (see attached figures).
- Construct an approximately 6,000 feet long sanitary sewer line that will connect the CDAS to the NASA WFF waste water treatment facility (see attached figures).
- Abandon the existing sewage drain field in accordance with Virginia Department of Health recommendations.
- Construct a 200 feet long potable water supply line extension from an existing CDAS water supply tie-in (see attached figures).
- Remove the 6-inch water supply well from everyday service by turning off the electric power supply and securing the well cap. The well will be kept inactive pending emergency water supply needs.

**SRI International**

1100 Wilson Blvd. • Suite 2800 • Arlington, VA 22209-3915 • (703) 524 - 2053  
Telefax: (703) 247-8569

SRI is preparing an Environmental Assessment conforming with requirements of the National Environmental Policy Act and Endangered Species Act analyzing construction of the proposed improvements. We would appreciate your agency's assistance in providing information on federal or state listed rare, threatened, or endangered plant or animal species at the NASA WFF and the potential for implementation of the proposed actions to impact those resources.

Should you have any questions about this proposed action or the NEPA process, please call me at (703) 247-8484. Thank you for participating in this environmental review and planning process.

Sincerely,



Jeffrey L. Coron

Project Leader

Attachment: Project location figures

cc: P14750 file

## KEY

LE - federally listed endangered.

LT - federally listed threatened.

PE - federally proposed endangered.

PT - federally proposed threatened.

EX - believed to be extirpated in Virginia.

LE(S/A) - federally listed endangered due to similarity of appearance to a federally listed species.

LT(S/A) - federally listed threatened due to similarity of appearance to a federally listed species.

C - candidate species; the U.S. Fish and Wildlife Service has enough information to list the species as threatened or endangered, but this action is precluded by other listing activities.

SOC - species of concern; those species that have been identified as potentially imperiled or vulnerable throughout their range or a portion of their range. These species are not protected under the Endangered Species Act.

G - global rank; the species rarity throughout its total range.

G1 - extremely rare and critically imperiled with 5 or fewer occurrences or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.

G2 - very rare and imperiled with 6 to 20 occurrences or few remaining individuals; or because of some factor(s) making it vulnerable to extinction.

G3 - either very rare and local throughout its range or found locally (abundantly at some of its locations) in a restricted range; or vulnerable to extinction because of other factors. Usually fewer than 100 occurrences are documented.

G\_T\_ - signifies the rank of a subspecies or variety. For example, a G3T1 would apply to a subspecies of a species that is very rare and local throughout its range or found locally in a restricted range (G3) but the subspecies warrants a rank of T1, critically imperiled.

G\_Q - The taxon has a questionable taxonomic assignment.

**ACCOMACK COUNTY, VIRGINIA**  
**Federally Listed, Proposed, and Candidate Species**

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>STATUS</u>
<u>BIRDS</u>		
Charadrius melodus	Piping plover	LT
Haliaeetus leucocephalus	Bald eagle	LT
<u>INVERTEBRATES</u>		
Cicindela dorsalis dorsalis	Northeastern beach tiger beetle	LT
<u>MAMMALS</u>		
Sciurus niger cinereus	Delmarva peninsula fox squirrel	LE
<u>REPTILES</u>		
Caretta caretta	Loggerhead sea turtle	LT
<u>VASCULAR PLANTS</u>		
Amaranthus pumilus	Scabcash amaranth	LT

**Species of Concern**

<u>VASCULAR PLANTS</u>		
Polygonum glaucum	Sea-beach knotweed	G3
Trillium pusillum var virginianum	Virginia least trillium	G3T2

May 29, 2001  
 Prepared by U.S. Fish and Wildlife Service, Virginia Field Office

# Bald Eagle

## *Haliaeetus leucocephalus*



**Description** - The bald eagle occurs throughout the United States. It is a large bird-of-prey with dark brown plumage, a white head and tail, and a yellow bill, feet, and eyes. Juvenile eagles generally have a dark brown body, sometimes with white patches on the tail, belly, and underwings. The head and tail become completely white when full adult plumage is reached at four to five years of age.

**Life History** - The majority of Virginia's eagle population is found on the coastal plain. The bald eagle breeding season begins in mid-November when large nests are built (or the previous year's nest is repaired) usually in loblolly pine trees that are in close proximity to water. Eagles lay one to three eggs between mid-January and late March. In March, most eggs hatch and by June or July most young have fledged. However, the young will continue to use the nest for several weeks. In Virginia, during the summer and winter months, juvenile and nonbreeding adult eagles congregate along large rivers in areas with abundant food and little human

disturbance. During the day, these eagles feed and perch along the river shoreline. In late afternoon, they move inland to roost either singly or communally. Roosts are typically located away from human disturbance and near water and a food source. Bald eagles feed primarily on fish, but will also eat carrion, waterfowl, small mammals, snakes, and turtles.

**Conservation** - The bald eagle was federally listed as an endangered species in the Chesapeake Bay Region on March 11, 1967. On July 12, 1995, the bald eagle was reclassified to threatened throughout the 48 lower states because the population had increased due to the banning persistent pesticides, habitat protection, and other recovery activities. On July 6, 1999, the bald eagle was proposed for removal from the list of endangered and threatened wildlife in the lower 48 states. This action was proposed because the available data indicated that this species has recovered. The recovery is due in part to habitat protection and management actions initiated under the Endangered Species Act. It is also due to reduction in levels of persistent pesticides occurring in the environment. If and when the eagle is no longer protected by the Endangered Species Act, it will still be protected by the Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, and state laws. Until the eagle is officially delisted, it will continue to receive protection pursuant to the Endangered Species Act. Bald eagles in the Chesapeake Bay are increasing. However, habitat destruction through urban and residential development and human disturbance in nesting, roosting, and

foraging habitats continue to be a threat.

**What You Can Do To Help** - If you know of a bald eagle nest on or near property proposed for clearing, development, or logging please contact one of the following agencies for assistance:

Virginia Department of Game and  
Inland Fisheries  
P.O. Box 11104  
Richmond, Virginia 23230  
(804) 367-1000

U. S. Fish and Wildlife Service  
6669 Short Lane  
Gloucester, Virginia 23061  
(804) 693-6694

### References

U.S. Fish and Wildlife Service.  
1990. Chesapeake Bay Region bald eagle recovery plan: first revision. Newton Corner, Massachusetts.

U.S. Fish and Wildlife Service.  
1999. Proposed rule to remove the bald eagle in the lower 48 states from the list of endangered and threatened wildlife. Federal Register 64(128): 36453-36464.

Watts, B.D., K.W. Cline, and M.A. Byrd. 1994. The bald eagle in Virginia: An information booklet for land planners. The Center for Conservation Biology, College of William and Mary, Williamsburg, Virginia.



U.S. Fish and Wildlife Service  
Virginia Field Office  
6669 Short Lane  
Gloucester, Virginia 23061  
(804) 693-6694  
<http://www.fws.gov>  
August 1999

# Piping Plover

## *Charadrius melodus*



© J. Zickefoose

**Description** - Piping plovers occur in three disjunct populations in North America: Northern Great Plains, Great Lakes, and Atlantic Coast. The piping plover is a 5 ½ inch long pale grayish-brown shorebird with a white breast. During the breeding season, it has a black breast band which is sometimes incomplete and a black bar between its eyes. The bill is dull orange with a black tip and the legs and feet are orange.

**Life History** - The piping plover nesting season is from late April to late July with one brood raised per year. If there is a disturbance or the nest is lost, the birds may reneest. Plovers nest on beaches, dunes, and washover areas. They also nest on areas where suitable dredged material is deposited. The nest is a shallow scrape in the sand dug by the adults and is usually lined with broken seashells and small pebbles. The female usually lays four eggs. The chicks are mobile and able to feed themselves within hours of hatching. Piping plovers feed on small invertebrates in intertidal surf

zones, mud flats, tidal pool edges, barrier flats, and sand flats and along the ocean and barrier bays. Plovers migrate to breeding grounds from February through early April, and to wintering grounds from late July through September.

**Conservation** - The piping plover was federally listed as a threatened species along the Atlantic Coast on January 10, 1986. In the Northern Great Plains, it is federally listed threatened and in the Great Lakes, endangered. Destruction and degradation of habitat and disturbance during the nesting season by humans and pets are threats to this species. Piping plovers are extremely sensitive to disturbance during the nesting season. Predation by red foxes, skunks, raccoons, feral cats, herring gulls, fish crows, grackles, and ghost crabs is an additional threat to the eggs and young.

**What You Can Do To Help** - Respect all signed or fenced shorebird nesting areas; stay as far away from these areas as possible. The birds and their eggs blend in with the sand and are difficult to see. Young birds are particularly vulnerable before they can fly and can be killed by vehicles or trapped in vehicle tracks. Watch for signs of adult birds calling, displaying a feigned broken wing, or flying or running ahead of you. Keep pets leashed or indoors during the nesting season; both dogs and cats are known to prey on eggs and chicks. Take care not to discard trash or food scraps on beaches used by nesting birds, as they attract predators that may prey on eggs and/or chicks.

To find out more about the piping plover contact:

Virginia Department of Game and Inland Fisheries  
P.O. Box 11104  
Richmond, Virginia 23230  
(804) 367-1000

### References

Cross, R.C. 1991. Piping plover. Pages 501-502 in K. Terwilliger, ed. Virginia's Endangered Species, Proceedings of a Symposium. McDonald and Woodward Publishing Company, Blacksburg, Virginia.

U.S. Fish and Wildlife Service. 1985. Endangered and Threatened Wildlife and Plants: Determination of endangered and threatened status for the piping plover; final rule. Federal Register 50(238):50726-59734.

U.S. Fish and Wildlife Service, Region 5. 1994. You can help protect the piping plover. Newton Corner, Massachusetts.

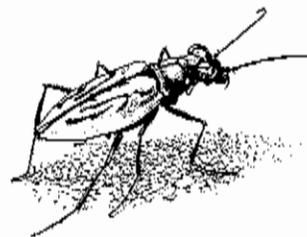
U.S. Fish and Wildlife Service. 1996. Piping plover (*Charadrius melodus*) Atlantic Coast population, revised recovery plan. Hadley, Massachusetts.



U.S. Fish and Wildlife Service  
Virginia Field Office  
6669 Short Lane  
Gloucester, Virginia 23061  
(804) 693-6694  
<http://www.fws.gov>  
August 1999

# Northeastern Beach Tiger Beetle

## *Cicindela dorsalis dorsalis*



© K. Brown-Wing

**Description** - Historically, the northeastern beach tiger beetle was common on coastal beaches from Massachusetts to central New Jersey, and along the Chesapeake Bay in Maryland and Virginia. Currently, the only populations known to exist along the Atlantic Coast are in New Jersey and southeastern Massachusetts. The majority of populations occur in the Chesapeake Bay. This insect measures 0.5 inches in length. It has white to light tan wing covers, often with several fine grayish-green lines, and a bronze-green head and body.

**Life History** - Adult and larval tiger beetles are found on long, wide, dynamic beaches that have little human and vehicular activity, fine sand-particle size, and a high degree of exposure to tidal action. Adult beetles are present from June through August and are active on warm, sunny days where they can be seen feeding, mating, or basking along the water's edge. Adults are

active predators that forage on small invertebrates or scavenge on dead fish, crabs, and amphipods. Larvae are sedentary predators that live in well-formed burrows from which they extend to capture passing prey. During the summer, adult tiger beetles lay eggs on the beach. After hatching, the larvae pass through three developmental stages and emerge from their burrows as adults two years following egg-laying.

**Conservation** - The northeastern beach tiger beetle was federally listed as a threatened species on August 7, 1990. Few northeastern beach tiger beetle sites are protected and many are threatened by human activities. Loss of this beetle from most of its range has been attributed primarily to destruction and disturbance of natural beach habitat from shoreline development, beach stabilization, and high levels of recreational use. Additional threats include pollution, pesticides, oil slicks, and off-road vehicle traffic. Natural limiting factors include winter storms, beach erosion, flood tides, hurricanes, parasites, and predators. Recovery for the tiger beetle depends to a large extent on re-establishing the subspecies across its former range along the Atlantic Coast and protecting it within the Chesapeake Bay.

**What You Can Do To Help** - If you plan to stabilize a tidal beach along the Chesapeake Bay or its tributaries, please contact the U.S. Fish and Wildlife Service.

Such activity may require a federal permit, for more information contact:

U.S. Army Corps of Engineers  
Norfolk District  
803 Front Street  
Norfolk, Virginia 23510-1096  
(757) 441-7652

### References

Knisley, C.B. 1991. Northeastern beach tiger beetle. Pages 233-234 in K. Terwilliger, ed. Virginia's Endangered Species, Proceedings of a Symposium. McDonald and Woodward Publishing Company, Blacksburg, Virginia.

Knisley, C.B., J.I. Luebke, and D.R. Beatty. 1987. Natural history and population decline of the coastal tiger beetle, *Cicindela dorsalis dorsalis* Say (Coleoptera: Cicindelidae). Virginia Journal of Science 38: 293-303.

U.S. Fish and Wildlife Service. 1994. Northeastern beach tiger beetle (*Cicindela dorsalis dorsalis* Say) recovery plan. Hadley, Massachusetts.



U.S. Fish and Wildlife Service  
Virginia Field Office  
6669 Short Lane  
Gloucester, Virginia 23061  
(804) 693-6694  
<http://www.fws.gov>  
August 1999

# Virginia Northern Flying Squirrel

*Glaucomys sabrinus fuscus*



S.G. Recc

**Description** - The Virginia northern flying squirrel is found in the central Appalachians in Virginia and West Virginia. This nocturnal squirrel has soft, silky fur and large black eyes. A loose fold of skin attached at the wrist and ankle is stretched out and used for gliding. The total length of this small mammal is up to 10.5 inches. The northern flying squirrel is commonly misidentified as the southern flying squirrel. The belly fur of the northern squirrel is gray while the southern squirrel is entirely white. The overall color of the northern squirrel is richer while the southern squirrel is a paler color. Weight in adults the northern squirrel ranges from 90-148 grams while the southern squirrel weighs at a range of 50-90 grams.

**Life History** - The Virginia northern flying squirrel uses tree cavities and leaf nests. Both nest types are lined with lichens, sedges, moss, or finely chewed bark. They are usually found in red spruce,

Fraser fir, and northern hardwood forests with a moderate to thick evergreen understory. This squirrel will use nest boxes. All Virginia records for this species are at elevations above 3000 feet. Most occurrences have been recorded in moist forests with widely spaced mature trees and snags. The Virginia northern flying squirrel spends a considerable amount of time of the ground foraging. The primary food source consists of fungi and lichens. This squirrel also eats seeds, buds, fruits, nuts, tree sap, insects, and various animal material. They are found in small family groups and have one litter per year of two or three young born between March and May. Most activity for this nocturnal squirrel is when moonlight is dim or absent. Peak activity occurs from sunset to two hours after and one hour before sunrise. They are active throughout the year.

