RECONNAISANCE ARCHITECTURAL SURVEY OF THE GODDARD SPACE FLIGHT CENTER'S WALLOPS FLIGHT FACILITY, ACCOMACK COUNTY, VIRGINIA

DHR Project # 2018-0157

Prepared for

National Aeronautics and Space Administration

Prepared by

DOVETAIL
CULTURAL RESOURCE GROUP

June 2018

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National Aeronautics and Space Administration
NASA Wallops Flight Facility
Wallops Island, Virginia 23337

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EXECUTIVE SUMMARY

Dovetail Cultural Resource Group (Dovetail) conducted an architectural survey at the Goddard Space Flight Center's Wallops Flight Facility (WFF) complex in Accomack County, Virginia, on behalf of the National Aeronautics and Space Administration (NASA). This investigation included an architectural reconnaissance-level survey of buildings and structures constructed between 1965 and 1981.

The purpose of this architectural survey was to document and evaluate above-ground resources meeting the study date range and to make recommendations regarding their eligibility for listing in the National Register of Historic Places (NRHP). Fieldwork was completed in August and November 2017 and January 2018, during which time, Dovetail documented and evaluated 51 resources within WFF ranging in construction date from 1965 to 1981. Of those, one was previously recorded and determined not eligible in 2004 and again in 2011 (001-0027). DHR ID 001-0027 represents Wallops Island Flight Facility Historic District (001-0027) comprising 6,500 acres that dates to 1945 and is inclusive of the Wallops Main Base, Mainland, and Island. Because the not eligible determination was made more than five years ago, this resource was revisited during the current effort. The remaining 50 resources had not been previously surveyed. In addition to those 51 resources constructed between 1965 and 1981, there is one WFF resource built in 1963 that had not yet received a formal NRHP eligibility evaluation from DHR staff. Although it pre-dates the range of construction dates of this effort, Dovetail included this resource, WFF No. M-018 Rocket Vehicle Shelter (001-0027-0248), in this reconnaissance-level survey to ensure that NASA has complete documentation and evaluation of its WFF resources constructed prior to 1981, resulting in a total of 52 resources surveyed and evaluated during this project.

As a result of this current architectural investigation, Dovetail **recommends that the previously recorded resource, Wallops Island Flight Facility Historic District (001-0027), remain not eligible for listing in the NRHP and the remaining 51 resources surveyed during this effort are recommended not eligible for individual listing in the NRHP under Criteria A–C**. In addition, 37 of the 52 total resources have not yet reached the 50-year age threshold for the NRHP. Dovetail also **recommends that these 37 resources do not qualify for inclusion in the NRHP under Criteria Consideration G.** Although these 37 resources do not meet the qualifications for Criteria Consideration G at this time, Dovetail **recommends that their individual eligibility be reevaluated when they reach 50 years of age.**

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INTRODUCTION

Dovetail Cultural Resource Group (Dovetail) conducted an architectural survey at the Goddard Space Flight Center's Wallops Flight Facility (WFF) complex in Accomack County, Virginia, on behalf of the National Aeronautics and Space Administration (NASA). This investigation included an architectural reconnaissance-level survey of buildings and structures constructed between 1965 and 1981, and is inclusive of all three sections of the WFF complex: Wallops Main Base, Wallops Mainland, and Wallops Island, totaling approximately 6,500 acres (Figure 1 and Figure 2, pp. 2–3).

This current study is one in a series of architectural surveys of the WFF complex. Previous efforts have focused on above-ground resources that were constructed before 1965. The current study builds on these efforts. Prior to this survey, NASA provided a list of buildings and structures on the WFF complex built between 1965 and 1981 to Dovetail. The purpose of this architectural survey was to document the resources on that list and to make recommendations regarding their eligibility for listing on the National Register of Historic Places (NRHP).

Fieldwork was conducted by Heather Dollins Staton and Adriana T. Moss between August 7 and August 10, 2017. Ms. Staton completed a revisit survey between November 27 and 28, 2017. Additional fieldwork was completed in January 2018. Ms. Staton serves as the Principal Investigator, and she and Ms. Moss meet or exceed the standards established for architectural historians by the Secretary of the Interior (SOI).

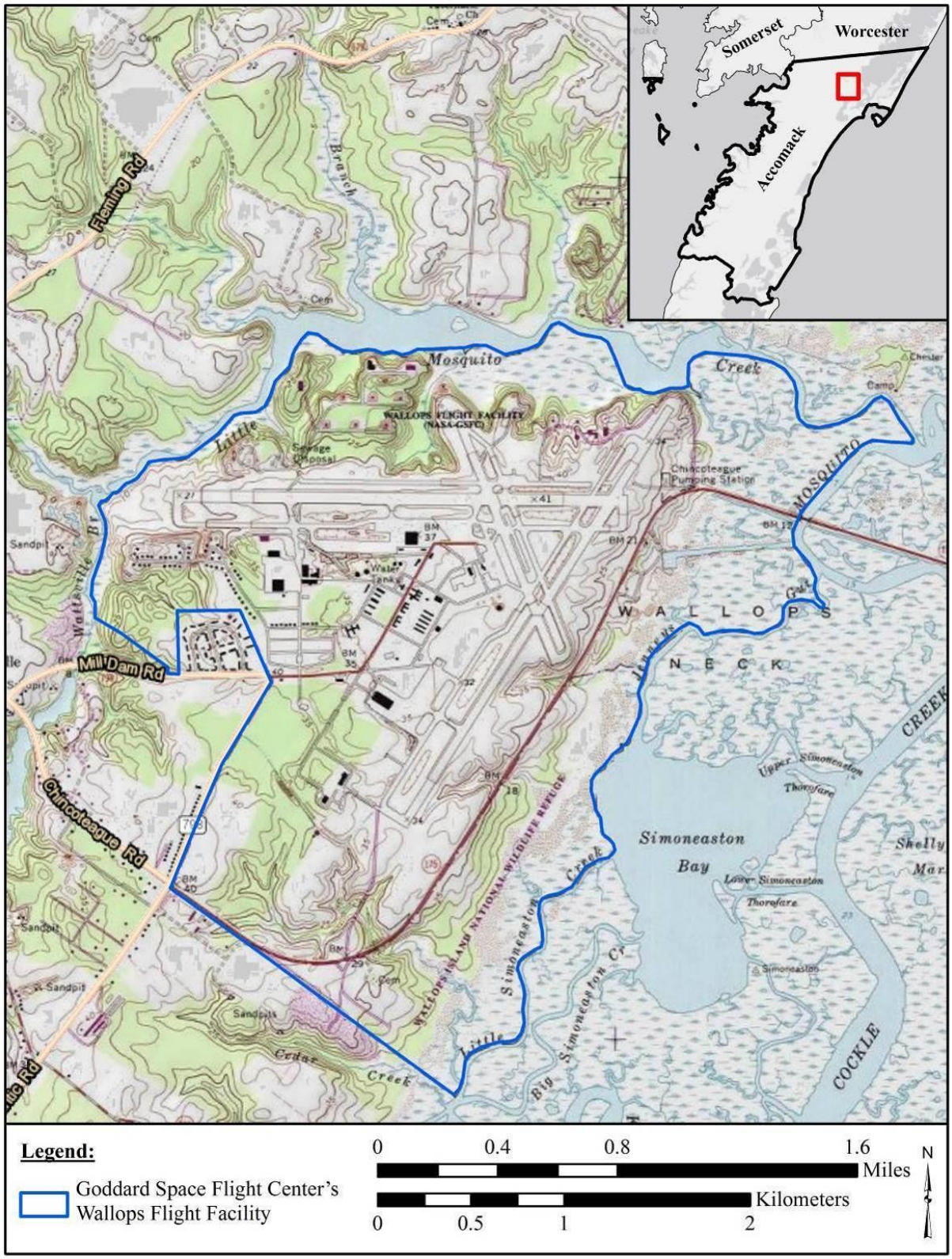

Figure 1: Location of the Wallops Main Base Portion of the Goddard Space Flight Center's Wallops Flight Facility on the United States Geological Survey (USGS) Accomack County, Virginia, 7.5 Minute Digital Raster Graphic Mosaic (Esri 2017a).