**Conservation** - The Virginia northern flying squirrel was federally listed as an endangered species on July 1, 1985. Major threats are destruction of habitat by timber harvest, short-rotation pine management, forest conversion to agriculture, and residential development. In the 1970s and 1980s a large amount of habitat was destroyed in West Virginia due to surface mining, ski resort development, and commercial spruce timbering. Pine-bark beetles, introduced pests, severe storms, acid rain, and other factors causing forest die-offs are additional threats.

**What You Can Do To Help** - If you find a squirrel that appears to be the

Virginia northern flying squirrel, take note of the location. Please do not disturb it!

Contact one of the following agencies for assistance:

Virginia Department of Game and Inland Fisheries  
P.O. Box 11104  
Richmond, Virginia 23230  
(804) 367-1000

Virginia Department of Conservation and Recreation  
Division of Natural Heritage  
217 Governor Street, 3rd Floor  
Richmond, Virginia 23219  
(804) 786-7951

U.S. Fish and Wildlife Service  
Virginia Field Office  
6669 Short Lane  
Gloucester, Virginia 23061  
(804) 693-6694

## References

Fics, M.L. and J.F. Pagels. 1991. Northern flying squirrel. Pages 583-584 in K. Terwilliger, ed. Virginia's Endangered Species, Proceedings of a Symposium. McDonald and Woodward Publishing Company, Blacksburg, Virginia.

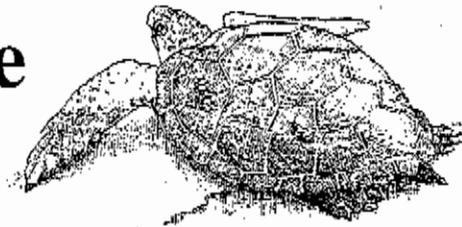
U.S. Fish and Wildlife Service. 1990. Recovery plan for the Appalachian northern flying squirrels (*Glaucomys sabrinus fuscus*) and (*Glaucomys sabrinus coloratus*). Annapolis, Maryland.



U.S. Fish and Wildlife Service  
Virginia Field Office  
6669 Short Lane  
Gloucester, Virginia 23061  
(804) 693-6694  
<http://www.fws.gov>  
January 2001

# Loggerhead Sea Turtle

## *Caretta caretta*



**Description** - The loggerhead sea turtle occurs in the Atlantic, Indian and Pacific Oceans; the Gulf of Mexico; and the Caribbean and Mediterranean Seas. In Virginia, loggerhead sea turtles are found throughout the Chesapeake Bay, around the barrier islands off the Eastern Shore, and off the coast in the Atlantic Ocean. The carapace (top shell) of the adult is hard, heart-shaped, and reddish-brown with an average length of 36.2 inches in the southeastern United States. The entire underside, sides of neck, and parts of the flippers are yellow or whitish. It has a large triangular head and each flipper has two claws.

**Life History** - This turtle is a marine species and spends most of its time in the ocean and estuaries where it feeds, breeds, and migrates. Loggerheads feed mainly on horseshoe crabs, but their diet also includes mollusks, crustaceans, jellyfish, fish, and various sea grasses. The loggerhead is the only sea turtle that nests as far north as Virginia. Loggerheads nest in small

numbers along Virginia's coast and nesting usually occurs from April through September. Females dig shallow pits on the beach to deposit their eggs. Hatchlings emerge as a group and begin to crawl rapidly toward the ocean. After reaching the water, they find food and protection among floating mats of vegetation in the Gulf Stream. They can be found in Virginia's waters from May through November. They migrate south during the winter months.

**Conservation** - The loggerhead sea turtle was federally listed as a threatened species on July 28, 1978. Threats to this species are numerous: nest abandonment occurs from human disturbance; shoreline stabilization structures deter nesting; and beach development results in increased light intensity inland, causing hatchlings to become disoriented and travel inland where they die. Entanglement, ingestion, and contact with marine debris are hazards to sea turtles. Turtles can become entangled in trawling nets, pound nets, crab pot lines, and gill nets and subsequently drown. Boat propellers can wound or kill sea turtles.

**What You Can Do To Help** - Watch out for sea turtles while boating in Virginia's waters! If you find a stranded, wounded, or dead sea turtle please contact one of the following organizations:

Virginia Institute of Marine Science  
(804) 642-7313

Virginia Marine Science Museum  
(757) 437-4949

National Marine Fisheries Service  
(508) 281-9291

### References

Keinath, J.A. and J.A. Musick. 1991. Loggerhead sea turtle. Pages 445-448 in K. Terwilliger, ed. Virginia's Endangered Species, Proceedings of a Symposium. McDonald and Woodward Publishing Company, Blacksburg, Virginia.

Mitchell, J.C. 1994. The reptiles of Virginia. Smithsonian Institution Press, Washington and London.

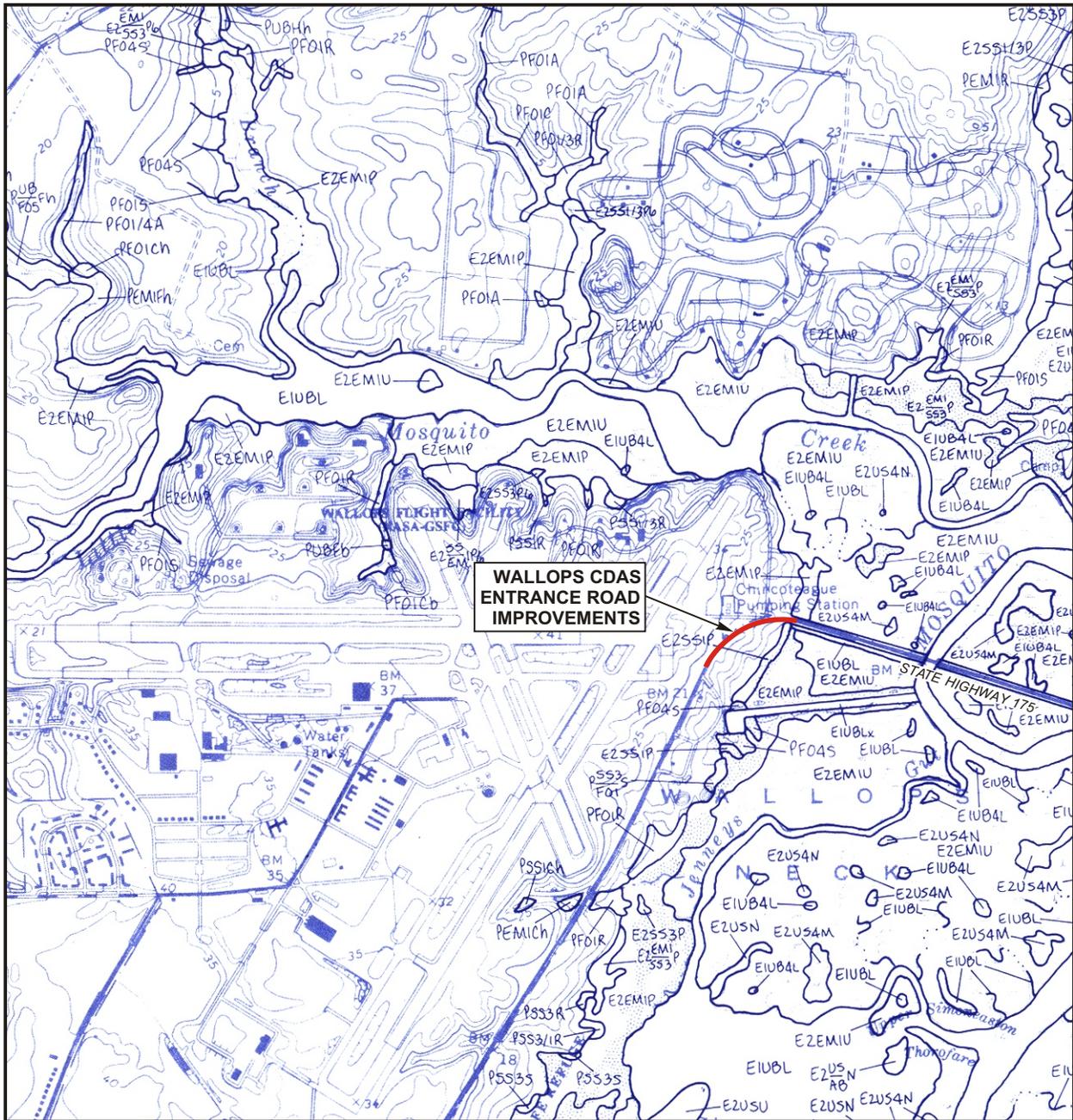
National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1991. Recovery plan for U.S. population of loggerhead turtle. National Marine Fisheries Service, Washington, D.C.

Nelson, D.A. 1988. Life history and environmental requirements of loggerhead turtles. U.S. Fish and Wildlife Service Biological Report 88(23). U.S. Army Corps of Engineers TR EL-86-2(Rcv).

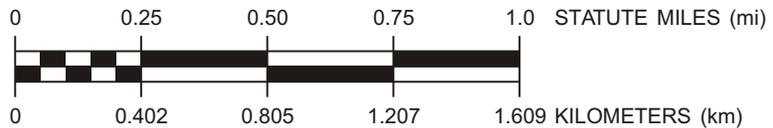


U.S. Fish and Wildlife Service  
Virginia Field Office  
6669 Short Lane  
Gloucester, Virginia 23061  
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August 1999

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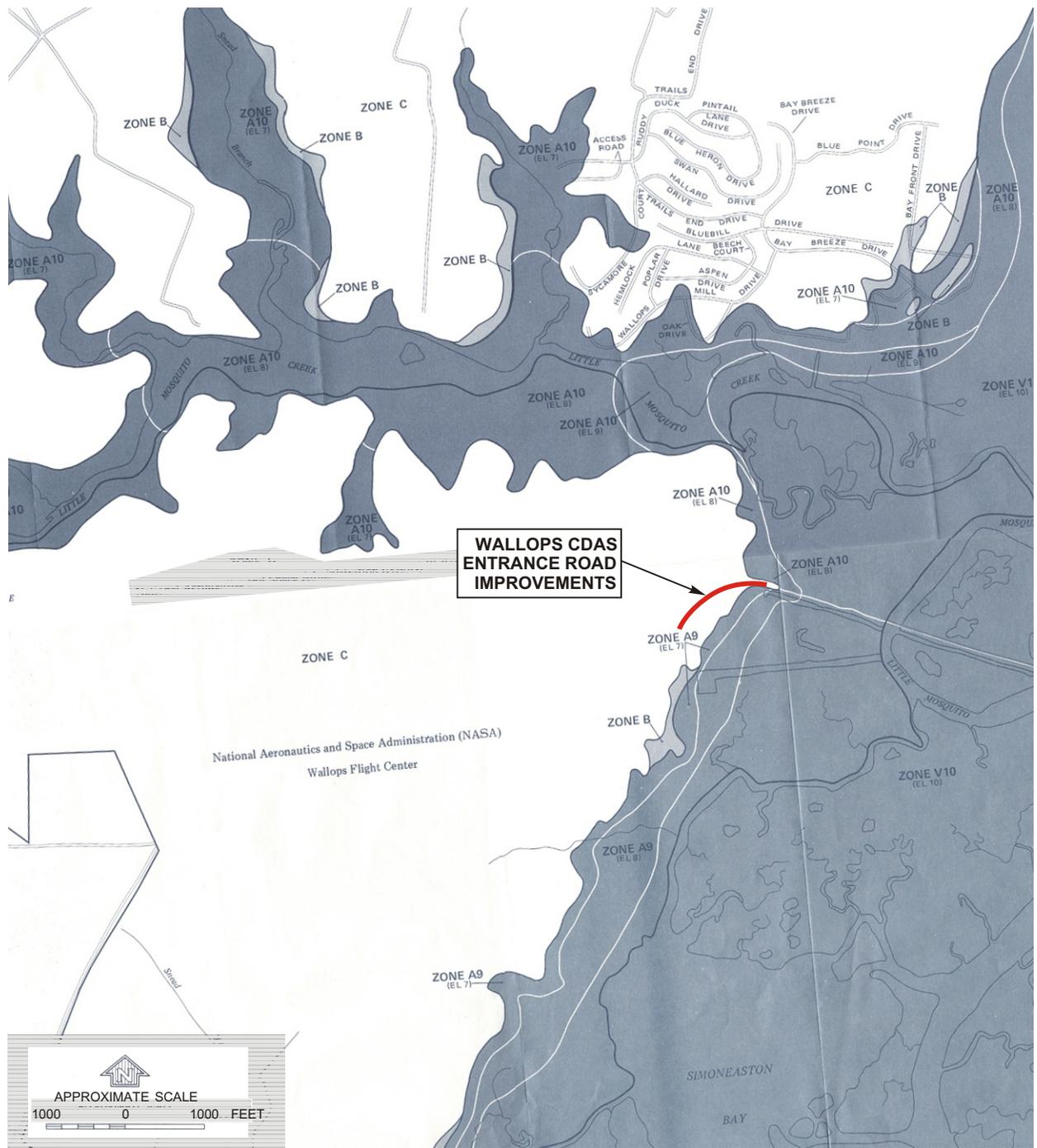
SOURCE: U.S. DEPT. OF THE INTERIOR, FISH AND WILDLIFE SERVICE, NATIONAL WETLANDS INVENTORY (1995), AERIAL PHOTOGRAPHY: 3/88 AND 4/89, BASE MAP: (CHINCOTEAGUE WEST, VA.) PROVIDED BY THE USGS



EXISTING AND PROPOSED FACILITIES — 1:24,000 SCALE

NATIONAL WETLANDS INVENTORY MAP

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FEMA FLOODPLAIN MAP (1 OF 3)

**NATIONAL FLOOD INSURANCE PROGRAM**

**FIRM**  
**FLOOD INSURANCE RATE MAP**

**ACCOMACK  
COUNTY,  
VIRGINIA**  
(UNINCORPORATED AREAS)

**PANEL 30 OF 180**  
(SEE MAP INDEX FOR PANELS NOT PRINTED)

**COMMUNITY-PANEL NUMBER**  
510001 0030 B

**EFFECTIVE DATE:**  
JUNE 1, 1984



Federal Emergency Management Agency

**NATIONAL FLOOD INSURANCE PROGRAM**

**FIRM**  
**FLOOD INSURANCE RATE MAP**

**ACCOMACK  
COUNTY,  
VIRGINIA**  
(UNINCORPORATED AREAS)

**PANEL 70 OF 180**  
(SEE MAP INDEX FOR PANELS NOT PRINTED)

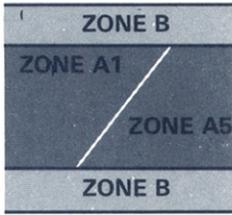
**COMMUNITY-PANEL NUMBER**  
510001 0070 B

**EFFECTIVE DATE:**  
JUNE 1, 1984



Federal Emergency Management Agency

## KEY TO MAP

500-Year Flood Boundary	→	—————
100-Year Flood Boundary	→	—————
Zone Designations*		
100-Year Flood Boundary	→	—————
500-Year Flood Boundary	→	—————
Base Flood Elevation Line With Elevation In Feet**		~~~~~ 513 ~~~~~
Base Flood Elevation in Feet Where Uniform Within Zone**		(EL 987)
Elevation Reference Mark		RM7X
Zone D Boundary	→	—————
River Mile		● M1.5

\*\*Referenced to the National Geodetic Vertical Datum of 1929

### \*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

## NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance and flood plain management purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas. The coastal flooding elevations shown may differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

For adjoining map panels, see separately printed Index To Map Panels.