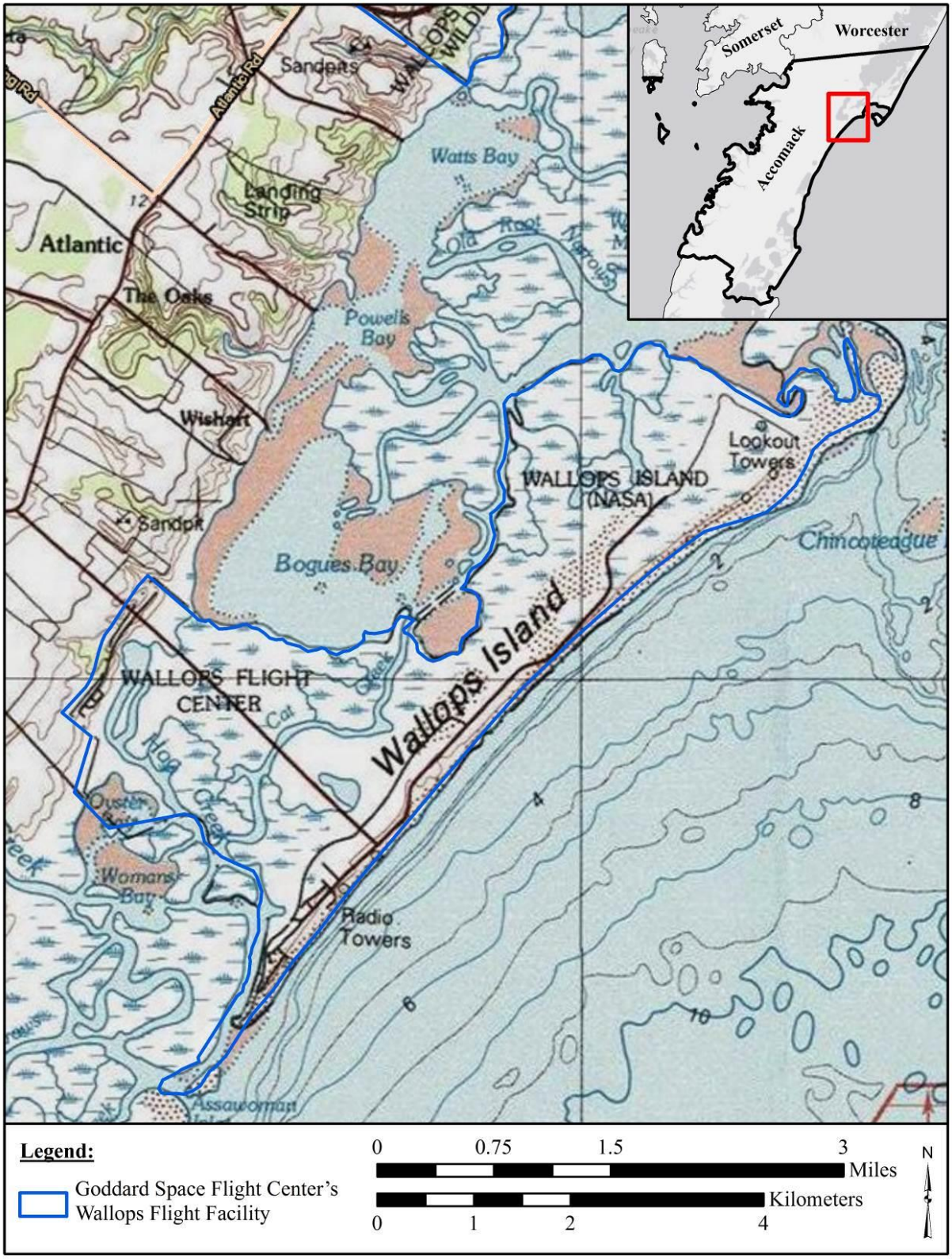

Figure 2: Location of the Wallops Mainland and Wallops Island Portions of the Goddard Space Flight Center's Wallops Flight Facility on the USGS Accomack County, Virginia, 7.5 Minute Digital Raster Graphic Mosaic (Esri 2017a).

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HISTORIC CONTEXT

The Historic Context section of this report is divided into two sections. The first is a broad history of Accomack County (pp. 5–9) and the second is a detailed history of WFF (pp. 9–21). Portions of this historic context were excerpted from Thursby and Martin (2011).

Accomack County History

Settlement to Society

The first permanent settler on Virginia's Eastern Shore is thought to be Thomas Savage. Savage was a 13-year old ensign on Christopher Newport's ship, the John and Francis, when it left England to resupply the Jamestown Colony in 1607. He spent three years living with Powhatan's people, learning their language and customs, and was then sent to the Eastern Shore where the same language was spoken. There, Savage earned the trust of King Debedeavon, the leader of the Accawmack people. As reward for Savage's service as an interpreter and negotiator with the English, King James I granted him large tracks of land in 1619 on what is now called Savage's Neck in Northampton County (Stuart 2014).

"Accomack Shire" was created in 1634 as one of the eight original shires in Virginia. The name "Accomack" was derived from the Native American word 'Accawmack.' This shire included all of Virginia's territory on the Eastern Shore. In 1642, the name was changed to Northampton County, partly as a way of replacing native place names. However, by 1663, the population of Virginia's Eastern Shore had increased to the point that the General Assembly divided the peninsula into two counties. The southern county remained Northampton and the northern county was renamed Accomack. This name change brought about the first use of the final 'k' in the spelling of the county name. Establishment of the border between the counties was completed largely through the efforts of Edmund Scarborough (or Scarburgh), a resident of Accomack County. His efforts resulted in Accomack County being significantly larger in terms of acreage and even in population (Ferguson 2018; Genealogy Trails 2018; Grymes 2018).

In 1670, Virginia Governor William Berkeley wanted to arrest Scarborough for threatening and reportedly murdering several Native American chiefs. Scarborough claimed immunity from arrest because of his position as a burgess of Accomack County. Governor Berkeley responded by abolishing the county, eliminating Scarborough's immunity. The General Assembly reestablished Accomack County after Scarborough's death in 1671 (Ferguson 2018; Genealogy Trails 2018; Grymes 2018). Continued complaints by the population of Northampton County concerning the acreage inequity between the two counties led the General Assembly to move the border northward to its current location in 1687 (Grymes 2018).

Accomack County held its court in a tavern belonging to John Cole for a number of years before he offered to build a courthouse in 1677. The courthouse was to be built on land Cole had purchased known as Freeman's Plantation. Cole also provided some 30,000 bricks and

all timber for the project. Though the courthouse took a number of years to construct, once completed, the building doubled as both a courthouse and tavern. In 1706, it was decided that a separate building should house the court in order to distance the court from sometimes raucous behavior associated with the taverns, ordinaries, and tippling houses of the time (Austin 2014; Barnes 2018).

Colony to National Period (1750–1789)

The middle- to late-eighteenth century was riddled with times of war for the Eastern Shore. First, the Seven Years Wars between France and England broke out, leading some Accomack men to join in the fight. The land was a central point of access for incoming ships. As fighting came to a close in the Seven Years War, the economy found itself stable once again. Trade was no longer hindered by the wartime blockading of ships.

Tensions between the British and Colonies rose as King George III came into power and began to pass Acts deemed unfair by the colonies. The entirety of the Eastern Shore "supplied seven companies of soldiers, one captain, two lieutenants, one ensign, four sergeants, and a drummer who marched overland to join the Ninth Virginia Regiment" to aid in the Revolutionary War effort (Turman 1964:130). Accomack's port also found itself serving as a supply line between France and the Commonwealth of Virginia during much of the War. The coast of Virginia remained in high alert as the Revolutionary War progressed, and Accomack County lay close to a number of seaside skirmishes in the Chesapeake Bay, but no land skirmishes or battles were waged in the county.

During this wartime, the town of Drummond was established in 1786. This brought about a move of the county clerk's office to the newly established town (Stricklin 2018). The town consisted of seven houses, a tavern, a saddle shop, a jail, a debtor's prison, and the new brick courthouse (Turman 1964:136).

Early National Period (1789–1830)

By the first United States census in 1790, Accomack County had grown to a population of 13,959 people (Turman 1964). Main staples of the economy included tobacco products and livestock, though other small industries persisted. The first tobacco warehouse along Guilford Creek in Accomack was constructed in 1725, and helped to promote the already growing tobacco industry (Turman 1964:144). Most of the Accomack County population lived in durable one-and-a-half story houses designed to outstand the harsh wind and imminent hurricanes in the area.

The turn of the nineteenth century brought prosperity to Accomack County; the economy flourished as did its population. The biggest threat to Accomack during this period occurred in 1812 when the United States once again declared war against Great Britain. Fortunately, the Eastern Shore did not see the same occupation and devastation as during the Revolutionary War. However, the War of 1812 did have some effects on the area; men left to join the military, ferry services halted, and trade with the North was hindered, though not completely stopped (Turman 1964).

Antebellum Period (1830–1860)

In the mid-nineteenth century, Accomack County's agricultural economy began to shift from the staple tobacco crop to primarily vegetables. The sweet potato was the most successful, though other vegetables, such as corn and peas, were also produced. This shift to a vegetable driven economy was in part due to the introduction of the steamboat to the county. The steamboat was able to bring "Eastern Shore products to market more rapidly than sail boats" (Turman 1964:173). This time also saw the completion of the Chesapeake and Delaware Canal, a passageway which connects the Delaware River with the Chesapeake Bay. Both the introduction of the steamboat and the completion of the Chesapeake and Delaware Canal shortened distances and travel time from Accomack towns to large northern cities.

In addition to agriculture, the economy of Accomack County during this period relied heavily on the seafood industry. Legislation was passed in order to protect this dwindling resource, which was threatened by over-exploitation. With a growing population and better exportation capabilities, the oyster population was quickly diminishing. In response, the General Assembly passed laws "prohibiting the sale of Oysters between May 1 and September 1 as a conservation measure" (Turman 1964:174). In 1851, the Virginia Constitution was revised, dividing Accomack into six districts.

Civil War (1861–1865)

Accomack County, along with neighboring Northampton County, began recruiting for the Civil War in June 1861. This "resulted in an army of 800 men, divided into eight companies of infantry men, two of cavalry and one of light artillery" (Turman 1964:185). Combined, these forces constituted the shore militia, which had some training, as they had run drills tri-annually since the end of the War of 1812. Due to its close proximity to the North, control of Accomack and Northampton Counties were quickly sought after. Northern General John A. Dix sent a proclamation to the shore militia promising to reopen trade with Maryland counties, restoration of the lights in the lighthouses, and assuring "protection of private property if people would not resist the army of occupation" (Turman 1964:186). Accomack County was one of the only Virginia counties not controlled by the Confederacy during the Civil War (Genealogy Trails 2018).

No major battles were fought within Accomack County during the Civil War. However, changes in the people and landscape were evident. Telegraph lines were erected along the Eastern Shore in order to provide communication between Washington D.C. and Fort Monroe. A number of men opted to fight alongside the Confederacy rather than stay in the Union-run county (Turman 1964).

Reconstruction and Growth (1865–1917)

Though Accomack County was under Union control during the Civil War, it became part of "Military District Number 1" along with the rest of Virginia directly following the Civil War. There is evidence that the Federal government provided for Accomack and Northampton to have a referendum for becoming a part of Maryland, but no record of a vote has been found"

(Turman 1964:190). Military District Number 1, including Accomack County, was readmitted to the Union in 1870 after completion of a new Constitution.

Accomack County saw great change during the Reconstruction period due to the introduction of the railroad. In 1884, railroads expanded into Accomack County, creating a number of new towns including Parksley, Onley, Keller, Tasley, and Painter. With railroads in place to ship crops and products and shuttle people to and from the county, the once booming public wharves which lined the shores were no longer necessary (Badger and Badger 2009:7). Trains furthered the transition to a primarily vegetable-based economy. Products were shipped quickly to northern cities. The towns that sprang up around railroad stations began building hotels in order to accommodate the growing number of visitors and salesmen.

The population, which had slightly decreased during the Civil War, was on the rise again. Two schools were established on the Eastern Shore in 1870. A new public-school system opened February 1 and closed on June 30 in order to account for the child labor needed on farms in the autumn (Turman 1964:196). By 1885 there were 82 public schools in Accomack County (Turman 1964).

Less than a year after the railroad line was constructed in Accomack County, a decision was made to move the County Courthouse closer to the railway. In 1893, the county name was once again changed; the Post Office and town dropped the final "k" off the name, making the official spelling "Accomac" (Stricklin 2018). Increased communication and transportation led to increases in population, and by 1900 Accomack County had reached 32,570 people (Turman 1964:209).

As the twentieth century began, new technological changes reached Accomack County, most importantly the automobile. With improvements to roads underway, Accomack County prepared for growing popularity of the automobile. Automobiles not only offered easier travel, but allowed for faster transportation of food products. Express trains could bring travelers from New York into the county. These travelers were often headed to Norfolk—a trip made more accessible by the introduction of the Pennsylvania, "a large screw-propelled steamship, [replacing] the side-wheeler Old Point Comfort" (Turman 1964:219).

World War I to the Present (1917–Present)

As World War I raged on in Europe, the people of Accomack found themselves protected by the United States Coast Guard. The Eastern Shore's pre-existing Life Saving Service had been recently absorbed into the Coast Guard. Accomack's beaches and surrounding water were heavily patrolled for foreign submarines. Many of the young Accomack men enlisted in the military. One memorial plaque lists 31 Accomack men who lost their lives while in the war (Turman 1964:221).

Men returning from war found Accomack's economy on the rise. Automobiles were being purchased so rapidly in the county that the General Assembly had to issue traffic regulations which were not previously instated.

In 1940, the General Assembly decided to add the final "k" back to the end of the county name, officially changing the spelling to the current Accomack County (Lett 2009). The Chesapeake Bay Bridge-Tunnel, constructed in the early 1960s, connected the Eastern Shore with Virginia Beach. This bridge-tunnel helped to facilitate the already shifting economy in Accomack from vegetable products to tourism (Badger and Badger 2009:7). Through the end of the twentieth century, Accomack County has used its naturally beautiful landscape and waters in order to thrive as a tourist destination.

Wallops Island Historic Context

Wallops Island - Early Settlement to Government Use

Settlement began on Wallops Island in 1664, when King Charles II granted John Wallop 1,000 acres on Virginia's Eastern Shore. Wallop was a farmer, sailor, and eventually, Surveyor-General of the Eastern Shore. His original 1,000-acre land grant was decreased by the Crown to 700 acres, but through both purchases and the grant, John Wallop had accumulated a total 2,385 acres by the time of his death in 1693 (DeVincent-Hayes and Bennett 2001).

John Wallop used the barrier islands of his property to raise cattle and pigs. As was common in those days, barrier islands that were removed from active, settled portions of the peninsula were used for grazing. Wallop's remaining land was used to grow tobacco and corn and to harvest lumber (URS Group, Inc. [URS Group] 2006). Wallop exported these goods to the West Indies, increasing his wealth. Just prior to his death in 1693, John Wallop divided his land among his two children; the land amassed by John Wallop remained in the Wallop family into end of the nineteenth century (DeVincent-Hayes and Bennett 2001).

In 1889, a 2,000-acre tract of land on Wallops Island was purchased by Wesley K. Woodbury for a hunting club named the Wallops Island Association (URS 2006). The island became a summer playground where wealthy families from Pennsylvania, Delaware, and West Virginia could hunt, fish, swim, and play on the beach. Between 1889 and 1933, the Association built a clubhouse, cottage, attendant cottages, and several secondary buildings on the property. Many of these buildings were damaged in the Chesapeake-Potomac Hurricane, which hit Wallops Island on August 23, 1933. During the Hurricane, members of Wallops Island Association hid in the woods to avoid harm. This was done under the direction of the U.S. Coast Guard (URS Group and EG&G Technical Services [URS and EG&G] 2004). Also in 1933, the Wallops Island Association became the Wallops Island Club. The Club remained on Wallops Island until 1947, when, after some dispute, the Club sold its property to The National Advisory Committee for Aeronautics (NACA) (URS and EG&G 2004).

The Coast Guard's Presence on the Island

The Federal Government's presence on the island can be traced back to 1883, when a life-saving station was constructed on Wallops Island. After several disasters on the Atlantic Ocean in the early-nineteenth century, a need was identified for the aid and protection of sailors. As a response to that need, lifesaving stations were constructed along the East Coast

of the United States (U.S.). These stations were run autonomously with little regulation or oversight. In 1871, Sumner Increase Kimball convinced Congress to supply $200,000 for the construction of new stations and equipment with the stipulation that performance standards be developed for crew members (URS and EG&G 2004). By 1878, all life-saving stations were centralized under the Life-Saving Service.

The Wallops Beach Station was one of four stations built in Virginia after the creation of the Life-Saving Service and was intended to add support to the six existing stations in the state. The station on Wallops Island represented a shift in the architectural style of life-saving stations. The first life-saving stations were 42 by 18 feet utilitarian buildings; by the 1880s, life-saving stations were built in period architectural styles and designed by architects. The station at Wallops Island was described as a mixture of the Gothic Revival and Stick styles (URS and EG&G 2004). The Life-Saving Service operated only until 1915, when it, along with the Cutter Revenue Service and the Steam Boat Inspection Service, were merged to create the U.S. Coast Guard (URS and EG&G 2004). Congress decided to merge these three agencies into one body, both because their duties overlapped to some degree and their desire for one agency that could aid and protect sailors and vessels while also enforcing the U.S.' maritime laws. Life-saving stations were now the property of the U.S. Coast Guard, marking the beginning of the military presence on Wallops Island. The Wallops Island Coast Guard Station served as a support station to the main Coast Guard Station on Chincoteague Island (URS and EG&G 2004). Essentially, the Wallops Island station functioned as it had from its construction in 1883 as a life-saving station. The station was manned by eight surf men that launched rescue boats from the beach to the water. The station was unfortunately destroyed in the Chesapeake-Potomac Hurricane of 1933.

The U.S. Coast Guard immediately began plans to build a new facility. In the process of building a new facility, the U.S. Coast Guard conveyed the original site, except a 50 feet beach access, to the Wallops Island Club, in exchange for a 3.22 acre tract farther inland. The inland location also marked a departure from the "open surf" boat launch. At the new station, rescue boats reached the ocean through an inlet to the rear of the island (URS and EG&G 2004). The new station, completed in 1936, remained within the U.S. Coast Guard until 1947, when it was decommissioned. The station was later used by the U.S. Navy and NASA.

Naval Presence on the Island: Establishment of Chincoteague Naval Auxiliary Air Station

Following the attack on Pearl Harbor on December 7, 1941, and the entry of the U.S. into World War II, there was a massive buildup of the U.S. military. The Navy purchased 2,230 acres on Wallops Neck and Island in 1942, from local farmers Jetter Savage and William H. Hickman, for the purpose of creating the Chincoteague Naval Auxiliary Air Station (CNAAS). CNAAS was one of five auxiliary airfields created under the Norfolk Naval Station during World War II. CNAAS was officially commissioned in March 1943 (URS and EG&G 2004).

Development began with demolition of the farmsteads in the area. Following demolition, temporary buildings were constructed on the base by the Virginia Engineering Company of Newport News, Virginia. The company was a major contractor for the Federal Government and was also utilized on the Norfolk Naval Station. By 1944, there were 74 structures listed

on the base and at least 60 buildings not listed, including Quonset and Victory huts (URS and EG&G 2004). The base had 62,000 square feet (sq ft) of enlisted quarters, 42,000 sq ft of officer's quarters, a 10,388 sq ft squadron office, and a 20,024 sq ft instruction building. There were no schools and no chapel. By 1945, the main cluster of buildings was located around the present day intersection of Stubbs Boulevard and Fulton Street (URS and EG&G 2004).

CNAAS utilized three hangars in the World War II period: two small hangers that are no longer extant and a larger hanger (WFF No. D-001 [001-0027-0011]). The three runways on the base today were constructed in this period. Runways 10-28 and 17-35 remain much the same as constructed. Runway 4-22 was lengthened from 5,100 feet to 8,750 feet. The original control tower was moved from this area and later demolished. The present control tower was constructed in 1957.

The initial mission of CNAAS was to provide aircraft carrier squadron training. Training included torpedo and composite operations. CNAAS's mission changed in 1943 with the introduction of patrol bomber operations training. Known as PB4Y Privateers, these patrol bombers were trained to use B-24D Liberator aircraft to patrol the Pacific Ocean. B-24D Liberators were used in every theater of the war (URS and EG&G 2004).