Coastal base flood elevations shown on this map include the effects of wave action.

Coastal base flood elevations apply only landward of the shoreline shown on this map.

INITIAL IDENTIFICATION:  
DECEMBER 13, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS:  
OCTOBER 1, 1983

FLOOD INSURANCE RATE MAP EFFECTIVE:  
JUNE 1, 1984

FLOOD INSURANCE RATE MAP REVISIONS:

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# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

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W. Tayloe Murphy, Jr.  
Secretary of Natural Resources

Robert G. Burnley  
Director

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

January 22, 2004

Mr. Jeffrey L. Coron  
Project Leader  
SRI International  
1100 Wilson Boulevard, Suite 2800  
Arlington, Virginia 22209

RE: NESDIS Road and Utility Projects at Wallops Flight Facility, Chincoteague, Virginia

Dear Mr. Coron:

We have received a copy of your January 15, 2004 letter to Mr. Harold Winer of this Department's Tidewater Regional Office concerning SRI's preparation of a federal Environmental Assessment for proposed road and utility projects serving the Command and Data Acquisition Station (CDAS) at NASA's Wallops Flight Facility near Chincoteague. According to your letter, the project is to include, and the Environmental Assessment is to analyze, the following:

- Construction of dedicated turn-out lanes from the CDAS access road to Route 175, both directions;
- Construction of a sanitary sewer line connecting the CDAS to NASA's Wallops Flight Facility wastewater treatment facility, the line to be approximately 6,000 feet long;
- Abandonment of an existing sewage drainfield in accordance with Virginia Department of Health recommendations;
- Construction of a potable water supply line, approximately 200 feet long, extending from a CDAS water supply tie-in;
- Removal of a 6-inch water supply well from service, by turning off the electricity supply and securing the well cap; the well is to be kept inactive except for emergencies.

Environmental Impact Review

The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of federal environmental documents and responding to appropriate federal officials on behalf of the Commonwealth. To this end, we ask that federal agencies provide 18-20 copies of the environmental assessment or environmental impact statement (i.e., NEPA documents) for review by state agencies, regional planning district commissions, and local governments which, by law, have regulatory or other jurisdiction over the area or activity in question, or special expertise relating to the undertaking. In the case of the project you describe, the agencies and entities likely to be involved in a review of the NEPA documents are as follows (starred (\*) agencies are included in federal consistency reviews; see "Federal Consistency," below):

Department of Environmental Quality:  
    Office of Environmental Impact Review\*  
    Tidewater Regional Office\*  
    Water Division\*  
    Air Division\*  
    Waste Division  
Department of Game and Inland Fisheries\*  
Department of Conservation and Recreation\*  
Department of Health\*  
Marine Resources Commission\*  
Department of Transportation  
Department of Historic Resources  
Department of Mines, Minerals, and Energy  
Chesapeake Bay Local Assistance Department\*  
Accomack-Northampton Planning District Commission  
Accomack County.

This Office does not coordinate scoping comments for NEPA documents, as a general matter. However, other agencies and offices are encouraged to provide scoping comments as they see fit.

Federal Consistency under the Coastal Zone Management Act

In addition to coordinating the review of NEPA, DEQ's Office of Environmental Impact Review coordinates federal consistency reviews for projects affecting coastal resources and uses in Virginia under the Coastal Zone Management Act of 1972, as amended. Under the Act, any proposed federal action must be conducted in a manner consistent, to the maximum extent practicable, with the Virginia Coastal Resources Management Program (VCP). The VCP consists of a network of enforceable policies

Mr. Jeffrey L. Coron  
Page 3

administered by several agencies. In order to carry out the project consistently with the VCP, NASA must comply with all the applicable requirements in the Enforceable Policies of the VCP (see enclosed listing). In addition, we recommend that NASA take into account the Advisory Policies for Geographic Areas of Particular Concern and the Advisory Policies for Shorefront Access Planning and Protection (enclosed) in planning for the proposed capital improvements.

The federal consistency determination may be included in the environmental assessment or impact statement for these improvements.

I hope this information is helpful to you. If you have questions about our environmental review or consistency review processes, please feel free to contact me (telephone (804) 698-4325) or Charles Ellis of this Office (telephone (804) 698-4488).

Sincerely,



Ellie L. Irons  
Program Manager  
Office of Environmental Impact Review

Enclosures

cc: Harold J. Winer, DEQ-TRO



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

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Robert G. Burnley  
Director

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

### Attachment 1

### Enforceable Regulatory Programs comprising Virginia's Coastal Resources Management Program (VCP)

- a. Fisheries Management - The program stresses the conservation and enhancement of finfish and shellfish resources and the promotion of commercial and recreational fisheries to maximize food production and recreational opportunities. This program is administered by the Marine Resources Commission (VMRC); Virginia Code §28.2-200 to §28.2-713 and the Department of Game and Inland Fisheries (DGIF); Virginia Code §29.1-100 to §29.1-570.

The State Tributyltin (TBT) Regulatory Program has been added to the Fisheries Management program. The General Assembly amended the Virginia Pesticide Use and Application Act as it related to the possession, sale, or use of marine antifoulant paints containing TBT. The use of TBT in boat paint constitutes a serious threat to important marine animal species. The TBT program monitors boating activities and boat painting activities to ensure compliance with TBT regulations promulgated pursuant to the amendment. The VMRC, DGIF, and Virginia Department of Agriculture Consumer Services (VDACS) share enforcement responsibilities; Virginia Code §3.1-249.59 to §3.1-249.62.

- b. Subaqueous Lands Management - The management program for subaqueous lands establishes conditions for granting or denying permits to use state-owned bottomlands based on considerations of potential effects on marine and fisheries resources, tidal wetlands, adjacent or nearby properties, anticipated public and private benefits, and water quality standards established by the Department of Environmental Quality (DEQ). The program is administered by the Marine Resources Commission; Virginia Code §28.2-1200 to §28.2-1213.
- c. Wetlands Management - The purpose of the wetlands management program is to preserve wetlands, prevent their despoliation, and accommodate economic development in a manner consistent with wetlands preservation.
- (1) The tidal wetlands program is administered by the Marine Resources Commission; Virginia Code §28.2-1301 through §28.2-1320.
  - (2) The Virginia Water Protection Permit program administered by DEQ includes protection of wetlands --both tidal and non-tidal; Virginia Code §62.1-44.15:5 and Water Quality Certification pursuant to Section 401 of the Clean Water Act.

- d. Dunes Management - Dune protection is carried out pursuant to The Coastal Primary Sand Dune Protection Act and is intended to prevent destruction or alteration of primary dunes. This program is administered by the Marine Resources Commission; Virginia Code §28.2-1400 through §28.2-1420.
- e. Non-point Source Pollution Control - (1) Virginia's Erosion and Sediment Control Law requires soil-disturbing projects to be designed to reduce soil erosion and to decrease inputs of chemical nutrients and sediments to the Chesapeake Bay, its tributaries, and other rivers and waters of the Commonwealth. This program is administered by the Department of Conservation and Recreation; Virginia Code §10.1-560 et seq.  
  
(2) Coastal Lands Management is a state-local cooperative program administered by the Chesapeake Bay Local Assistance Department and 84 localities in Tidewater (see i) Virginia; Virginia Code §10.1-2100 -10.1-2114 and 9 VAC10-20 et seq.
- f. Point Source Pollution Control - The point source program is administered by the State Water Control Board (DEQ) pursuant to Virginia Code §62.1-44.15. Point source pollution control is accomplished through the implementation of:
  - (1) the National Pollutant Discharge Elimination System (NPDES) permit program established pursuant to Section 402 of the federal Clean Water Act and administered in Virginia as the Virginia Pollutant Discharge Elimination System (VPDES) permit program.
  - (2) The Virginia Water Protection Permit (VWPP) program administered by DEQ; Virginia Code §62.1-44.15:5 and Water Quality Certification pursuant to Section 401 of the Clean Water Act.
- g. Shoreline Sanitation - The purpose of this program is to regulate the installation of septic tanks, set standards concerning soil types suitable for septic tanks, and specify minimum distances that tanks must be placed away from streams, rivers, and other waters of the Commonwealth. This program is administered by the Department of Health (Virginia Code §32.1-164 through §32.1-165).
- h. Air Pollution Control - The program implements the federal Clean Air Act to provide a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards. This program is administered by the State Air Pollution Control Board (Virginia Code §10.1-1300 through §10.1-1320).
- (i) Coastal Lands Management is a state-local cooperative program administered by the Chesapeake Bay Local Assistance Department and 84 localities in Tidewater, Virginia established pursuant to the Chesapeake Bay Preservation Act; Virginia Code §10.1-2100 -10.1-2114 and Chesapeake Bay Preservation Area Designation and Management Regulations; Virginia Administrative Code 9 VAC10-20 et seq.

## Attachment 2

### Advisory Policies for Geographic Areas of Particular Concern

- a. Coastal Natural Resource Areas - These areas are vital to estuarine and marine ecosystems and/or are of great importance to areas immediately inland of the shoreline. Such areas receive special attention from the Commonwealth because of their conservation, recreational, ecological, and aesthetic values. These areas are worthy of special consideration in any planning or resources management process and include the following resources:
- a) Wetlands
  - b) Aquatic Spawning, Nursery, and Feeding Grounds
  - c) Coastal Primary Sand Dunes
  - d) Barrier Islands
  - e) Significant Wildlife Habitat Areas
  - f) Public Recreation Areas
  - g) Sand and Gravel Resources
  - h) Underwater Historic Sites.
- b. Coastal Natural Hazard Areas - This policy covers areas vulnerable to continuing and severe erosion and areas susceptible to potential damage from wind, tidal, and storm related events including flooding. New buildings and other structures should be designed and sited to minimize the potential for property damage due to storms or shoreline erosion. The areas of concern are as follows:
- i) Highly Erodible Areas
  - ii) Coastal High Hazard Areas, including flood plains.
- c. Waterfront Development Areas - These areas are vital to the Commonwealth because of the limited number of areas suitable for waterfront activities. The areas of concern are as follows:
- i) Commercial Ports
  - ii) Commercial Fishing Piers
  - iii) Community Waterfronts

Although the management of such areas is the responsibility of local government and some regional authorities, designation of these areas as Waterfront Development Areas of Particular Concern (APC) under the VCRMP is encouraged. Designation will allow the use of federal CZMA funds to be used to assist planning for such areas and the implementation of such plans. The VCRMP recognizes two broad classes of priority uses for waterfront development APC:

- i) water access dependent activities;
- ii) activities significantly enhanced by the waterfront location and complementary to other existing and/or planned activities in a given waterfront area.

## Attachment 2 con't

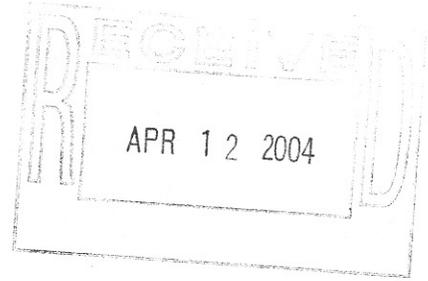
### Advisory Policies for Shorefront Access Planning and Protection

- a. Virginia Public Beaches - Approximately 25 miles of public beaches are located in the cities, counties, and towns of Virginia exclusive of public beaches on state and federal land. These public shoreline areas will be maintained to allow public access to recreational resources.
- b. Virginia Outdoors Plan - Planning for coastal access is provided by the Department of Conservation and Recreation in cooperation with other state and local government agencies. The Virginia Outdoors Plan (VOP), which is published by the Department, identifies recreational facilities in the Commonwealth that provide recreational access. The VOP also serves to identify future needs of the Commonwealth in relation to the provision of recreational opportunities and shoreline access. Prior to initiating any project, consideration should be given to the proximity of the project site to recreational resources identified in the VOP.
- c. Parks, Natural Areas, and Wildlife Management Areas - Parks, Wildlife Management Areas, and Natural Areas are provided for the recreational pleasure of the citizens of the Commonwealth and the nation by local, state, and federal agencies. The recreational values of these areas should be protected and maintained.
- d. Waterfront Recreational Land Acquisition - It is the policy of the Commonwealth to protect areas, properties, lands, or any estate or interest therein, of scenic beauty, recreational utility, historical interest, or unusual features which may be acquired, preserved, and maintained for the citizens of the Commonwealth.
- e. Waterfront Recreational Facilities - This policy applies to the provision of boat ramps, public landings, and bridges which provide water access to the citizens of the Commonwealth. These facilities shall be designed, constructed, and maintained to provide points of water access when and where practicable.
- f. Waterfront Historic Properties - The Commonwealth has a long history of settlement and development, and much of that history has involved both shorelines and near-shore areas. The protection and preservation of historic shorefront properties is primarily the responsibility of the Department of Historic Resources. Buildings, structures, and sites of historical, architectural, and/or archaeological interest are significant resources for the citizens of the Commonwealth. It is the policy of the Commonwealth and the VCRMP to enhance the protection of buildings, structures, and sites of historical, architectural, and archaeological significance from damage or destruction when practicable.

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# The Eastern Shore News

Tasley, Virginia



## Certificate of Publication

We, Gannett Publications, publishers of The Eastern Shore News, a bi-weekly newspaper printed at Tasley, State of Virginia, do hereby certify that the enclosed notice has been published.

Published on: April 3

in the said Eastern Shore News aforementioned.

Attest: Bill Sterling, General Manager

Sandra Johnson, Legal Advertising 

Dated today: 04-07-04

Printer's Fee: \$166.80

*Eastern Shore News*  
*P.O. Box 288, Tasley, Virginia 23441*  
*Phone: 757-787-4440, Fax: 757-787-2370*

A copy of the advertisement is attached.

### NOTICE OF AVAILABILITY

**Draft Environmental Assessment (EA):  
Proposed Construction of Turnout Lanes from  
Virginia State Highway 175 to the National  
Environmental Satellite, Data, and Informa-  
tion Service (NESDIS) Wallops Command  
and Data Acquisition Station (CDAS),  
Wallops Island, Virginia**

NESDIS, an agency of the National Oceanic and Atmospheric Administration (NOAA), operates the Wallops CDAS located in Wallops Island, Virginia. NESDIS proposes to improve the intersection of Virginia State Highway 175 and the Wallops CDAS entrance road between September 2004 and April 2005. NESDIS announces the availability of the Draft EA for this proposed roadway improvement. The Draft EA examines the potential changes in the human and natural environments that could result from the proposed improvement. For comparison purposes, the document also addresses the alternative of taking no action.