CNAAS was also briefly used for operations training of the Civilian Air Patrol (CAP). CAP was created to address civilian concerns about submarine activity in the Atlantic Ocean. After several tankers and freighters were attacked by submarines, in 1941, a group of civilians came together, providing their own planes and equipment, to patrol the ocean for enemy submarines. CAP was mainly a patrolling organization, but did receive bombs and depth charges after an enemy submarine off the coast of Cape Canaveral, Florida, escaped before the military could respond. CAP used CNAAS from January to March 1943 (URS and EG&G 2004).

CNAAS and the Naval Air Ordnance Test Station, 1945–1959

By the end of World War II, German advancements in ballistic missiles and flight speeds prompted the U.S. to focus on improving their technology in these fields. CNAAS expanded their mission from aircraft carrier squadron training to naval aviation ordnance testing (Shortal 1978). In 1946, the Navy began plans to establish the Naval Air Ordnance Test Station (NAOTS). The NAOTS was a research and development facility aimed at arming navy ships and aircraft, fulfilling the needs identified at the end of World War II (URS and EG&G 2004). Before and during the war, missile testing was conducted in California; with the creation of NAOTS, the entire operation was transferred to Wallops Main Base, solidifying the Navy's relationship with the area (URS and EG&G 2004).

NOATS shared the Main Base with CNAAS, conducting research on guided missiles, and used areas on the island for testing of bombs and other weaponry. With all of NAOTS activity, the airspace over the island became known as a four ring circus. At one point, an air squadron flew targets, drones, and banners, another squadron flew targets for new weapon research, and two guided missile training units tested guided air-to-water missiles in the same airspace simultaneously. The Navy utilized its isolated location, performing classified tests

for the Operational Development Force, Atlantic. Testing for the Grumman F8F Bearcat, a single engine fighter plane, was carried out at Wallops Island.

The Navy's commitment to Wallops Island was demonstrated not only in the creation of NAOTS, but also in the development of the base. From 1945 to 1953, married and family housing along with a kindergarten building were built on Wallops Island. An elementary school was also being planned. Temporary structures from the World War II period were also discarded. Of the 74 structures listed in 1944 only 19 remained in 1957; 16 of the 60 ancillary structures were extant at this time. This transformation in building permanence and type expressed the intentions of the Navy to stay at Wallops for a period of time. In 1953, runway 4-22 was extended and by 1957, a new research hangar was constructed (WFF No. N-159 [001-0027-0141]) along with the telecommunications building (WFF No. N-162 [001-0027-0143]).

Development of the island reflected the mission of the NAOTS and was mostly temporary in nature. Several aerial bombardment targets were constructed on the island, the most elaborate of which was located on the north-central part of the island. It consisted of a system of ground markers for pilots. Additional targets were constructed on the beach for firings out to sea. Observation towers were constructed along the shoreline for photography and theodolite stations (a survey instrument placed on an elevated shore based vantage point). One tower from this period remains on the north end of the island (WFF No. V-130 [001-0027-0103]).

Unfortunately, Wallops Island began to be passed over for other more desirable locations for ordnance testing. By 1948 and 1949, the Navy began investing in testing ranges in Point Mugu and Point Arguello, California, resulting in a lack of interest in CNAAS/NAOTS (URS and EG&G 2004). By 1949, the Navy began the ground work for the NACA, which had been leasing land on the south side of the island since 1945 for a flight research station, to purchase the island.

In 1951, the base was re-designated a Naval Air Facility with a primarily research based mission more compatible with NAOTS mission. Weapons testing continued into this period. The base was also used to train Ordnance Reserve Officers and hosted gunnery exercises and planning conferences. The Navy retained ownership of the facility until 1959 when it transferred the base to NASA.

The National Advisory Committee for Aeronautics (NACA)

When the Navy created the NAOTS and expanded the CNAAS base in 1945, another government entity came to Wallops Island: the NACA. NACA was created in 1915, during World War I. With the outbreak of the war, Americans were confronted with their growing deficiencies in aviation. A large gap in capabilities had opened after the Wright Brothers flight in 1903 (Wallace 1997). NACA was created as a rider to a naval approbation bill in March 1915 to address these concerns. The bill provided that five of the twelve seats on the committee would be reserved for military aviation personnel, so while the committee was civilian, it retained close ties with the military. This relationship followed NACA and its successor NASA through the years.

Gathering information and developing new technology in the aviation field required a research facility. Committee members believed that "a modern facility and motivated personnel" would provide them with the tools they needed to compete with Europe (Wallace 1997:3). Because NACA was granted $53,580 to build a research laboratory, but no money to purchase property, location on an existing military base was necessary. Hampton, Virginia was suggested as a location for the research laboratory. Its short distance from Washington and industry in Virginia, coupled with the privacy offered by the location, made the site ideal. In 1920, NACA was assigned a portion of land on a new Army Airfield in Hampton. The laboratory was named for Dr. Samuel Pierpont Langley, Secretary of the Smithsonian Institute and considered at the time to be the father of aviation. Langley's mission was to utilize scientific and methodical investigations to solve problems in aircraft design (Dutton and Taylor 2010).

As time passed and the research center developed, a core group of researchers solidified at Langley. The relationship with the community also solidified with time, providing jobs to the residents of Hampton. The laboratory began to stake out its independence, performing most tests in house, away from the scrutiny of NACA's Washington headquarters.

The onset of World War II increased Langley's role in NACA. Just as European progress in aviation had prompted Congress to create NACA, German achievement in research and development of high speed designs, drove NACA to open two new laboratories to compete with these advancements: the Ames Laboratory was opened in Sunnyvale, California in 1940, serving as a test facility to West Coast aircraft manufactures; and the Lewis Laboratory opened in Cleveland, Ohio to provide data on aircraft engines (Wallace 1997). The new laboratories were planned by and staffed with Langley personnel and reflected Langley's mission of scholarly, autonomous research. Flight speed research and missile development became urgent areas of research during and after World War II. With Ames and Lewis Laboratories still in their infancy, Langley was primarily responsible for these tasks. The discussion about exceeding Mach I speed (the speed of sound), begged the question of aircraft performance at transonic speeds (close to the speed of sound). Wind tunnels, used to test performance, provided inaccurate data. Three new methods were developed to address this problem: designing and flying experimental aircraft, the use of rocket motors to reach these speeds, and dropping instrumented devices from high flying planes (Wallace 1997). The first method was addressed by the creation of the High Speed Flight Station, located next to Edwards Air Force Base in California. Research into the remaining two methods, along with the need for a site amenable to missile testing, set in motion the procurement of land on Wallops Island for the Auxiliary Flight Research Station (AFRS).

The Auxiliary Flight Research Station, 1945–1946

The AFRS (also referred to simply as Wallops) mission of missile and rocket testing required several characteristics in a location. The site needed to be isolated to ensure privacy and security. An extensive range for the launch of missiles and rocket motors and several locations parallel to flight trajectory were required for tracking (Wallace 1997). Close proximity to both Langley and a military airfield were also necessary.

The preferred location was Cherry Point, North Carolina. The site offered a long launch range over the Atlantic Ocean, a nearby Marine base, and an hour flight from Langley. The site was ultimately eliminated as an option when difficulties were discovered in reaching barrier islands essential to tracking flights, as well as an unwillingness on the part of officers on the base to share the space with a civilian operation (Wallace 1997). Consequently, researchers at Langley reconsidered a site they had formerly rejected, Wallops Island.

NACA had discounted Wallops Island because it lacked the infrastructure needed to support both the experiments and the staff of the research station. Upon reconsideration, Wallops Island possessed all the key elements required by NACA. The planned NAOTS on the north end of the island, made Wallops Island even more enticing. On May 11, 1945, NACA began to lease 1,000 acres on the south end of the island from the Wallops Island Club. On June 27, 1945, launch operations began (Wallace 1997). The NAOTS' location nearby proved extremely helpful, as the Navy offered assistance to NACA's researchers until they became proficient in rocket operations.

The first years on Wallops Island were a whirlwind of projects. A drop zone was created on the south end of the island to begin testing the effects of transonic speeds on aircraft (Wallace 1997). Balloons were also launched to gather important information about the atmosphere and its effects on aircraft. The research center also began hosting civilian projects.

Early operations were performed from temporary structures, which were used longer than NACA had intended. The Navy planned to purchase the entire island after World War II; however, these plans were delayed following the end of the war. NACA was unable to purchase lands under military appropriations, so as the Navy delayed its purchase of the island, NACA's permanent construction plans were delayed as well.

The Pilotless Aircraft Research Station, 1946–1958

On June 10, 1946, the Wallops Island site of the AFRS was officially designated the Pilotless Aircraft Research Station (PARS) after a reorganization of Langley Laboratory created the Pilotless Aircraft Research Division. Wallops served as a testing facility to Langley Laboratories, a relationship that would continue for some time. The term "pilotless aircraft" referred to missiles and rockets. By calling these devices pilotless aircraft rather than ordnance, research was able to remain under the oversight of NACA rather than the military (Wallace 1997).

NACA maintained a close working relationship with every branch of the military, providing missile testing on Wallops Island. The first project test conducted was for the Army Air Force's first air-to-air missile, the Tiamet. This program was ultimately unsuccessful and interest was shifted to supersonic (greater than the speed of sound) missiles. The Navy's Lark missile was also tested at Wallops. Research focused on solid fuel rocket motors and bomb aerodynamics (URS and EG&G 2004).

The objectives of the PARS were expanded when Robert L. Krieger was assigned to the base in 1948. Krieger began at Langley performing various tasks and was eventually assigned to the Photo Lab, where he worked under Edmund C. Buckley. Buckley urged Krieger to earn a

degree in engineering, which Krieger obtained from the Georgia Institute of Technology in 1943. Upon graduation, Krieger returned to work at Langley. Buckley received the Chief Assistant position at Wallops in 1948 and immediately assigned Krieger to take charge of operations. Krieger's background was in radar tracking, telemetry, and photographic techniques. He quickly implemented these techniques at Wallops, creating a more comprehensive research facility. Construction of photograph platforms began and continued on Wallops Island as a result of Krieger's influence (Wallace 1997).

German ballistic missiles and the Soviets' successful detonation of an atomic bomb in 1949 put pressure on the U.S. to retain their leading position in weaponry. As a response to this demand, Wallops began work on hypersonic (equal to or exceeding Mach V) missiles in the early 1950s. Research focused on both manned and unmanned aircraft. This line of research would lead to both the development of the X-15 and the Apollo program (Wallace 1997).

The desire to fly higher and faster led to additional research projects at PARS, Wallops Island. Forays into the effects of wind, generated from the detonation of atomic bombs, on aircraft, began, as did weather data collection. PARS partnered with the University of Michigan to create Deacon-Nike rockets, creating a cost effective means of developing rockets that could reach high altitudes (Wallace 1997).

Unfortunately the equipment at Wallops was not large enough for the rockets and missiles being launched and higher altitude and speeds presented new problems in material durability. The base underwent another round of construction in the early- and mid-1950s to address these difficulties. Large launch pads were constructed and more sensitive radar and tracking devices were developed in these years. Evolving research carried Wallops into the Space Age.

NASA and Wallops Station, 1959–1961

Sputnik I was launched by the Soviet Union on October 4, 1957, marking the beginning of the "Space Race." American citizens were shocked by the orbiting satellite and fearful that they were becoming technologically disadvantaged. Although public outcry called for a more aggressive approach, President Eisenhower was only mildly concerned with Sputnik and did not intend to increase budgets for pilotless aircraft. Eisenhower's position changed, however, after the Soviet's launched Sputnik II in November 1957 and the explosion of the Vanguard rocket about one month later (DeVincent-Hayes and Bennett 2001). The Vanguard was intended to be the first launch vehicle for placing a U.S. satellite in orbit, and thus, would keep the U.S. competitive with Russia. The occurrence of the Vanguard explosion one month after the launch of Sputnik II, a satellite weighing a half a ton and carrying a dog named Laika, highlighted the perception of American technological failure in the wake of a Russian victory. The political fallout from these two events forced Eisenhower's hand and pushed the U.S. into Space.

The chance to increase their budgets and play the role of "space defenders" was extremely attractive to each branch of the military and each began to vie for the task (Wallace 1997). The Air Force maintained that space was a natural extension of their area of expertise and the Army contended that missiles were really just long range artillery. President Eisenhower had

become weary of the "military-industrial complex" and insisted on a civilian space program to complement any military programs (Wallace 1997). The natural civilian organization for space research was NACA.

NACA had initially shied away from connection with Space research, but faced with the potential to receive an increased budget, exert more independence in research, and the threat of being deemed obsolete by not investigating space, they began to jockey for position. Where before NACA had distanced itself from the missile research it conducted, it now began to highlight these endeavors. Their efforts paid off; NACA convinced the president that it should be assigned the space program. NACA became the nucleus for a new, larger agency: NASA. NASA was created with the signing of the Space Act on July 29, 1958. This was not simply a name change; NACA was merged with the Vanguard division of the Naval Research Laboratory, the Army's contract with the Jet Propulsion Laboratory in California, and the von Braun team from the Army Ballistic Missile Agency and brought under closer executive control and legislative scrutiny (Wallace 1997).

The separate backgrounds and cultures of each organization, paired with the appointment of a non-NACA affiliated person to direct NASA, led to some chaotic early days. The Wallops Island facility experienced this chaos as well. It, along with the facility at Cape Canaveral, Florida, was considered a service station, used to conduct experiments for other NASA facilities, not research of their own. The service stations were placed on equal footing with the new space research center being constructed outside of Washington D.C., and removed from Langley's direct oversight. Nonetheless, Wallops relationship with Langley as a testing facility, continued in much the way it had prior to the change in organization.

Congress and the president had differing views on spending for the Space Program. The drive to stay competitive in the Space Race prompted Congress to appropriate $1,000,000 for the purchase of enough rockets to keep Wallop's operations on schedule, but President Eisenhower's fiscal conservatism checked Congress's willingness to invest freely in NASA and by late 1959, the Wallops Island facility found itself in need of land, offices, shops, tracking stations, and housing, with little hope of a budget to acquire these things.

Fortunately, the Navy was in the process of closing the Chincoteague Naval Air Facility and facilitated the transfer of the 2,000-acre installation to NASA. The base was in the midst of a renovation at the time, including the lengthening of one of its three runways and construction of new test facilities, buildings, including the telecommunications building (WFF No. N-162 [001-0027-0143]), and a hangar (WFF No. N-159 [001-0027-0141]) (URS and EG&G 2004). The base provided NASA with much needed facilities and also staved off the economic downturn facing the community if the base closed. The initial tepid welcome of the residents to NASA quickly changed with the transfer of the base.

The acquisition of the former naval air facility allowed for spending on things other than buildings, such as infrastructure and new research equipment. In 1959, Wallops facility, now called Wallops Station, received the largest portion of the NASA budget. The first construction was on a causeway and bridge (WFF No. I-004 [001-0027-0152]) to connect the island to the Mainland. After becoming a NASA facility, the expansion of Wallops Station included acquisition of 216.6 acres on the Mainland in 1959. Prior to the causeway, ferries

and seaplanes were used to access the island. These were difficult modes of transportation that resulted in more than a few injures. Personnel would have to gather at the dock on the Mainland and take the ferry to the island. Mail would have to be transported this way as well. The causeway enabled personnel to drive straight from their homes to the location of their particular job in private automobiles, transferring the cost of transportation to work from employer to employee. Transportation from Langley Laboratory to Wallops was also made more convenient by the causeway. Flights were able to go from Langley to the Main Base, without requiring additional flights to the island facilities (Shortal 1978).

NASA's second undertaking was the construction of a seawall to protect its facility investments on Wallops Island. Advanced tracking and data relaying equipment were added to the base in 1959 and 1960. The southern portion of Wallops Mainland was designated for the use of long-range radars. Three long-range radars were erected on the Mainland (WFF Nos. U-020A, U-025A, and U-030A [001-0027-0154, -0157, and -0161]). All three were designed and built by the Massachusetts Institute of Technology's (MIT) Lincoln Laboratory. The Lincoln Laboratory was founded in 1951 and funded by the Air Force, to solve scientific and technical problems in air defense, specifically radar. Partnering with Lincoln Laboratory provided Wallops with an opportunity to gain insights into radar (Wallace 1997) NASA operated one of these, designated Spandar (WFF No. U-030A [001-0027-0161]), which increased tracking capabilities for the hypersonic program and new space projects (Wallace 1997). Wallops Station purchased better cameras and telescopes and constructed three new launch pads (Launch Areas 3, 4, and5) on the island.

Prior to the creation of NASA, NACA and the Wallops facility had begun research on solid-fueled vehicles. Their research remained on the drawing board until the Air Force showed interest in it as a sounding rocket. Sounding rockets carry scientific instruments to high altitudes, below orbital level. These rockets are cost effective and time efficient because large payloads are not required to reach suborbital heights. Wallops presented its ability to support both sounding rockets and orbital launch. The "Solid Controlled Orbital Test System" or SCOUT was launched from Wallops Island on July 1, 1960. SCOUT was one of the most reliable and successful launch vehicles, with the capability of launching a 385-pound satellite in a 500-mile orbit (NASA 2008). To launch the vehicle and record data, Launch Pad No. 3 was constructed, as well as a control center (WFF No. W-020 [001-0027-0182]) and upgraded tracking systems (Wallace 1997). The SCOUT testing ultimately led to the launch of Explore IX, an inflatable sphere designed to gather atmospheric data, on February 16, 1961 (Wallace 1997). Explore IX was the first satellite to go into orbit atop a solid fueled vehicle, making Wallops Island the third U.S. range capable of orbit.

While orbital capability put America back in the Space Race, the real goal was to launch a piloted spacecraft. Putting a human into orbit was considered the only way to advance past the Russians and fortify the public's pride in the nation. Plans for piloted orbit were being considered at Wallops as early as 1958. Driven by the military's intention to keep piloted spacecraft under their own jurisdiction, representatives from Langley's Research Laboratory approached the president about a piloted space program. The president agreed to place this research under the new space agency in late 1958. The Space Task Group was created and Project Mercury began (Wallace 1997).

Wallops Island provided much needed privacy to conduct testing on Project Mercury. America's perceived lag in the Space Race magnified any failure, even during testing. The trial and error tests on Wallops Island did not need to be highly visible. Research was conducted on the Mercury capsule's stability (this model capsule would become the orbiting vehicle for the first U.S.-piloted space flight) and its reaction to aerodynamic heating. Between 1958 and 1959, 26 full size capsules and 28 scale models were launched at Wallops Island (DeVincent-Hayes and Bennett 2001).

The interest and enthusiasm for piloted spacecraft drew people to Wallops Station. Surprisingly, the facility welcomed the visitors, and even set up bleachers near the launch site. The spectacle reached its pinnacle when Sam and Miss Sam, a pair of chimpanzees were launched from Launch Area 1 in the Mercury capsule (Shortal 1978). Sam was launched to an altitude of 53 miles and Miss Sam was used to test the reactions and stress caused by a launch aborted through the escape tower (Wallace 1997). Sam was launched on December 4, 1959 and Miss Sam was launched on January 21, 1960. One hundred photographers and celebrities watched the launch, including the astronauts scheduled to fly in a Mercury Capsule in April 1961.