The Draft EA has been prepared in accordance with the requirements of the President's Council on Environmental Quality, Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 Code of Federal Regulations 1500 et seq.) and NOAA Administrative Order 216-6, Environmental Review Procedures for Implementing the National Environmental Policy Act. In accordance with federal regulations, NOAA has completed the environmental review process.

Any comments or questions on the Draft EA must be received by May 3, 2004. Please direct any requests for the Draft EA to:

Mr. Jeffrey Coron  
SRI International  
Suite 2800  
1100 Wilson Boulevard  
Arlington, VA 22209  
Phone: (703) 247-8484

em/04/03/15

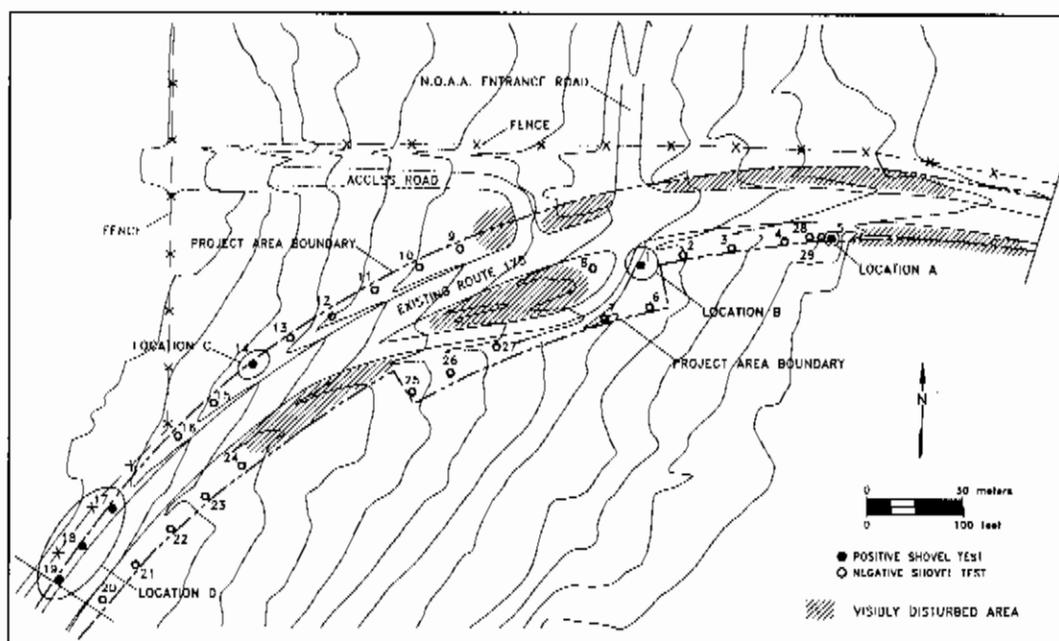
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**APPENDIX B**

**ARCHAEOLOGICAL SURVEY REPORT**

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Archaeological Survey of the Proposed Route 175  
Turnout Lanes Project, National Environmental  
Satellite, Data, and Information Service (NESDIS),  
Wallops Command and Data Acquisition Station  
(CDAS), Wallops Island, Accomack County, Virginia



*Prepared for:*  
SRI International

*Prepared by:*  
William and Mary Center for Archaeological Research

Archaeological Survey of the Proposed Route 175  
Turnout Lanes Project, National Environmental  
Satellite, Data, and Information Service (NESDIS),  
Wallops Command and Data Acquisition Station  
(CDAS), Wallops Island, Accomack County, Virginia

---

VDHR File No. 2004-0045  
WMCAR Project No. 04-15

*PREPARED FOR:*

SRI International  
1100 Wilson Boulevard, Suite 2800  
Arlington, Virginia 22209  
(703) 247-8484

*PREPARED BY:*

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P.O. Box 8795  
Williamsburg, Virginia 23187-8795  
(757) 221-2580

*AUTHOR:*

Elizabeth J. Monroe

*PROJECT DIRECTOR:*

Joe B. Jones

*JUNE 22, 2004*

## MANAGEMENT SUMMARY

The William and Mary Center for Archaeological Research conducted an archaeological survey of the project corridor for proposed improvements to Virginia State Highway 175, Accomack County, Virginia, on May 25 and 26, 2004. The intent of the survey was to provide specific information concerning the nature and distribution of archaeological resources within the project corridor. This survey was conducted under an agreement with SRI International on behalf of the National Oceanic and Atmospheric Administration.

The proposed project is located in the northern portion of Accomack County, west of the island of Chincoteague, along Route 175. The project consists of the construction of turnout lanes from Route 175 to the National Environmental Satellite, Data, and Information Service (NESDIS), Wallops Command and Data Acquisition Station (CDAS), and the removal of the current jug handle access lane on the south side of Route 175. The survey area consisted of a 335-m (1,100-ft.) stretch of Route 175, with an average right-of-way of 27 m (90 ft.), for a total area of approximately 0.9 ha (2.3 acres). The scope of work for the survey included review of ar-

chaeological site records and the report library at the Virginia Department of Historic Resources, and systematic field survey of the project corridor.

Background research revealed seven previously recorded archaeological sites within 1.6 km (1.0 mi) of the project corridor. Field survey of the Route 175 project corridor included systematic pedestrian survey involving shovel testing. Shovel testing was conducted within the project corridor along two transects paralleling the existing road at intervals of not more than 15 m (50 ft.) in undisturbed areas with slopes of 10 percent or less. Areas with obvious recent disturbance were avoided, such as areas that had been built up as part of the causeway to Chincoteague Island. Six of the 29 shovel tests were positive for artifacts. The six positive shovel tests represent four archaeological locations. Locations A, B, C, and D consist of isolated finds in redeposited fill and therefore have very limited research potential. By definition, Locations A, B, C, and D are not eligible for the NRHP under Criterion D (Criteria A–C are not considered applicable) and no further work is necessary.

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# 1: Project Background

---

## INTRODUCTION

The William and Mary Center for Archaeological Research (WMCAR) conducted an archaeological survey of the project corridor for proposed improvements to Virginia State Highway 175, Accomack County, Virginia, on May 25 and 26, 2004 (Figure 1). This archaeological survey was conducted in a manner consistent with the Secretary of the Interior's *Standards for Identification* (49 FR 44720-23) and Virginia's *Guidelines for Archaeological Investigations in Virginia*. The intent of the survey was to provide specific information concerning the nature and distribution of archaeological resources within the approximate two (2) acre project corridor. This survey was conducted under an agreement with SRI International on behalf of the National Oceanic and Atmospheric Administration (NOAA).

Correspondence between the NOAA and the Virginia Department of Historic Resources (VDHR) Office of Review and Compliance resulted in the recommendation that an archaeological identification survey (Phase I) be performed in advance of any construction along Virginia State Route 175 (Appendix B). The VDHR noted that a cultural resource assessment of the NASA Wallops Flight Facility resulted in a predictive model for historic and prehistoric sites (URS Group, Inc. and EG&G Technical Services, Inc [URS] 2003). This model is based on such factors as landform, soils, degree of disturbance, and documentary evidence. The area of potential effect is described in the assessment as having moderate sensitivity for prehistoric resources and high sensitivity for historic resources, particularly those relating to his-

toric maritime archaeological sites. VDHR also observed that previous construction in the project corridor may have reduced its sensitivity for archaeological resources.

The investigation was carried out under the general supervision of Project Director Joe B. Jones. Elizabeth J. Monroe was responsible for organization and implementation of the archaeological field program and preparation of the final report. Ms. Monroe was assisted in the field by WMCAR staff members Jack Aube, Courtney Birkett, Jefferson Green, and Fred Lumb. The final report was produced by David W. Lewes, and final illustrations were prepared by Eric A. Agin. All project-related documentation and artifacts are temporarily stored at the WMCAR in Williamsburg, Virginia, referenced under project number 04-15 until final disposition can be determined and arranged.

## DESCRIPTION AND ENVIRONMENTAL SETTING OF THE PROJECT AREA

The proposed project is located in the northern portion of Accomack County, west of the island of Chincoteague, along Route 175. The project consists of the construction of turnout lanes from Route 175 to the National Environmental Satellite, Data, and Information Service (NESDIS), Wallops Command and Data Acquisition Station (CDAS), and the removal of the current jug-handle access lane on the south side of Route 175 (Figure 2). This will include widening approximately 335 m (1,100 ft.) of Route 175 to accommodate a left turn lane in the center of the roadway, widening approximately 36.6 m (120 ft.) of the west-

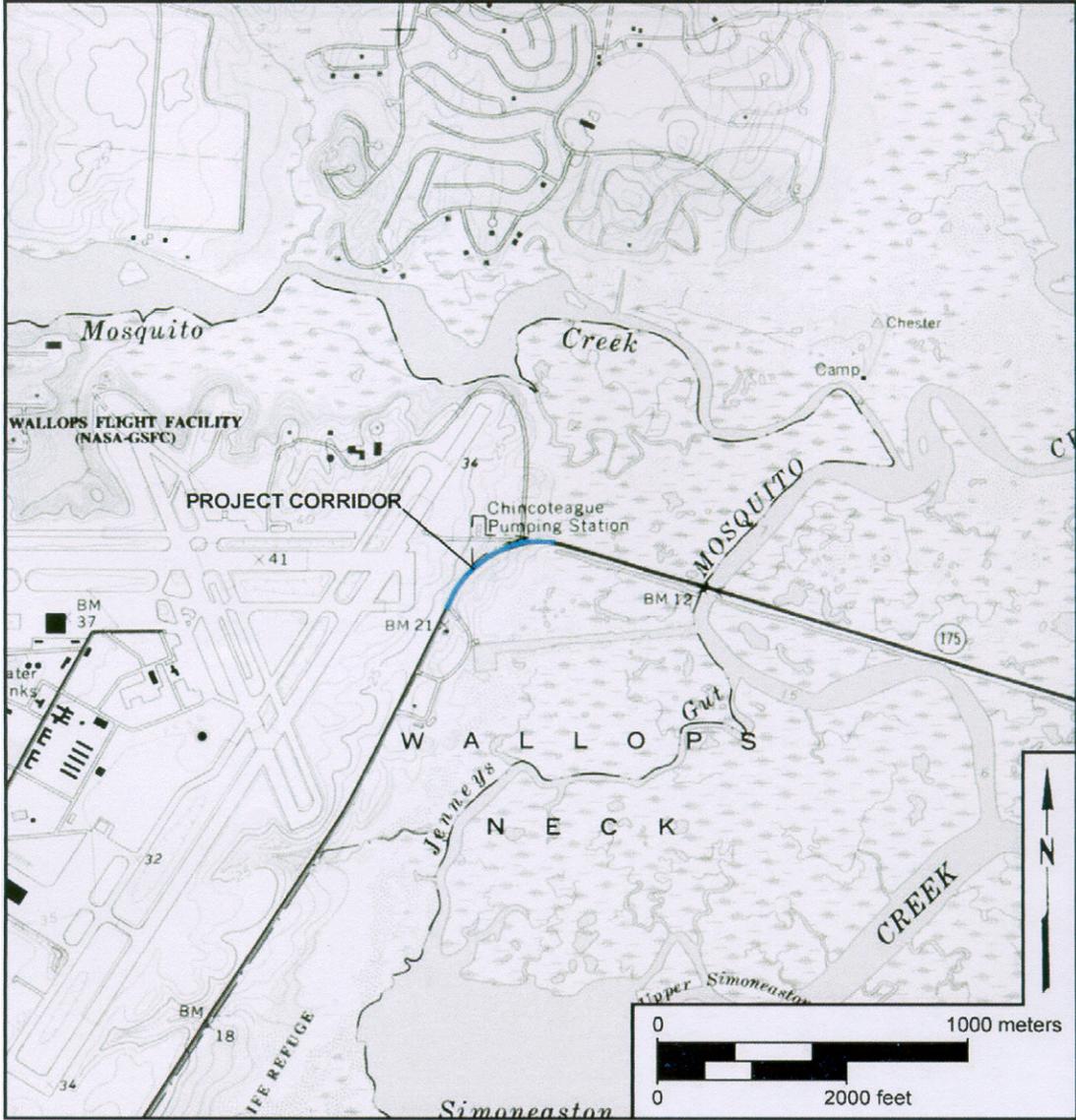


Figure 1. Project corridor and environs (USGS 1989).

bound lane of Route 175 and approximately 58 m (190 ft.) of the existing right turn lane onto the Wallops CDAS access road, and adding a new 24-m-long (80-ft.-long) right turn taper from Route 175 onto the unnamed Chincoteague well field access road. The proposed turnout lane improvements will require widening of the existing 15-m-wide (50-ft.-wide) Virginia Department of Transportation easement for Route 175 to 27 m (90 ft.).

The project corridor is located within the mainland physiographic province of the Eastern Shore, which is, in turn, part of the Atlantic Coastal Plain province (Peacock and Edmonds 1994:3; Stevens 1920:33). The landscape in the immediate vicinity of the project area is currently open and grassy, and slopes to the east. The area to the north of the road is an open field/runway. South of the road,

the grass gives way to scrub, then tidal wetlands. Soils typical of the area are Molena loamy sand and Udorthents and Udipsamments, all of which are present on coastal plain uplands and stream terraces (Peacock and Edmonds 1994:35, 40). Udorthents and Udipsamments can also be found in marshland. Northern Accomack County has been described as "prevailingly level," but with a rolling land surface in areas (Stevens 1920:6). This gently undulating surface is visible from the road to the north of the project corridor, although filling and grading for the runways at Wallops Flight Facility have altered the natural topography. The entire landscape adjacent to the road has been engineered, and the easternmost section of the project area is situated on fill deposited to create a road-bed or causeway leading to the bridge to Chincoteague Island.

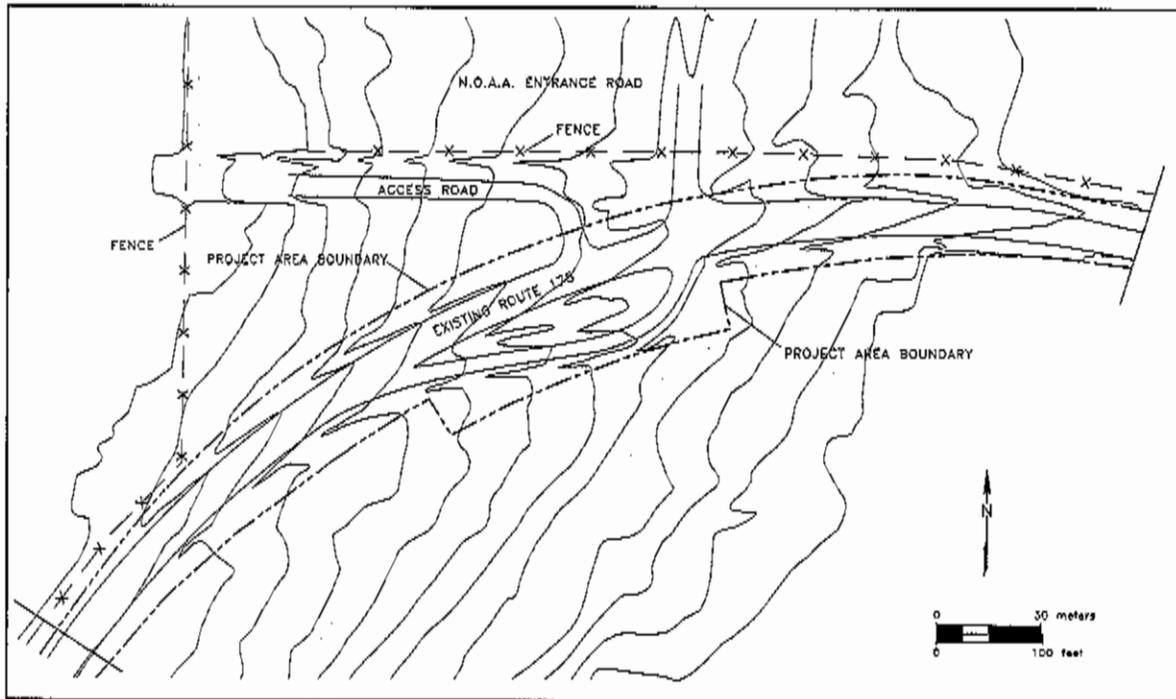


Figure 2. Project corridor plan.

## 2: Archaeological Survey Strategy

---

The survey expectations set forth in this chapter were generated from review and inspection of archival/cartographic resources, archaeological site records, and past reports of professional archaeological work relevant to the project corridor archived at the VDHR and the WMCAR. Site records for all sites within 1.6-km (1.0-mi.) radius of the project corridor were reviewed to help generate archaeological expectations for the field survey (Figure 3). Examination of past cultural resource management reports associated with other projects in the vicinity of NESDIS Wallops CDAS were helpful for providing expectations regarding prehistoric and historic archaeological resources for the project corridor (Stuck et al. 1995; Telemarc, Inc. 1991; URS 2003). Analysis and review of secondary histories of the immediate region at WMCAR and the Earl Gregg Swern Library of the College of William and Mary in Williamsburg also helped provide expectations regarding historical archaeological resources for the project corridor.

The review of archaeological site files on VDHR's Data Sharing System (DSS) augmented by a visit to the VDHR Archives indicated that a total of seven archaeological sites have been previously recorded within 1.0 mile (1.6 km) of the project corridor (Table 1; see Figure 3).

### PREVIOUS PREHISTORIC RESEARCH NEAR THE PROJECT CORRIDOR

A total of seven previously identified sites within 1.6 km (1.0 mi.) of the project corridor were found to have prehistoric components (see Table 1, Fig-

ure 3). Sites 44AC16, 44AC17, 44AC19, 44AC20, 44AC21, and 44AC22 were identified by Wayne Clark of the Virginia State Library, and recorded in 1975. All of these sites are located along the north bank of Mosquito Creek (see Figure 3), and are represented by low-density scatters of prehistoric artifacts that indicate short-term occupation. Sites 44AC19 and 44AC20 have been designated as Late Woodland based on the presence of Townsend Series ceramics. Sites 44AC16 and 44AC17 are more generally designated as Woodland on the basis of prehistoric ceramics of undetermined age. Sites 44AC21 and 44AC22 are prehistoric, but precise temporal affiliation could not be assigned. Site 44AC546, also located on Mosquito Creek, was identified by Darrin Lowery of CWAR, Inc. in 2001. It is tentatively assigned to the Woodland period, although no ceramic artifacts were collected.

### ANTICIPATED SITE TYPES AND LOCATIONAL MODELS

In the absence of any written documentation, our knowledge of cultures in North America prior to European colonization is based solely on the results of archaeological research. Such research has identified regional patterns of contemporaneous cultural variation, as well as the identification of local and regional cultural process, i.e., perceived gradual changes in culture over time. In turn, consideration of these patterns in light of the results of paleoenvironmental studies has resulted in the formation of general models of prehistoric subsistence, settlement, sociocultural development, and

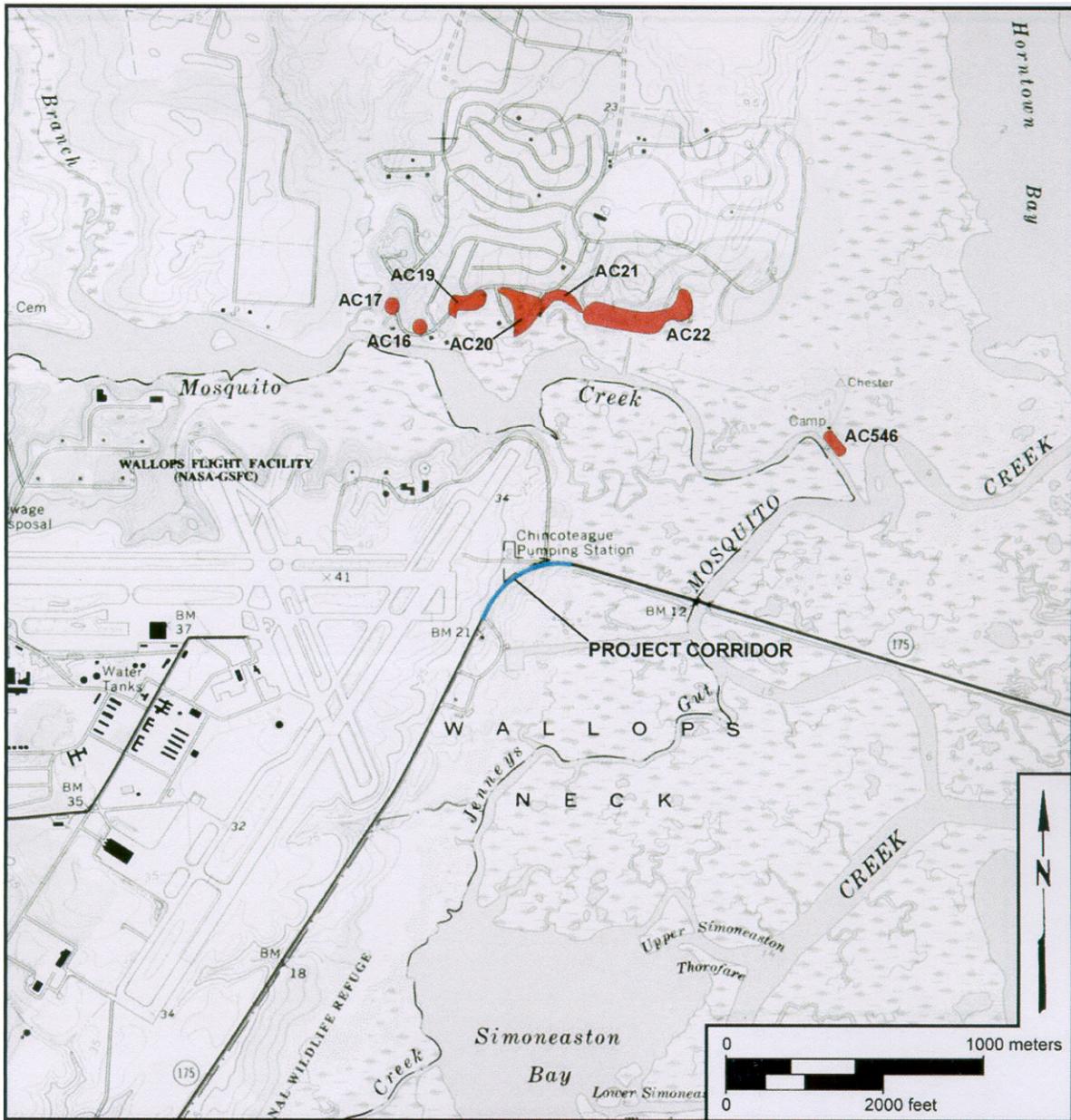


Figure 3. Previously identified archaeological sites within a 1.6-km (1-mi.) radius of the project corridor.

SITE	PERIOD	TYPE	RECORDED BY (SURVEYED BY)/DATE
44AC16	Woodland	Unknown	Virginia State Library (W. Clark)/1975
44AC17	Woodland	Unknown	Virginia State Library (W. Clark)/1975
44AC19	Late Woodland	Unknown	Virginia State Library (W. Clark)/1975
44AC20	Late Woodland	Unknown	Virginia State Library (W. Clark)/1975
44AC21	Unknown prehistoric	Unknown	Virginia State Library (W. Clark)/1975
44AC22	Unknown prehistoric	Unknown	Virginia State Library (W. Clark)/1975
44AC546	Unknown prehistoric 19th–20th c.	Campsite Unknown	CWAR, Inc. (D. Lowery)/2001

Table 1. Summary of previously identified archaeological sites within a 1.6-km (1-mi.) radius of the project corridor.

interaction from the Paleoindian period (ca. 12,000–8000 B.C.) through the Late Woodland period (A.D. 900–1600).

For the purposes of a Phase I archaeological survey, models of settlement patterning, in particular, are the most helpful in achieving site identification and characterization. Based on evidence gathered through regional studies and local surveys, a general model of prehistoric settlement patterning can be postulated for Accomack County and the Eastern Shore environs. Specific site locations can vary considerably due to topographic factors, soil types, and numerous microenvironmental constraints. For planning purposes, however, a model is presented that provides a basic illustration of sensitivity zones where significant archaeological resources might be expected to occur. Data collected for a cultural resources assessment of the Wallops Flight Facility suggest that the project corridor falls within an area of moderate sensitivity for prehistoric resources (URS 2003:Figure 16).

#### *Paleoindian-Period Resources (ca. 12,000–8000 B.C.)*

It is generally believed that the first people to occupy North America arrived from Asia around 12,000 years ago. These people were highly mobile hunter-gatherers who traveled in small groups or bands, following a seasonal round of subsistence activities. Hallmarks of the presence of these early Americans are the fluted projectile point and, more

generally, a tool kit often fashioned from a restricted range of cherts, jaspers, and silicified slates (Gardner 1980:14–15). These preferred lithic resources are fairly limited in extent, and quarrying sites would be located well outside the vicinity of the project area. Outlying ephemeral hunting campsites, likely chosen based on their proximity to water sources and high potential for attracting game, could occur within this region, but none have been identified thus far. Five Paleoindian sites have been identified in Accomack County, but none within the immediate vicinity of the project area. Therefore, previous research indicates a low potential for Paleoindian archaeological resources to occur within the project area. The inundation of large areas of coastline due to rising sea levels has also potentially blurred any evidence of Paleoindian sites.

#### *Archaic- and Woodland-Period Resources (ca. 8000 B.C.–A.D. 1600)*

Early Archaic-period settlement and subsistence patterns tend to display remarkable continuity with patterns of the Paleoindian period (Custer 1990:34). The advent of an essentially modern Holocene environment, accompanied by glacial retreat and global sea level rise, led to changes in seasonal vegetation patterns. Freshwater marshes formed and appear to have been the focus of settlement, especially on the Chesapeake Bay side. These environmental changes contributed to a gradual

change in subsistence patterns, which began to focus more on seasonal hunting and gathering and aquatic resources. Archaic peoples also began to diminish their reliance on cherts and jaspers, with increasing use of more locally and readily available quartz and quartzite for their tools. With the onset of the Middle Archaic period, both base camps and transient hunting camps began to occur with more frequency and wider distribution throughout the study area.

Based on a review of the settings of previously identified prehistoric sites with Archaic-period components in this region, the primary locations likely to contain Archaic-period sites include the margins of streams and swamps, as well as terraces situated adjacent to the heads of ravines with water sources. Base camps, in particular, are typically found along the margins of rivers and swamps in the Coastal Plain (Gardner 1980:25–27). It is likely that many such sites have been drowned by subsequent sea level rise. Small, limited-activity ephemeral campsites dating from the Middle Archaic and later prehistoric periods are typically marked by the remains of lithic curation. These sites are fairly widespread in upland terrace settings adjacent to the headwaters of streams. Research conducted by Mid-Atlantic Archaeological Research, Inc. (1980) indicated that the barrier islands of Maryland and Virginia were possibly occupied during the Archaic period at a time when sea level was lower and the islands existed as inland topographic formations. Remains of Archaic occupations of these areas have been found in Delaware and along the Atlantic Coast. The present-day waterfront of Chincoteague could contain numerous Archaic camp sites. There is a moderate potential for the occurrence of Archaic-period resources in the project area, particularly in inundated areas and areas that have been subject to filling in modern times; these resources would most likely be the remains of small, subsistence-related, limited-activity camp sites.

Around 3000 B.C., drastic environmental changes in the Chesapeake region resulted in the

development of extensive, rich, and stable coastal resources, such as shellfish beds and anadromous fish spawning areas. With these changes, resource procurement partially shifted to river floodplain and estuarine areas during the Late Archaic through Woodland periods. Contemporaneous ephemeral procurement sites in inland settings indicate, however, that significant hunting and gathering of terrestrial resources continued (Gardner 1982:56–58; Custer 1986:56). A series of Woodland period sites have been identified on northern bank of Mosquito Creek, less than a mile from the project corridor (Table 1, Figure 3). While site function has not been assigned to these sites, the deposits are shallow. Thus, the setting of much of the project area indicates a low to moderate potential for the occurrence of ephemeral resource procurement sites dating to the Woodland period as well as to the Middle and Late Archaic periods.

## HISTORICAL CONTEXT AND ANTICIPATED HISTORIC SITE TYPES

Historical research for this project was conducted at the Library of Virginia in Richmond, the Virginia Historical Society in Richmond, and the Earl Gregg Swem Library at the College of William and Mary in Williamsburg. This overview includes a background history of the project area from a regional perspective, as well as a discussion of the specific context in which Route 175 and associated resources are found. In developing a general historic context for the project area, reliable secondary resources were consulted. Some of the most helpful of these were the works of Susie May Ames (1950, 1959), *The Eastern Shore of Virginia 1603–1964* by Nora Miller Turman (1964), and *Virginia's Eastern Shore: A History of Northampton and Accomack Counties* by Ralph T. Whitelaw (1951). Much of this material was summarized in a 1995 report produced by the WMCAR (Stuck et al. 1995). Additional data specific to the project area were gleaned from primary resources such as historic maps, newspapers, and magazine articles, as

well as a recent cultural resources assessment of the NASA Wallops Flight Facility (URS 2003). According to this assessment, the project corridor falls within an area of high sensitivity for historic resources (URS 2003:Figure 17).