The last Mercury test at Wallops took place on April 28, 1961; one week later, Alan Sheppard Jr. became the first American space traveler. Unfortunately, Sheppard's sub-orbital flight came on the heels of another Russian victory. Yuri A. Gagarin orbited the earth on April 12th of that year. The only way for the U.S. to surpass Russia was to put a man on the moon.

Wallops Station's New Direction: Space Science Research, 1961–1974

In the race to get a man on the moon, NASA opened a new facility in Houston, Texas and transferred the Space Task Group, originally housed at Langley, to Houston. Since Space Task Group transferred to Houston, testing relating to Space Task Group missions including Project Gemini and later the Apollo Program, were transferred from Wallops to White Sands, New Mexico. White Sands offered wide expanses of ground for landing and was in close proximity to both Houston and to NASA scientists researching manned flight to the moon in California and Louisiana. Wallops Station was also incapable of handling the large payloads needed to reach the moon. At this time the Tracking and Ground Instrumentation Unit was also transferred from Langley to the new Goddard Facility, near Washington, DC and training was consolidated to this facility. Initial Tracking and Ground Instrument training, originally held at Wallops, was consolidated at Goddard (Wallace 1997).

This reorganization of responsibilities resulted in a period of transition for Wallops in 1961–1962. It was at this time that Wallops began focusing on space science research, opening up a new range of research topics and ultimately creating new research partnerships. Space Science, as defined by NASA, was "theoretical and experimental research on the ground and in the earth's atmosphere" (Wallace 1997:80). Wallops experience with the sounding rocket brought universities and government agencies outside of the Department of Defense (DOD) to the island. Satellites could only be used above 100 miles; if they dropped below this point, the earth's atmosphere dragged them down (Wallace 1997). Sounding rockets allowed

researchers to gather data on the interim space between the earth's surface and 100 miles above it.

Government agencies that utilized the base included the Federal Aviation Administration, the National Bureau of Standards, and most importantly, the Weather Bureau. The Weather Bureau had been interested in the usefulness of Wallops Island for gathering atmospheric data since 1958 or earlier, but the sounding rocket allowed them a more reliable means of gathering information. Sounding rockets launched balloons to high altitudes, allowing the balloon to record data on its slow descent (Wallace 1997). By 1965, the Weather Bureau had a regular launch schedule at Wallops Station.

The use of satellites in gathering atmospheric data was also employed at Wallops Facility. The Television Infra-Red Observation Satellite (TIROS) was initially launched at Fort Monmouth, New Jersey, but the placement of WFF No. Y-055, Fixed Radar Surveillance 16 (FPS-16) Radar (001-0027-0198) encouraged the move of TIROS to Wallops Island. TIROS allowed pictures of weather systems to be generated and enable the Weather Bureau to track storms. The second TIROS satellite was launched from Wallops Island in June 1961 (Wallace 1997).

Wallops Station's shift to space science research and its partnership with new clients brought an increase in budget to the base. A portion of the budget was used to repair damage caused by a hurricane, known as the Ash Wednesday Storm, in 1962 (Wallace 1997). The remaining money bought tracking equipment and vehicle handling facilities. Vehicle handling facilities built in this period include the WFF No. M-015, Rocket Inspection & Storage Building (001-0027-0133), WFF No. M-016, Inert Rocket Hardware Storage & Hardware Inspection Shelter No. 2 001-0027-0134), WFF No M-018, Rocket Vehicle Shelter (001-0027-0248), WFF No. V-080, Rocket Motor Ready Storage Building (001-0027-0178), and WFF No. W-065, Checkout and Assembly Shop No. 3 (001-0027-0188). These tend to be one-story buildings with either concrete-block or metal-framed structural systems covered by gable or flat roofs.

Several antennas were constructed during this period (e.g. WFF No. N-159E [001-0027-0142], WFF No. N-158A [001-0027-0222], and WFF No. 164A [001-0027-0225]), reflecting the station's emphasis on tracking. Additionally, NASA constructed several tracking buildings throughout the 1960s and early 1970s, for example the Mobile Radar Laboratory (WFF No.U-040 [001-0027-0162]), the Transmitter Building (WFF No. U-0055 [001-0027-0163]), the Atmospheric Physics Measurement Laboratory (WFF No. U-080 [001-0027-0169]), and two camera platforms (WFF No. Y-095 [001-0027-0199] and WFF No. Y-110 [001-0027-0200]).

The increased budget also accommodated an increase in the number of employees at Wallops Station. By mid-1963, the number of employees at Wallops Station was almost 500, double the number in 1960 (URS and EG&G 2004). Expansion increased until the 1970s.

Wallops Flight Center, 1974–1981

In 1974, NASA changed the name of its Wallops facility to Wallops Flight Center, reflecting its new foray into runway surface and aircraft noise reduction research, while continuing its role as a launch site for orbital and suborbital flights (a flight in which a spacecraft follows a trajectory of less than one orbit). In fact the mission of Wallops Flight Center expanded in the 1970s to included management of suborbital projects. Additionally, the facility also added earth studies of ocean processes to its research program.

Despite the addition of the earth studies and runway surface and aircraft noise reduction research, building and structure construction at WFF slowed greatly throughout the mid-1970s and early 1980s. This period saw the construction of 15 buildings and structures, a drastic reduction from the over 70 resources built during the Wallops Station's New Direction: Space Science Research, 1961–1974. This suggests that any new operations at WFF did not require much additional equipment and buildings and could, for the most part, be housed in existing infrastructure.

NASA constructed 11 buildings at WFF between 1974 and 1981, eight of which are used as storage facilities. All of these eight resources are one story in height and have either a concrete-block or metal structural system and are often covered by a shed or flat roof. These range from very small sheds (e.g. 159 sq ft, WFF No. N-159F [001-0027-0233] and 960 sq ft, WFF No. F-014 [001-0027-0208]) to medium-sized warehouses (e.g. 16,622 sq ft, WFF No. F-025 [001-0027-0213] and 22,730 sq ft, WFF No. F-019 [001-0027-0211]).

The three remaining buildings constructed during this seven-year span included a one-story, metal-clad Shops Building (WFF No. F-016 [001-0027-0209]), a one-story, concrete-block Plant Maintenance Shop (WFF No. N-157 [001-0027-0221]), and a one-story metal-framed, auxiliary building called the Compress Dehydrator Building (WFF No. U-071 [001-0027-0209]).

In addition to the buildings, NASA also built two antennas (WFF No. E-106C [001-0027-0205] and WFF No. J-010 [001-0027-0214]) and one electric equipment power stand (WFF No. N-161 [001-0027-0224]). In 1978, a Fuel Storage Tank (WFF No. Y-015A [001-0027-250) was constructed on Wallops Island.

Wallops Flight Facility, 1981–Present

In 1981, Wallops Flight Center was consolidated with the Goddard Space Flight Facility and renamed the Wallops Flight Facility. WFF became NASA's primary facility on suborbital programs. In the 1990s, the facility's mission expanded to include shuttle-based and small orbital projects. It continued its relationships with universities, government programs, and commercial clients, and also continued its research into atmospheric conditions and weather (URS and EG&G 2004).

WFF identified three themes in its 2005 Mission Plan that were to guide the focus of the facility: Enabling Scientific Research, Enabling Aerospace Technology and Facilitating the Commercial Development of Space, and Enabling Education, Outreach, and Innovative

Partnerships" (WFF 2005). Specific programs under these themes include "developing new technologies and applications for WFF cameras, developing, manage, and employ new suborbital missions, and developing earth science measurements to support global climate change and coast research" (WFF 2005).

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PROJECT METHODOLOGY

Prior to fieldwork, Dovetail completed a thorough review of background literature and records associated with the WFF complex. This was primarily conducted at the Virginia Department of Historic Resources (DHR) and included an examination of records on previous cultural resource investigations completed on the WFF property as well as previously recorded architectural properties within a 1-mile radius of WFF.

Before fieldwork commenced, NASA provided Dovetail with a list of buildings, structures, and objects ranging in construction date from 1965 to 1981. All buildings and major structures on the list were included in the survey. In addition, several objects and smaller structures were included in the list, each identified with a prefix of "S" or "I" before their WFF property number. These "S" and "I" properties comprise a wide variety of resources such as roadways, man holes, drainage systems, flag poles, and parking areas. At NASA's request, Dovetail consulted DHR staff regarding the "S" and "I" properties in an email dated October 23, 2017; DHR determined that only the thermal vacuum test chambers and outdoor signs that are of artistic value or display a specific graphic design of the period need to be documented and evaluated.

During the fieldwork, Dovetail documented the resources through photographs, written notes, and mapping. Digital photographs were taken of each surveyed resource and individualized site plan maps were prepared.

Each documented resource was then evaluated for cultural historic significance in regards to NRHP Criterion A, for its association with events that have made a significant contribution to the broad patterns of our history; Criterion B, for its association with people significant in our nation's history; and Criterion C, for its embodiment of distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or possess high artistic values. As part of the current survey, these architectural resources were not evaluated under Criterion D for their potential to yield information important in history since this criterion is generally reserved for archaeological properties. Criteria Considerations A–G were also taken into account where applicable (see Appendix A on page 77 for more information on these criteria considerations).

After the architectural survey was completed, separate Virginia Cultural Resource Information System (VCRIS) forms and accompanying documentation for each recorded resource were prepared in accordance with DHR policies and practices. Each VCRIS packet includes a VCRIS form, site plan, set of printed photographs, and a CD of digital photos depicting each resource. The hard copy and electronic versions of the photographs were labeled and prepared according to DHR standards and will be submitted to DHR for their files.

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BACKGROUND REVIEW

As part of this study, Dovetail conducted a background literature and records review of WFF at the DHR to assist in establishing a context for those resources documented and evaluated during the architectural survey. This included an examination of records based on previous cultural resource investigations completed at WFF and previously recorded architectural resources within the WFF boundaries and a 1-mile radius surrounding the base.