#### *Settlement to Society (1607–1750)*

As early as the mid-sixteenth century, portions of Virginia's Eastern Shore were probably visited by European explorers (Wise 1967:49). In 1608, Captain John Smith visited the peninsula and carefully recorded the bay side shoreline (Wise 1967; Turman 1964; Smith 1610). The Accawmacks were the first Native Americans encountered on the Eastern Shore by English explorers and also the first with whom trade was established. Several other native groups were also present in the area during the early seventeenth century. These included the Accohanocks and the Natiquaks (Wise 1967:51). Smith's map identifies native settlements along the peninsula's bay side, but the project area is only sketchily depicted because Smith did not survey the ocean side (Smith 1610).

By the 1620s, growing settlements of European immigrants were already established on the Eastern Shore, and in 1634 Accomack became one of the eight original shires or counties in Virginia (Ames 1959). The first land grants on the peninsula were along three major creeks on the bay side (Perry 1990). This area was chosen primarily for its safe harbors and potential for strategic defense. This bay side settlement pattern would continue on the peninsula until after the mid-seventeenth century (Perry 1990).

The name Wallop became prominent in the area in 1664. That year John Wallop received a land patent of 1000 acres and was appointed deputy Surveyor-General (URS 2003:3.16). Additional land patents added 2700 acres to the Wallop holdings. These lands comprise what is today the Wallops Island Flight Facility, including the project area.

By the first half of the eighteenth century, much of Accomack County's economy depended on the

cultivation of tobacco, as was common across Virginia. Chincoteague and other barrier islands seem to have been exceptions to this rule, with local economies based on livestock production supplemented with subsistence-level agriculture (Ames 1950).

No sites dating to this period have been identified within one mile of the project area.

#### *Colony to Nation (1750–1789)*

Prior to the Revolution, Accomack County experienced a major shift in its agricultural economy. Extensive cultivation of tobacco on the Eastern Shore had exhausted the soil, and many planters switched to alternative crops (Ames 1959). These new crops consisted primarily of grains and corn; an increased emphasis was also placed on the already flourishing livestock market.

During the Revolutionary War, ports along the Eastern Shore were extremely important. The area served as an important funnel for goods traveling to the mainland after the British gained control of the mouth of the Chesapeake Bay. A fort was established at Mosquito Point, on what is today Mosquito Creek, in order to protect movement of supplies to the mainland. No major battles occurred in the area, although Wallops Island (south of the project area) did see some action (URS 2003:3.20). Additionally, a number of Accomack County residents served in the Continental Army.

No sites dating to this period have been identified within one mile of the project area. The exact location of the fort at Mosquito Point is unknown, although it was presumably constructed on the high ground north of the project area (URS 2003:Figure 17, 5.8). Additionally, the Matthews House, which was built in about 1788, was located just outside the southwestern edge of the project area. This structure, now destroyed, was owned by the Wallops family (URS 2003:3.21). A small cemetery was adjacent to the house, but is now under a runway. There is moderate potential for resources dating to this period.

### *Early National Period (1789–1830)*

By the early nineteenth century, cotton had become the region's primary cash crop. Home industries based on cotton production were also developing. Accomack County farmers also cultivated wheat, corn, oats, beans, and potatoes, but livestock raising remained dominant (Turman 1964). Local herds of semi-wild horses, known today as the Chincoteague ponies, had become numerous enough that they were rounded up every summer for sale (Whitelaw 1951).

The War of 1812 caused a brief interruption in ferry service, cutting the Eastern Shore off from mainland Virginia. The British also launched an unsuccessful attack on Accomack County from their fort on Tangier Island, on May 30, 1814 (Turman 1964; URS 2003:3.22; Whitelaw 1951). Other than that, the war had little impact on the lives of the inhabitants of Accomack County.

No sites dating to this period have been identified within one mile of the project area.

### *Antebellum Period (1830–1860)*

Potatoes and corn steadily increased in economic importance on the peninsula during this time. Home textile industries continued to supplement the economy. On Chincoteague and other Eastern Shore barrier islands, fishing and other marine industries began their rise to prominence during the mid-nineteenth century, but would not reach their peak until after the Civil War.

An important development for the Eastern Shore was the introduction of commercial steamer traffic during the 1840s. The steamers provided an expedient and reliable means for transporting goods, as well as increased access to markets in large cities such as Washington D.C., Baltimore, and Philadelphia. Travel options were increased both for residents and visitors to the peninsula. Development of several scheduled steamer routes also allowed the establishment of regular mail service. In the published postal guide of 1856, nearby Chincoteague Island was listed as one of 23 post

office locations in Accomack County (Turman 1964:179).

Coinciding with improved water transportation was a heightened interest in constructing a railroad through the peninsula. In 1836, the Eastern Shore Railroad Company was formed and obtained a franchise from the state assembly (Whitelaw 1951:43). Progress was extremely slow—it was almost 20 years later that a comprehensive survey was made of the proposed route. Construction of the railroad did not begin until well after the Civil War.

Lighthouses began to appear along the peninsula's shore during the first half of the nineteenth century, encouraging the reliance of many Eastern Shore communities on marine-based industries. On the bay side, the Cape Charles Lighthouse was completed in 1828 (Turman 1964). The Assateague Island light was operational by 1833 (Turman 1964:183). Lighthouse construction and improvements continued throughout the Eastern Shore, and in 1857 a new brick tower was constructed for the lighthouse at Assateague (Turman 1964:1843). On the eve of the Civil War, there were seven lighthouses ringing the peninsula.

No sites dating to this period have been identified within one mile of the project area.

### *Civil War (1861–1865)*

Although Accomack County voted for secession in 1861, Chincoteague did not secede (Whitelaw 1951:1381). Suggested reasons include the area's isolation from the rest of Virginia and its dependence on waterborne trade, carried on almost exclusively with the North (Whitelaw 1951:1381). Ferry service between the Eastern Shore and the mainland was halted, and all the lighthouses except for Assateague Island, went dark (URS 2003:3.24). By September 1861, the rest of Virginia's Eastern Shore had raised an army of approximately 800 men (Turman 1964). Most of this group would be captured without a fight by the Union army two months later. No major battles were fought in Accomack County, which

was continuously occupied and isolated from the rest of Virginia for the duration of the war (Turman 1964).

No sites dating to this period have been identified within one mile of the project area.

#### *Reconstruction and Growth (1865–1917)*

The late nineteenth century was a prosperous time for most of the Eastern Shore. New transportation systems were developed, and existing ones were improved. This spurred growth in both agriculture and the seafood industry that would continue into the next century. In Chincoteague, increased sea trade and associated businesses provided a base for rapid development. Tourism also began to play an increasingly important role in the local economy.

The completion of the railroad was the most important factor in Eastern Shore development during the late nineteenth century. Although plans for a railroad had been formulated in the 1830s, it was not until 1884 that they were finally realized (Whitelaw 1951:43; Turman 1964:199). The route that had been originally designed by the Eastern Shore Railroad Company was part of the Pennsylvania Railroad by 1889 (Whitelaw 1951:43; Mason 1973:14). The entire landscape of the Eastern Shore was transformed as towns quickly developed around railway stations. The railroad also affected coastal communities when several ports, the first of which was Cape Charles, were selected to directly connect rail cargo and passengers with steamer services (Turman 1964:199–200; Mason 1973). By the late 1800s, regular daily ferries were running between Chincoteague and Franklin City (Whitelaw 1951:1381). The Franklin City port featured a direct connection with the Pennsylvania Railroad, intended for shipping seafood north (Turman 1964).

With increased access to markets via railroad and steamer routes, truck farming became an important element of the economy in Accomack County (Brent 1891:4). Sweet and white pota-

toes were the region's primary crops. Other important Eastern Shore produce included strawberries, green peas, kale, radishes, cabbage, corn, and oats (Brent 1891:5–6).

The growth of truck farming increased the need for better roads and for the maintenance of the thoroughfares connecting railroad stations with outlying communities. County supervisors were mandated to create a plan to improve roads and bridges throughout the county (Turman 1964:205). Interest in road development would again increase significantly after the turn of the century, as motorized vehicles began to dominate transportation.

Another important development on the Eastern Shore at this time was the establishment of Life-Saving Stations beginning in 1874 (Turman 1964). Eventually these stations would be combined with the Revenue Cutter Service, to become the United States Coast Guard.

No sites dating to this period have been identified within one mile of the project area.

#### *World War I to World War II (1917–1945)*

The growth that the Eastern Shore experienced during the latter portions of the nineteenth century continued into the twentieth century. The increasing frequency and regularity of rail and steamer transport continued to open previously closed markets for agricultural produce and seafood. Population all long the peninsula had begun to increase. Prospects looked good for soldiers returning from the war (Turman 1964). Chincoteague is representative of this phenomenon. In addition to growth related to the seafood and tourism industries, the population of the island increased significantly in the 1920s when residents from neighboring Assateague Island moved into the area (Wroten 1972). This influx occurred after a dispute between Assateague's residents and the island's owner, who was interested in building a resort (Wroten 1972). Many houses and businesses were also relocated to Chincoteague. These were

floated into town on barges and then placed on available lots, mostly on the southern or western sides of the island (Wroten 1972).

With the development of the automobile as a primary means of transportation, Virginia, like the rest of the nation, sought to upgrade its road and bridge systems. The administration of President Woodrow Wilson had begun a policy of Federal aid to states for highway construction with the passage of the Federal Road Act of 1916 (Graham et al. 1994). By the late 1910s, state agencies such as the Virginia State Highway Commission, were becoming well established. As plans were developed for a statewide system of roads and bridges, steady increases in automobile traffic demanded constant revisions and additions to existing plans. Numerous political campaigns in Virginia focused on the development of a system of hard-surfaced roads. Complaints were made that Virginia's muddy rut-filled byways were impeding business, handicapping residents, and discouraging tourism, and calls to "Get Virginia Out of the Mud" were rampant (American Automobile Association 1921:1).

By the 1910s, a number of Chincoteague residents owned motor vehicles, although the lack of bridges and causeways to connect the island to the mainland severely restricted their use (Whitelaw 1951; Turman 1964). Unlike most other communities in Virginia, which waited anxiously for the government to construct roads and bridges, residents of Chincoteague, led by John B. Whealton, developed their own plan to connect the island to the mainland. In 1918, the Chincoteague Toll Road and Bridge Company was formed to finance, construct, and operate the proposed system (Hagan 1940; Turman 1964).

By 1921, the construction of the bridge and causeway system was becoming a reality. Weekly updates about the progress of the construction began to appear in the *Eastern Shore News*. By November 1922, the road was completed. It was 4.64 mi. long and constructed largely from local sand and shell deposits (*Eastern Shore News*

1922a:5, 1922b:1). On November 15, 1922, the new road was officially opened amid great fanfare, and the ceremonies featured a speech by the governor (*Eastern Shore News* 1922c:1).

In 1930, the Virginia Department of Highways and Transportation bought the Chincoteague Toll Road and abolished the fees, transforming it into an important section of Virginia State Highway Route 175 (Hagan 1940) (Figure 6). At that time, extensive repairs were made to the bridges and causeways composing the system (Hagan 1940). Ending the 50 cent toll almost immediately increased traffic to the island. During the pony penning festival in 1930, crowds swelled to record numbers and would continue to increase during the next decade (*Eastern Shore News* 1930a:1, 1931:1; Turman 1964).

Other aspects of the economy, however, were devastated by the stock market crash of 1929 and Great Depression. Potatoes had become the primary crop for many farmers, but a sharp drop in market prices combined with an infestation of tuber moths was a sharp blow to the agricultural community (Turman 1964). A decade later, however, crops were once more diversified, and the poultry industry was a growing part of the economy. War related industries were on the rise as well.

During World War II, the Chincoteague Naval Air Station was created at Wallops Neck (Turman 1964:244). Founded in 1943, it served as an auxiliary to the Norfolk Naval Air Station (Turman 1964; URS 2003:3.30).

No archaeological sites dating to this period have been identified within one mile of the project area.

### *The New Dominion (1945–Present)*

The postwar economy boomed on the Eastern Shore. By the 1950s, Accomack County was ranked third nationally in poultry production (*Virginia and the Virginia County* 1953:61). In 1953, there were over 150 chicken breeders on Chincoteague Island alone, producing approximately 7

million birds annually (*Virginia and the Virginia County* 1953:61). Most of the birds were not processed locally, but instead were shipped to the New York area (*Virginia and the Virginia County* 1953:61).

Following a devastating flood in 1962, tourism has become the dominant industry on Chincoteague Island. Primary attractions are the Assateague National Seashore and the Chincoteague National Wildlife Refuge. The wildlife refuge was formed in 1943 on the eastern side of the island (Wroten 1972). The Assateague National Seashore was first surveyed by the Federal government in 1930, and was officially mandated in 1965 (Wroten 1972).

The National Aeronautics and Space Administration (NASA) was created in 1958, superseding the National Advisory Committee for Aeronautics, and took over the Chincoteague Naval Auxiliary Air Station when it closed in 1959 (NASA 1994; URS 2003:3.32). Now known as the Wallops Flight Facility, the base has contributed to numerous research areas, from suborbital tracking to meteorology.

The project corridor lies within the Wallops Flight Facility.

## SURVEY METHODS

The fieldwork consisted of systematic pedestrian survey of the proposed project corridor, including shovel testing. The project area is completely covered in grass, clover, or pavement; surface inspection for artifacts was not possible. Shovel testing was conducted at intervals of 15 m (50 ft.), and was limited to areas that were not steeply sloped, waterlogged, or characterized by previous disturbance clearly evident in surface observations. The project measures an estimated 335 m (1,100 ft.) long with a maximum estimated right-of-way width of 39.6 m (130 ft.). Given an estimated average total project corridor width of about 27 m (90 ft.), the total area of field survey coverage is approximately 0.9 ha (2.3 acres). Along the length

of the project corridor the proposed area of potential effect is roughly centered on the existing road such that the two survey transects proceeded on opposite sides of the existing road. Along the southern portion of the project area, in the vicinity of the jug handle lane, the area of potential effect widened to 27 m (90 ft.) from the centerline of Route 175, and shovel tests were placed at the outer edge of the easement.

The soil from each test was screened through 0.64-cm (0.25-in.) wire mesh, and representative soil profiles were recorded on standardized forms using Munsell color and U.S. Department of Agriculture descriptive terminology (Kollmorgen Instruments Corporation 1992). Each shovel test was assigned a unique number that permitted cross-referencing between artifact lots, standardized forms, and field plans. The locations of all shovel tests and any other relevant survey information including surface-inspected areas, disturbed areas, waterlogged areas, and site locations, were recorded on plans of the project corridor provided by SRI International.

All recovered artifacts were returned to the WMCAR laboratory for washing, identification, and cataloging. All artifacts were prepared for curation according to the standards of the VDHR. An inventory was produced using a standard descriptive typology for artifacts (Appendix A). The WMCAR has developed a hierarchical coding system that operates using Microsoft Access relational database software. With this system, artifacts are coded on standard data sheets for entry into a data file. Using this file, overall inventories and particularistic data reports can be generated for inclusion in reports or for routine analysis.