This section of the current document summarizes the findings of the background review only; this background review does not serve as the results of the architectural survey which are discussed in the subsequent chapter entitled "Survey Results" (p. 41).

Previous Cultural Resources Surveys Within or Adjacent to WFF

During the background review, Dovetail identified six previously completed studies or surveys within or near the WFF complex. In 2003, URS and E&G completed a study that had five goals for WFF: 1) update the historic context, 2) create an archaeological sensitivity model, 3) compile an overview assessment of facility structures for potential historic significance and integrity (condition), 4) complete a reconnaissance-level architectural study of selected resources over 50 years in age, and 5) make recommendations for future NRHP planning (Myers et al. 2003). As a result of the survey, the team identified six archaeological sites and surveyed a total of 166 above-ground resources that ranged in construction date from 1936 to 1955. These resources were not evaluated for individual NRHP potential during that survey (Myers et al. 2003).

One year later, the same two firms conducted a reconnaissance-level architectural survey of 124 additional buildings, structures, and objects at WFF built before 1955. The team recommended one resource, WFF No. V-065, Wallops Beach Lifeboat Station (001-0027-0100), and WFF No. V-070, the Coast Guard Observation Tower (001-0027-0101) eligible for the NRHP under Criteria A and C. That same year, DHR determined that the Wallops Beach Lifesaving Station is potentially eligible for individual listing in the NRHP and the Coast Guard Observation Tower, although not individually eligible for the NRHP, should be considered a contributing element to the Wallops Beach Lifeboat Station. DHR determined that the remaining 122 resources were not eligible for the NRHP (Holycross and Tuminaro 2004:A-1).

In 2009, New South Associates completed a cultural resources survey for a proposed air strip on the WFF complex. During this study, they identified one previously recorded archaeological site (44AC0089) and identified the North Observation Mound (001-0027-0125), a wooden deck set atop a dirt mound, which was previously recommended not eligible for the NRHP during the 2003 survey (Espenshade and Lockerman 2009). New South Associates gathered additional documentation on the resource, but still recommended it not eligible as a result of their study. Following this report, NASA decided to treat site 44AC0089 as an eligible resource.

Lori O. Thursby and Kimberly Martin of TEC, Inc. completed a study of WFF in 2011. During this three-part effort, they compiled archival research to create a historic context for WFF, completed a reconnaissance-level survey of 76 resources constructed between 1956 and 1965, and made NRHP eligibility recommendations for those 76 resources. At the end of the survey, Thursby and Martin (2011) concluded that none of the properties they identified and evaluated possessed sufficient significance and/or integrity to warrant listing in the NRHP. As such, they recommended that all 76 resources be considered not eligible for the NRHP.

In 2010 Versar, Inc. and Environmental Research Group, LLC conducted a Phase I archaeological survey and viewshed analysis for three proposed antenna pads at WFF. Archaeologists recovered artifacts that were "consistent with 19th-to-mid-20th-century use of the property as an agricultural field. The artifacts were interpreted as reasonable evidence of historic use of the area, perhaps outside the footprint of the testable area, and therefore recorded as archaeological site 444C0566" (Rohm et al. 2010:iii). They recommended the site as not eligible for the NRHP. During the viewshed study, they also recommended "that the architectural resources on WFF property were not NRHP-eligible, and furthermore that the proposed development would not cause impacts to the setting of a farmstead and cemetery located north of the study area" (Rohm et al. 2010:iii–iv).

On behalf of NASA, TEC, Inc. completed a historic structures study on two buildings, WFF Nos. Z-020 and Z-025 (001-0027-0126 and 001-0027-0127) in 2011. TEC Inc. recommended both of these one-story, front-gabled buildings not eligible for listing in the NRHP (Bryant 2011:v).

In May 2017, URS conduced a Phase I cultural resources analysis for the proposed construction and operation of a 750-foot tall, guyed instrumentation 11 tower on one of two alternative sites on Wallops Island at WFF. Following the Phase I effort, DHR requested that URS complete a second phase of work that included:

> 1) conducting a reconnaissance-level survey of the Wisharts Point Road potential historic district following the DHR's Guidelines for Conducting Historic Resources survey in Virginia, October 2011; 2) amending Figure 1 (from the prior Phase I report) to further identify the locations, names, and total heights of existing vertical structures that share the coast line with the proposed tower (Attachment 1); and 3) providing representative photographs with visual simulations of the proposed tower geo-located and to scale on the alternative sites to depict the potential visual effects from three (3) historic structures, the proposed Wisharts Point Road Historic District, and the Assateague Beach Life-Saving Station, to assist in determining if the historic properties' higher surrounding elevations and vegetation would "screen" the proposed tower [URS 2017:A-32].

As part of the survey, URS documented the potential Wisharts Point historic district (this resource has not yet received a DHR number). They stated that: "The community consists of eight historic houses constructed from 1900 to 1920, of which all are located within the

indirect APE. The houses are vernacular interpretations of the Greek Revival, Gothic Revival, Colonial Revival, and Bungalow styles" (URS 2017:9). URS recommended that this historic district is eligible for the NRHP under Criterion A for its "its association with events that have made a contribution to the 557 broad patterns of Accomack County, Virginia's maritime and transportation history" (URS 2017:32). At the time of the current survey completed by Dovetail, this historic district has not received a formal NRHP eligibility determination from DHR staff.

Previously Recorded Architectural Resources Within the WFF Boundaries and a 1-Mile Radius

A total of 213 resources have been recorded within the WFF complex or within a 1-mile radius of its boundaries. Of the 213 recorded resources, two (Wharton Place, 001-0050 and Mount Wharton, 001-0052) have been listed in or determined eligible for the NRHP (Table 1, p. 29), and neither of are within WFF boundaries. Wharton Place (001-0050) is a two-story, brick dwelling constructed in the Federal style around 1825. It was listed in the Virginia Landmarks Register (VLR) and the NRHP in 1972. The one-and-a-half-story, single-family dwelling known as Mount Wharton (001-0052) was constructed around 1772. This frame building features a central-hall plan and reflects the Colonial style. Four domestic outbuildings and a cemetery that dates to the early-nineteenth century are associated with Mount Wharton. This resource was determined eligible for the NRHP under Criterion C by the DHR Board in 2008.

One of the 213 resources has been determined potentially eligible for NRHP listing. The WFF No. V-065, Wallops Beach Lifesaving Station and WFF No. V-070, Observation Tower (001-0027-0100), located within the boundaries of WFF, was constructed in 1933 and reflects the Colonial Revival architectural style. The three-and-a-half-story, frame dwelling is covered by a gabled roof. In 2004, DHR determined that the resource is potentially eligible for listing in the NRHP.

Of the 213 resources within 1 mile of WFF, 203 have been previously determined not eligible for individual listing in the NRHP by DHR staff. Of those, two are bridges, one spans route 175 over Cockle Creek (100-5008) and the second extends across Mosquito Creek (100-5009). Files at DHR provide little information about these two resources, although they do state that DHR determined these two resources not eligible for listing in the NRHP in 1994.

Included in the 203 resources previously determined as not eligible is the Wallops Island Flight Facility Historic District (001-0027) comprising 6,500 acres that dates to 1945 and is inclusive of the Wallops Main Base, Mainland, and Island. According to National Park Service (NPS) guidelines on resource types and classifications, a district is a "concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development" (Shrimpton et al. 1990). Because WFF meets the qualifications of a district resource type, it is referred to as such in DHR records and received the resource name Wallops Island Flight Facility Historic District (001-0027). In addition, when Dovetail refers to this particular resource as recorded with DHR in the

remainder of this report, the term "district" will be used in those instances. Following a 2004 survey, DHR determined that this historic district is not eligible for listing in the NRHP under any criteria. In a 2011 revisit, DHR concurred with their previous determination that the district was not eligible.

In addition, 201 buildings, structures, and objects within WFF have been surveyed and recorded as individual properties located within the boundaries of the Wallops Island Flight Facility Historic District (001-0027). This includes 125 resources surveyed in 2004 built between 1933 and 1959 comprising a wide variety of buildings and structures, including those associated with sewage treatment, a gymnasium, family housing, storage facilities, launch areas, dormitories, and an air traffic control building. An additional 76 resources were constructed between 1959 and 1965 and surveyed as part of the 2011 survey. According to the VCRIS entry by TEC, Inc. in 2011:

> The majority of buildings constructed between 1959 and 1965 at WFF are one- or two-story structures of concrete or concrete block, flat roofs, and concrete foundations. The buildings are plain, with no ornament. WFF includes numerous communications towers. These include multi-story steel lattice towers or concrete pedestals supporting parabolic antennas [DHR 2011].

Of these 201 individually surveyed resources within the Wallops Island Flight Facility Historic District (001-0027), all but one (the previously discussed The WFF No. V-065, Wallops Beach Lifesaving Station and WFF No. 070, Observation Tower [001-0027-0100]) were determined not eligible for listing in the NRHP by DHR staff.

The remaining resources have not been evaluated for the NRHP. These seven resources comprise one house, three farms, two churches, and a cemetery. Few details are on file for the Matthew House (001-0155), except that it was noted as demolished in 1952. The three farms are Dublin Farm (001-5069), Green Farm (001-5255), and the Farm at 13454 Arbuckle Neck Road (001-5348). The earliest (001-5255) was constructed in 1768 and the most recent (001-5348) dates to the turn of the twentieth century. Associated with each are domestic and agricultural outbuildings.