## DEFINITIONS

Identification surveys require simultaneous consideration of both human behavioral patterns and cultural resource management concerns. Technically, a strict definition of archaeological resources would require that all traces of human activity be

designated as a site, a clearly impractical situation. Therefore, this field survey utilized two designations for the archaeological resources encountered during the survey—**site** and **location**. Though somewhat arbitrary in construct and application, these definitions represent a workable if not infallible compromise.

An archaeological **site** is defined as any apparent location of human activity not limited to the simple loss, or casual or single-episode discard of artifacts. A **site** has sufficient archaeological evidence to indicate that further testing would produce interpretable archaeological data. In contrast, a **location** is defined as an area marked by surface indications and little else, and/or the recovery of artifacts that are clearly redeposited, the result of casual or single-episode discard. Examples of **locations** are an isolated projectile point find or a very low density scatter of nonstructural historic artifacts. **Locations** are also defined as isolated finds of lithic material of questionable cultural origin, such as possible fire-cracked rock or debitage. In addition, areas containing archaeological material less than 50 years old are also recorded as **locations**.

In application, both of these definitions require a certain degree of judgement in the field and consideration of a number of variables. Contextual factors such as prior disturbance and secondary deposition must be taken into account. The representativeness of the sample, as measured by such

factors as the degree of surface exposure and shovel test interval, must also be considered when determining the nature of an archaeological resource.

## SURVEY EFFECTIVENESS

The primary purpose of this archaeological identification survey is to provide SRI with a statement of the nature and distribution of archaeological resources within the proposed Route 175 project corridor, Accomack County, Virginia. The effectiveness of any such survey is contingent upon and limited by the methods employed. A limitation of the survey was that most of the project area had substantial ground cover, and subsurface testing was therefore necessary throughout all areas of the project corridor that were not water-logged, steeply sloped, or visibly disturbed. As an effort to control for biases inherent in shovel testing, fill from the shovel tests was screened through 0.64-cm (0.25-in.) wire mesh. Another limitation on the potential to identify archaeological resources was the very narrowly restricted area available for survey within the project corridor, much of which was disturbed or redeposited. Consequently, despite the moderate to high potential for archaeological resources in the general vicinity, the project corridor afforded only a very limited and low potential for encountering intact resources. Despite the limitations of the survey, it is felt that it has met its intended goals within the proposed project corridor.

### 3: Archaeological Survey Results, Research Summary, and Recommendations

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Fieldwork commenced on the afternoon of May 25, 2004, and was completed the following morning. Conditions on May 25 were sunny and warm with a constant breeze. May 26 started as sunny and breezy, but brief cloud bursts in the late morning interrupted the fieldwork. A total of 29 shovel tests were excavated during the survey of the Route 175 project corridor, of which six were positive for artifacts (Figure 4; see Appendix A). The materials recovered from the six positive shovel tests, however, were found in disturbed sediments. Essentially, survey results indicate that the entire portion of the landform within the project corridor has been sculpted and filled in order to serve as the foundation for Route 175.

Shovel testing began in the area east of the jug handle lane, and south of Route 175. While the entire area appeared to have been disturbed by road building activities, systematic shovel tests were excavated to determine the extent of disturbance. Thereafter, areas with the highest elevation (i.e., the area north of Route 175, at the western end of the project area), or areas farthest from the road (i.e., the area south of the jug handle lane) were deemed to have the greatest potential for the least disturbance, and were targeted for systematic shovel testing. Areas of previous disturbance clearly evident from surface observations (i.e., the eastern 30 m [100 ft.] of the project, the area within the jug handle lane loop, the area north of Route 175 where an old road was visible and where drainage ditches had been created) were not shovel tested following confirmation of the depth of disturbance in the initial shovel test results. Additional judgmental tests were placed 7.5 m (25 ft.) west and

3.75 m (12 ft.) west of positive Shovel Test 5 to determine the nature of the stratigraphy there.

Shovel test profiles varied somewhat across the study area. Sediments on the south side of Route 175 are extremely compact. The upper 15–20 cm (0.5–0.7 ft.) of sediment, Stratum I, consists of brown to pale brown (10YR5/3 to 6/3) sandy clay loam (Figure 5). This overlies Stratum II, a 15- to 20-cm-thick (0.5–0.7 ft.) layer of dark yellowish brown to brownish yellow (10YR4/6 to 6/6) clayey sand. In most cases, these strata overlie a loamy sand ranging from dark brown (7.5YR3/3) to yellowish brown (10YR5/6) that becomes sandier with depth, and is characteristic of the local culturally sterile subsoil. Areas north of Route 175 are less compact, but exhibit the same soil profile. Strata I appears to be the result of episodes of fill and earth movement related to the construction of the substrate for Route 175. Observations of the ground surface, shovel test profiles, and inspection of the topographic map confirm that the landscape of the project area has been significantly altered. Additionally, the few artifacts that were recovered, come from these upper centimeters of redeposited sediments, and represent widely separated time periods (confirming the fact that the sediments represent mixed, redeposited fill).

Four archaeological locations were identified during the survey.

**Location A** is situated at Shovel Test 5, and consists of a single fragment of debitage and 1.9 g (0.07 oz.) of clam shell. As suggested above, the stratigraphy of Shovel Test 5 differed from the majority of the other tests. Unlike Tests 1 through 4, the sediment in Shovel Test 5 was not compact.

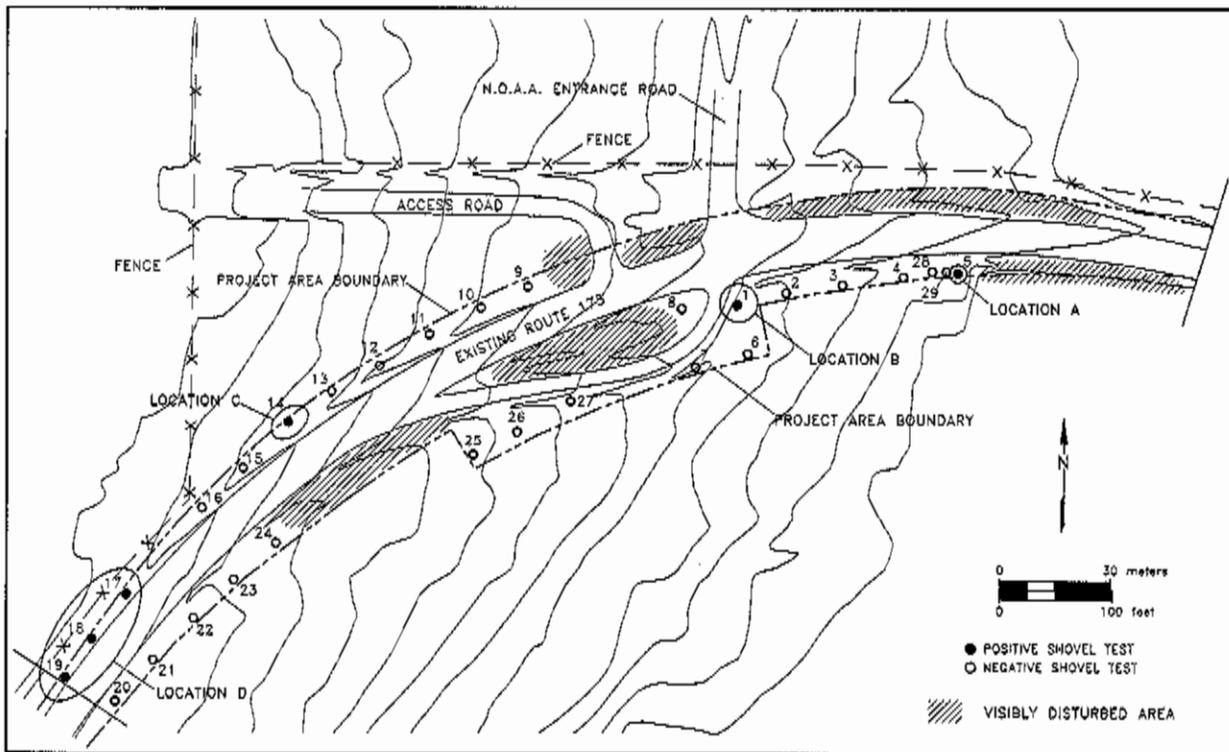
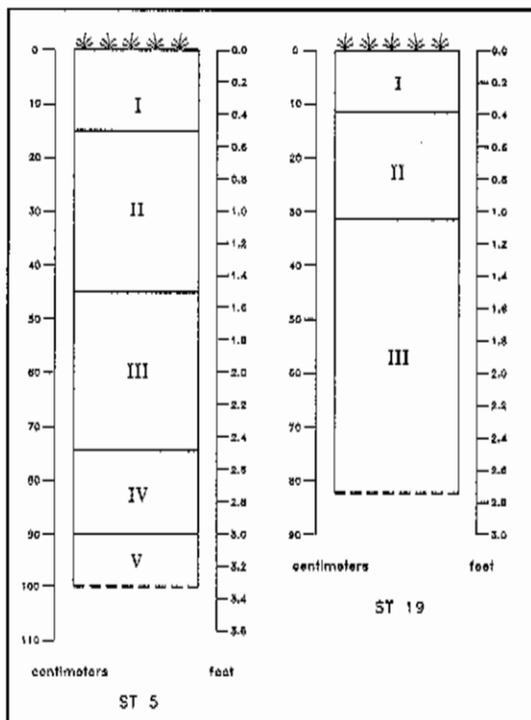


Figure 4. Location of shovel tests and archaeological locations identified during the survey.



**SHOVEL TEST 5**

- I - Brown (10YR3/3) fine sandy silt loam
- II - Light olive brown (2.5Y5/3) fine sandy silt
- III - Olive brown (2.5Y4/3) fine sandy silt with shell fragments
- IV - Olive brown (2.5Y4/4) silty sand mottled with light olive brown (2.5Y5/6) sandy clay
- V - Light olive brown (2.5Y5/6) sandy clay mottled with olive brown (2.5Y4/4) sandy clay

**SHOVEL TEST 19**

- I - Brown (10YR5/3) silty sand
- II - Brownish yellow (10YR6/6) sand
- III - Dark yellowish brown (10YR4/6) clayey sand

Figure 5. Representative shovel test profiles; Shovel Test 5 and Shovel Test 19.

RESOURCE	TYPE	COMPONENTS	OPINION ON POTENTIAL NRHP ELIGIBILITY
Location A	Redeposited artifacts	Unidentified prehistoric	Not eligible
Location B	Redeposited artifacts	Unidentified prehistoric	Not eligible
Location C	Redeposited artifact	Modern	Not eligible
Location D	Redeposited artifacts	Woodland	Not eligible

*Table 2. Summary of archaeological resources identified during survey.*

Stratum I resembled the top layers of the other tests, but was followed by a 30-cm-thick (1 ft.) light olive brown (2.5Y5/3) fine sandy loam (Stratum II), and then an olive brown (2.5Y5/3) fine sandy silt containing oyster and clam fragments (Stratum III). Stratum IV consisted of an olive brown (2.5Y5/3) silty sand mottled with light olive brown (2.5Y5/3) sandy clay. The final stratum, starting at a depth of 90 cm below the surface, was light olive brown (2.5Y5/3) sandy clay mottled with olive brown (2.5Y5/3) sandy clay. In order to determine whether these sediments were natural or simply a different kind of fill, shovel tests placed south of Route 175, 7.5 m (Shovel Test 28) and 3.75 m (Shovel Test 29) west of Shovel Test 5 (see Figure 4). Shovel Test 28 was identical to Shovel Tests 1 through 3. Shovel Test 29 indicated that sediments observed in Shovel Test 5 were present but shallower, and underlain by the same fill observed elsewhere in the project area. Given these results, it is likely that Strata I–IV observed in Shovel Test 5 and the upper stratum of Shovel Test 29 are the result of redeposition of sediment dredged from south of the causeway. A ditch can be readily observed from the eastern edge of the project area, and is clearly marked on the topographic map (see Figure 1).

**Location B** is located at Shovel Test 1, and consists of a single fragment of debitage, a modern bottle glass fragment, a piece of plastic, 4.8 g (0.17 oz.) of oyster shell, and 0.7 g (0.02 oz.) of clam shell. All the material comes from redeposited fill.

**Location C** is located at Shovel Test 14, and consists of a single fragment of modern bottle glass. This material comes from redeposited fill.

**Location D** includes Shovel Tests 17, 18, and 19. Prehistoric materials recovered include a single fragment of debitage and a shell tempered ceramic fragment. These were found with modern window glass, 0.9 g (0.03 oz.) of handmade brick, 3.8 g (0.13 oz.) of clam shell, and a piece of asphalt. This material comes from redeposited fill.

## RESEARCH SUMMARY AND RECOMMENDATIONS

Background research revealed seven previously recorded archaeological sites within 1.6 km (1.0 mi) of the project corridor. Field survey of the Route 175 project corridor included systematic pedestrian survey involving shovel testing. Shovel testing was conducted within the project corridor along two transects paralleling the existing road at intervals of not more than 15 m (50 ft.) in undisturbed areas with slopes of 10 percent or less. Areas with obvious recent disturbance were avoided, such as areas that had been built up as part of the causeway to Chincoteague Island. Results of shovel testing indicate that the project corridor has been subject to grading and filling, and that no archaeological sites are present within the project easement.

In conclusion, six positive shovel tests represent a total of four archaeological locations, **Locations A, B, C, and D** (Table 2; see Figure 4). The

four archaeological locations identified during the survey each consist of isolated artifact finds recovered from redeposited fill. By definition, Locations A, B, C, and D are not eligible for the NRHP. Due to the level of disturbance observed along the project corridor, and the absence of potentially eligible resources, in the opinion of the consultant no further work is warranted.

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*Appendix A:*  
Artifact Inventory

6/3/2004

04-15

Page 1 of 1

## Route 175 Turnout Survey Prehistoric Inventory

Provenience	Class	Subclass 1	Subclass 2	Raw Material	Quantity
LOC A	ST 05	Debitage	2ndary/Thinning Flake	Noncortical	Unidentified Chert
					1
					Provenience ST 05 Total: 1
					Provenience LOC A Total: 1
LOC B	ST 01	Debitage	2ndary/Thinning Flake	Noncortical	Unidentified Chert
					1
					Provenience ST 01 Total: 1
					Provenience LOC B Total: 1
LOC D	ST 18	Debitage	2ndary/Thinning Flake	Cortical	Jasper
					1
					Provenience ST 18 Total: 1
LOC D	ST 19	Body Sherd	Cord Marked	Shell Tempered	
					1
					Provenience ST 19 Total: 1
					Provenience LOC D Total: 2
					Project Total: 4

### Route 175 Turnout Survey Historic Inventory

Provenience	Class	Object	Datable Attribute	Comments	Descriptor	Weight (g)	Quantity
LOC A	ST 05	Shell	Mollusk		clam	1.9	
						Provenience ST 05 Total:	0
						Provenience LOC A Total:	0
LOC B	ST 01	Misc. Ceramics/Glass	Bottle	Machine made	amber, threaded finish; 2nd half 20th c.		1
LOC B	ST 01	Misc. Material	Unidentified	Plastic	discarded		1
LOC B	ST 01	Shell	Mollusk		clam	0.7	
LOC B	ST 01	Shell	Mollusk		oyster	4.8	
						Provenience ST 01 Total:	2
						Provenience LOC B Total:	2
LOC C	ST 14	Misc. Ceramics/Glass	Bottle	Colored glass	2nd half 20th c.		1
						Provenience ST 14 Total:	1
						Provenience LOC C Total:	1
LOC D	ST 17	Construction Materials	Brick	Hand Made			0.5
						Provenience ST 17 Total:	0
LOC D	ST 18	Construction Materials	Brick	Hand Made			0.4
						Provenience ST 18 Total:	0
LOC D	ST 19	Construction Materials	Paving material	Asphalt			1
LOC D	ST 19	Shell	Mollusk		clam	3.8	
LOC D	ST 19	Window Glass	Pane glass	20th century			1
						Provenience ST 19 Total:	1
						Provenience LOC D Total:	1
						Project Total:	4

B-28

*Appendix B:*

Letter By Virginia Department of Historic  
Resources Requiring Current Archaeological Survey



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# COMMONWEALTH of VIRGINIA

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Kathleen S. Kilpatrick  
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April 28, 2004

Mr. Larry James  
National Oceanic and Atmospheric Administration  
4401 Suitland Road, FB-4, Room 3308  
Suitland, MD 20746

RE: Proposed Construction of Turnout Lanes on VA 175  
NESDIS Facility at Wallops Command and Data Acquisition Station (CDAS), Wallops Island, VA  
Accomack County, Virginia  
DHR File No. 2004-0045

Dear Mr. James:

Thank you for your request for review of the referenced project. We have received all the required documentation from your agent, SRI International, including the application for project review, the relevant Environmental Assessment report, and current archival information.

The project consists of removal of existing jug handle pavement and road bed, widening of approximately 1,100 feet of VA 175 to accommodate a left turn in the center of the roadway, widening of approximately 120 feet of the westbound land of VA 175 and approximately 190 feet of the existing right turn lane onto the Wallops CDAS access road, and creation of a new 80-foot long taper lane from VA 175 into the unnamed Chincoteague well field access road. We concur with your definition of the area of potential effect for this project.

A cultural resource assessment of the NASA Wallops Flight Facility (WFF), in which CDAS is currently a tenant, was conducted by URS Group, Inc. (URS) in 2003. That study recorded 166 buildings and structures fifty years old or older. Two of those structures, the WEMA Recreational Facility (V-065) and the Coast Guard Station/Observation Tower (V-070), were found to be potential eligible for listing in the National Register of Historic Places. Neither will be directly or indirectly affected by the proposed undertaking.

With regards to archaeological resources within WFF, the URS cultural resources assessment developed a predictive model based on landform, soil type, level of disturbance, and documentary evidence and identified areas considered low, medium, and high sensitivity for prehistoric and historic archaeological sites. The area to be impacted by the construction of the turnout lane is considered a moderately sensitive area for prehistoric sites due to the adjacent tidal marsh. While groups exploiting the abundant food

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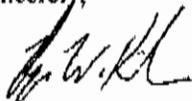
Page 2  
April 28, 2004  
Mr. Larry James

supplies concentrated at the periphery of tidal marshes often establish semi-permanent camps in this highly productive environment, the disturbance from previous construction at this location lessens its sensitivity. Concerning historic archaeological resources, due to the proximity of the project to the possible Revolutionary War fort at Mosquito Point located approximately 0.75 miles north and to the tidal marshes; the area under review is considered high sensitivity for historic maritime archaeological sites.

No archeological sites are recorded within the project's area of potential effects, but this does not mean that none exist. Further identification efforts are needed. The property has a moderate to high potential to contain significant archeological sites, both historic and prehistoric. Because of the archeological sensitivity of the area we recommend that an Identification (Phase I) archeological survey be conducted of all areas that may be affected by ground disturbing activities. The survey shall be conducted by a qualified professional in a manner consistent with the Secretary of the Interior's *Standards for Identification* (48 FR 44720-23) and our state *Guidelines for Archeological Investigations in Virginia*. Two copies of the resulting technical report should be submitted to us for review. Once we have the results of the archeological survey, we will be able to advise you whether further steps are needed to reduce, avoid or mitigate effects to archeological resources.

If you have any questions or if we may provide further guidance in the Section 106 review process, please do not hesitate to contact me at (804) 367-2323, ext. 153; fax (804) 367-2391; e-mail [roger.kirchen@dhr.virginia.gov](mailto:roger.kirchen@dhr.virginia.gov). We look forward to working with you and SRJ International on this project.

Sincerely,



Roger W. Kirchen, Archaeologist  
Office of Review and Compliance

Cc:  International  
Anne B. Newsom, Department of Environmental Quality

*Appendix C:*  
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- 1989 BA in Anthropology, University of North Carolina-Charlotte, Department of Sociology, Anthropology, and Social Work
- 1993 MA in Anthropology, Washington University, Department of Anthropology  
Thesis: *Analysis of Prehistoric Projectile Points from Two Private Collections, Butler County, Kentucky*
- 2003 PhD in Anthropology, Washington University, Department of Anthropology  
Dissertation: *Faunal Resource Selection and Use, and the Development of Agriculture in the Eastern Woodlands of North America*

**Honors and Awards:**

- 1986-1988 Chancellor's List
- 1987 Phi Eta Sigma
- 1988 Phi Kappa Phi
- 1989 Outstanding Senior in Anthropology
- 1989 Magna Cum Laude
- 1990-1992 Research Assistant to Patty Jo Watson
- 1992-1994 Director of Archaeology Lab, Department of Anthropology, Washington University, St. Louis, Missouri
- 1994-1995 Research Assistant to Patty Jo Watson
- 1995-1997 Teaching Assistant in Anthropology
- 1996 Sigma Xi Grant
- 1996 Cave Research Foundation Research Grant
- 1998-1999 Dissertation Fellowship
- 1999-2002 Teaching Assistant in Anthropology
- 2001-2002 Dean's Award for Excellence in Teaching
- Spring 2003 Research Assistant to Patty Jo Watson
- Fall 2003 Teaching Assistant in Anthropology

**Professional Employment:**

- June-Aug., 1989 Field Assistant, Archaeological Project Center, the College of William & Mary, Williamsburg, Virginia
- Jan.-Aug., 1990 Field Assistant, Archaeological Project Center, the College of William & Mary, Williamsburg, Virginia
- May-Aug., 1992 Field Assistant, Washington University, Department of Anthropology, St. Louis, Missouri

May-Aug., 1993 Field Assistant, Southern Illinois University-Edwardsville Contract Program, Waterloo, Illinois

May-Aug., 1994 Field Archaeologist, Washington University, Department of Anthropology, St. Louis, Missouri

May-Aug., 1995 Field Archaeologist, Washington University, Department of Anthropology, St. Louis, Missouri

February, 1996 Faunal Analysis Consultant for USDA Forest Service, Daniel Boone National Forest, Stanton Ranger District, Stanton, Kentucky

April-Aug., 1997 Field Archaeologist, Central Mississippi Valley Archaeological Research Institute

June 1998 Field Archaeologist, Central Mississippi Valley Archaeological Research Institute

June-July 1999 Field Archaeologist, Central Mississippi Valley Archaeological Research Institute

Jan.-Apr. 2004 Field Archaeologist, William and Mary Center for Archaeological Research

May 2004-current Project Archaeologist, William and Mary Center for Archaeological Research

**Field and Research Experience:**

Feb. 1987 Cleaned human skeletal material for the Department of Sociology, Anthropology, and Social Work, University of North Carolina-Charlotte, Charlotte, North Carolina

May-Aug., 1987 Cleaned, numbered, and cataloged artifacts for the Department of Archaeological Investigations, Colonial Williamsburg Foundation, Williamsburg, Virginia

May 1988 Participated in Field School in Gaston County, North Carolina, jointly led by the Schiele Museum and the Department of Sociology, Anthropology, and Social Work, University of North Carolina-Charlotte, Charlotte, North Carolina

June-Aug., 1988 Washed, numbered, and cataloged artifacts and oyster shell for the Department of Archaeological Investigations, Colonial Williamsburg Foundation, Williamsburg, Virginia

June-Aug., 1989 Participated in Phase II and III projects, both prehistoric and historic, in Virginia, for the Archaeological Project Center, the College of William & Mary, Williamsburg, Virginia

Jan.-Aug., 1990 Participated in Phase I, II, and III projects, both prehistoric and historic, in Virginia, for the Archaeological Project Center, the College of William & Mary, Williamsburg, Virginia

Jan.-May, 1991 Participated in survey/testing expedition in the Green River Shell Mound area, Butler County, Kentucky, for the Department of Anthropology, Washington University, St. Louis, Missouri

June 1991 Participated in Field School at Zuni, New Mexico, led by Arizona State University, Tempe, Arizona

Sept.-Dec., 1991 Analyzed archaeobotanical remains for paleoethnobotany Lab, Washington University, St. Louis, Missouri

May 1992 Participated in Phase II testing of sites in the Ten Mile Pond Wildlife Area, Mississippi County, Missouri, for the Department of Anthropology, Washington University, St. Louis, Missouri

June 1992 Participated in Phase II testing of sites in the Coon Island Wildlife Area, Butler County, Missouri, for the Department of Anthropology, Washington University, St. Louis, Missouri

Sept. 1992 Participated in collection and recording of paleofecal specimens from Salts and Mammoth Caves, Mammoth Cave National Park, Kentucky, for the Department of Anthropology, Washington University, St. Louis, Missouri

- May-Aug., 1993 Participated in Phase III excavation of sites, both prehistoric and historic, in Illinois, for Southern Illinois University-Edwardsville contract program, Waterloo, Illinois
- June 1994 Technical consultant for Kirkwood School System's excavations at Mudd's Grove Historic House, Kirkwood, Missouri
- July-Dec., 1994 Monitored excavation for Byrnes Mill Wastewater Treatment Plant
- May-Sept., 1995 Principal Investigator, Phase I investigation of 400 acre tract, Meramec River, St. Louis County, Missouri
- Feb. 1996 Analyzed faunal assemblage from 15OW100 for the USDA Forest Service, Daniel Boone National Forest, Stanton Ranger District, Stanton, Kentucky
- May 1996 Directed Phase III excavation of 15LE70, Lee County, Kentucky
- Jan. 1997 Analyzed faunal assemblage from 15LS122 for the USDA Forest Service, Daniel Boone National Forest, Stanton Ranger District, Stanton, Kentucky
- April-Aug., 1997 Directed Phase I survey in Waterloo, Illinois, and participated in Phase I and II investigations in various locations in East-Central Illinois for the Central Mississippi Valley Archaeological Research Institute
- June 1998 Participated in Phase III excavations at various locations in East-Central Illinois for the Central Mississippi Valley Archaeological Research Institute
- June-Sept. 1999 Participated in Phase I and II investigations in East-Central Illinois for the Central Mississippi Valley Archaeological Research Institute
- Jan.-May 2000 Webmaster, Anthropology 209: World Archaeology
- Aug.-Dec. 2000 Webmaster, Anthropology 361: Culture and Environment
- Oct.-Dec. 2000 Helped prepare manuscript for publication with British Archaeological Reports, for Jian Leng
- Jan.-May 2001 Webmaster, Anthropology 209: World Archaeology
- Feb. 2001 Prepared PowerPoint figures for presentation and publication, for Fiona Marshall and Darla Dale
- Aug.-Dec. 2001 Chief Teaching Assistant & Webmaster, Anthropology 190: Introduction to Archaeology
- Jan.-May 2002 Webmaster, Anthropology 209: World Archaeology
- Aug.-Dec. 2002 Chief Teaching Assistant & Webmaster, Anthropology 190: Introduction to Archaeology
- Aug.-Dec. 2003 Chief Teaching Assistant & Webmaster, Anthropology 190: Introduction to Archaeology
- Jan.-Apr. 2004 Participated in and supervised Phase I and II investigations at various sites in Virginia
- May 2004-current Directed Phase I and II investigations at various sites in Virginia

#### **Publications, Papers, and Reports:**

- 1992 *Phase II Archaeological Investigations of four Sites (23BU325, 23BU334, 23BU335, 23BU336) in the Coon Island Wildlife Area, Butler County, Missouri*, with William T. Whitehead and Jimmy A. Railey. Report submitted to Missouri Department of Conservation, Jefferson City, Missouri.
- 1994 *The Bowles Site Fauna*. Paper presented at the 51<sup>st</sup> Annual Southeastern Archaeological Conference, Lexington, Kentucky.
- 1994 *Monitoring of Waste Water Treatment Facility, Site 23Je355, City of Byrnes Mill, Jefferson County, Missouri*. Report submitted to City of Byrnes Mill and Missouri Department of Conservation, Jefferson City, Missouri.
- 1995 *Cultural Resource Survey of 400 Acre Tract on the Meramec River, St. Louis County, Missouri*. Report submitted to Winter Brothers Material Company of St. Louis, and Missouri Department of Conservation, Jefferson City, Missouri.

- 1996 *The Amazing Fauna of 15OW100*. Report submitted to USDA Forest Service, Daniel Boone National Forest, Stanton Ranger District, Stanton, Kentucky.
- 1997 Preliminary Report of Recent Investigations at Pine Crest Shelter, Lee County, Kentucky. Paper presented at the Fourteenth Annual Kentucky Heritage Council Archaeological Conference, Natural Bridge State Park, Slade, Kentucky
- 1998 Pine Crest Rockshelter (15LE70): Preliminary Results of Faunal Analysis. Paper presented at the 55<sup>th</sup> Annual Southeastern Archaeological Conference, Greenville, South Carolina.
- 2002 *Progress Report: Excavations of Pine Crest Rockshelter (15LE70), Lee County, Kentucky*. Report submitted to the Cave Research Foundation for inclusion in the Annual Report, 1998-2000.
- 2003 *Faunal Resource Selection and Use, and the Development of Agriculture in the Eastern Woodlands of North America*. Dissertation completed as part of Ph.D. program, Department of Anthropology, Washington University, St. Louis Missouri. On file with UMI Dissertation Publishing.
- 2004 *Archaeological Evaluation of Site 44VB308, Proposed Small Arms Range, Naval Air Station Oceana Annex: Dam Neck, Virginia Beach, Virginia*, with Joe B. Jones. Pending
- 2004 *Archaeological Survey of the Proposed Barksdale Dormitory Site, College of William and Mary, Williamsburg, Virginia*, with David W. Lewes. Pending.

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**APPENDIX C**

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