Both churches, the Church at 12034 Atlantic Road (001-5252) and Assawoman United Methodist Church and Cemetery (001-5253), date to circa 1900. The Church on Atlantic Road is a one-story, frame building clad in vinyl siding with a rear shed-roofed addition. Similarly, the wood-frame, vinyl-clad Assawoman United Methodist Church stands one story tall and has been altered through the construction of an addition on the rear elevation. Associated with this church is a cemetery that contains interments dating from 1911 to 2012. The remaining resource is the Colona Cemetery (001-5070), a late-nineteenth-century graveyard that was likely once associated with a house that is no longer standing. This small resource contains six interments marked with headstone, dating from 1885 to 1950.

Table 1: Previously Recorded Architectural Resources Located Within Both the Project APE for Visual Effects and the Surrounding 1-Mile Radius (Organized by WFF Property Number).

WFF Property No.	DHR ID	Property Names	Date	Evaluation Status
A-001	001-0027-0001	WFF# A-001 - Air Traffic Control (ATC) Operations Building	1944	DHR Staff: Not Eligible, 2004
A-003	001-0027-0002	WFF # A-003 - Taxiway Lighting and Switchgear Building	1944	DHR Staff: Not Eligible, 2004
A-041	001-0027-0003	WFF # A-041 - Runway AN/FPS Radar Operations Building	1947	DHR Staff: Not Eligible, 2004
A-046A	001-0027-0004	WFF # A-046A - Jet Fuel Storage Tank	1953	DHR Staff: Not Eligible, 2004
A-046B	001-0027-0005	WFF # A-046B - Jet Fuel Storage Tank	1953	DHR Staff: Not Eligible, 2004
A-131	001-0027-0006	WFF # A-131 - Source Evaluation Board Building	1955	DHR Staff: Not Eligible, 2004
B-031	001-0027-0007	WFF # B-031 - General Warehouse Storage Building	1944	DHR Staff: Not Eligible, 2004
B-129	001-0027-0008	WFF # B-129 - Air Control Fire and Crash Building	1955	DHR Staff: Not Eligible, 2004
C-015	001-0027-0009	WFF # C-015-Fire Prevention/Proc. Fac. Building	1946	DHR Staff: Not Eligible, 2004
C-094	001-0027-0010	WFF # C-094 - Airfield Lighting Control Vault	1953	DHR Staff: Not Eligible, 2004
D-001	001-0027-0011	WFF # D-001-A/C Maint. - Hanger-Avionic	1944	DHR Staff: Not Eligible, 2004
D-004	001-0027-0012	WFF # D-004 - Water Pumping Station	1944	DHR Staff: Not Eligible, 2004
D-008	001-0027-0013	WFF # D-008 - Central Heating Plant	1944	DHR Staff: Not Eligible, 2004
D-010	001-0027-0014	WFF # D-010-Gymnasium	1945	DHR Staff: Not Eligible, 2004
D-012	001-0027-0015	WFF # D-012 - Sewage and Waste Disposal Pump House	1944	DHR Staff: Not Eligible, 2004
D-012A	001-0027-0016	WFF # D-012A - Sewage Treatment Plant Biofilter	1944	DHR Staff: Not Eligible, 2004
D-012B	001-0027-0017	WFF # D-012B - Sewage Treatment Plant Comminutor	1944	DHR Staff: Not Eligible, 2004
D-012C	001-0027-0018	WFF # D-012C Sewage Treatment Plant Primary Sediment Tank	1944	DHR Staff: Not Eligible, 2004

WFF Property No.	DHR ID	Property Names	Date	Evaluation Status
D-012D	001-0027-0019	WFF # D-012D - Sewage Treatment Plant Sludge Drying Bed	1944	DHR Staff: Not Eligible, 2004
D-012E	001-0027-0020	WFF # D-012E - Sewage Treatment Plant Sludge Digestion Tank	1944	DHR Staff: Not Eligible, 2004
D-012G	001-0027-0021	WFF # D-012G - Sewage Treatment Plant Secondary Sedimentation Tank	1944	DHR Staff: Not Eligible, 2004
D-012J	001-0027-0022	WFF # D-012J - Sewage Treatment Plant Chlorine Reactor Basin	1944	DHR Staff: Not Eligible, 2004
D-095	001-0027-0023	WFF # D-095 - Water Reservoir	1954	DHR Staff: Not Eligible, 2004
D-096	001-0027-0024	WFF # D-096 - Sewage Treatment Plant Rotary Biofilter	1954	DHR Staff: Not Eligible, 2004
D-097	001-0027-0025	WFF # D-097 - Sewage Treatment Plant Primary Sediment Tank	1954	DHR Staff: Not Eligible, 2004
D-098	001-0027-0026	WFF # D-098 - Sewage Treatment Plant Sludge Drying Bed	1954	DHR Staff: Not Eligible, 2004
D-098A	001-0027-0027	WFF# D-098A - Sewage Treatment Plant Sludge Drying Bed	1954	DHR Staff: Not Eligible, 2004
D-099	001-0027-0028	WFF # D-099 - Sewage Treatment Plant Sludge Digestion Tank	1954	DHR Staff: Not Eligible, 2004
D-100	001-0027-0029	WFF # D-100 - Sewage Treatment Plant Secondary Sedimentation Tank	1954	DHR Staff: Not Eligible, 2004
D-101	001-0027-0030	WFF # D-101-Optical Devel. Lab & Proj. E	1954	DHR Staff: Not Eligible, 2004
D-102	001-0027-0031	WFF # D-102 - Fuel Oil Storage Tank	1954	DHR Staff: Not Eligible, 2004
D-103	001-0027-0032	WFF # D-103 - Fuel Oil Storage Tank	1954	DHR Staff: Not Eligible, 2004
D-137	001-0027-0033	WFF # D-137 - Water Treatment Pump House	1955	DHR Staff: Not Eligible, 2004
E-002	001-0027-0034	WFF # E-002 - Cafeteria and Photo Lab	1944	DHR Staff: Not Eligible, 2004
E-005	001-0027-0035	WFF # E-005 - Contract Office and Storage Building	1944	DHR Staff: Not Eligible, 2004
E-007	001-0027-0036	WFF # E-007 - ASB RCDS Store/Post Office Mail & File	1945	DHR Staff: Not Eligible, 2004

WFF Property No.	DHR ID	Property Names	Date	Evaluation Status
E-104	001-0027-0037	WFF # E-104 - Management Education Center	1954	DHR Staff: Not Eligible, 2004
E-105	001-0027-0038	WFF # E-105-Proc. Fiscal Offices (Lib) Building	1954	DHR Staff: Not Eligible, 2004
E-106	001-0027-0039	WFF # E-106-Observational Science Building	1954	DHR Staff: Not Eligible, 2004
E-107	001-0027-0040	WFF # E-107 - Sound Rocket/Balloon Project Building	1954	DHR Staff: Not Eligible, 2004
E-108	001-0027-0041	WFF # E-108 - Engineering Building	1954	DHR Staff: Not Eligible, 2004
E-134	001-0027-0042	WFF # E-134 - Mobile Radar Shop Office/Storage Building	1955	DHR Staff: Not Eligible, 2004
E-144	001-0027-0128	E-144, Ionosphere Sounding and Solar Data Center, E-144, Ionosphere Sounding Station	1956	DHR Staff: Not Eligible, 2011
F-001	001-0027-0043	WFF # F-001 - Reproduction and Office Building	1946	DHR Staff: Not Eligible, 2004
F-002	001-0027-0044	WFF # F-002 - Telecommunication Facility Building	1946	DHR Staff: Not Eligible, 2004
F-003	001-0027-0045	WFF # F-003 - Conference and Morale Activities Building	1946	DHR Staff: Not Eligible, 2004
F-004	001-0027-0046	WFF # F-004 - Dormitory	1946	DHR Staff: Not Eligible, 2004
F-005	001-0027-0047	WFF # F-005 - Dormitory	1946	DHR Staff: Not Eligible, 2004
F-006	001-0027-0048	WFF # F-006 - NASA Headquarters Building	1946	DHR Staff: Not Eligible, 2004
F-007	001-0027-0049	WFF # F-007 - Property and Supply Building	1946	DHR Staff: Not Eligible, 2004
F-008	001-0027-0050	WFF # F-008 - Plating Shop	1946	DHR Staff: Not Eligible, 2004
F-010	001-0027-0051	WFF # F-010 - Technical Service Shops and Offices	1944	DHR Staff: Not Eligible, 2004
F-010A	001-0027-0052	WFF # F-010A - Tool and Equipment Storehouse	1947	DHR Staff: Not Eligible, 2004
F-015	001-0027-0054	WFF # F-015 - Outdoor Tennis Court	1946	DHR Staff: Not Eligible, 2004
F-027	001-0027-0055	WFF # F-027 - Paper Shredder Facility	1947	DHR Staff: Not Eligible, 2004

WFF Property No.	DHR ID	Property Names	Date	Evaluation Status
F-030	001-0027-0056	WFF # F-030 - Wallops Employee Morale Association Recreational Facility	1950	DHR Staff: Not Eligible, 2004
F-036	001-0027-0057	WFF # F-036 - Wallops Employee Morale Association Storage Building	1952	DHR Staff: Not Eligible, 2004
F-044	001-0027-0058	WFF # F-044 - Supply Paint Storage	1953	DHR Staff: Not Eligible, 2004
F-10B	001-0027-0053	WFF # F-010B - Heat Treating Shop	1950	DHR Staff: Not Eligible, 2004
F-157	001-0027-0129	F-157, Office Furniture Supply	1957	DHR Staff: Not Eligible, 2011
F-160	001-0027-0130	Base Hospital, F-160, Calibration Lab, EICS, F-160, Health/Quality Verification Lab/Environmental Building, F-160, Instrument Service, Calibration & Chemistry Labs, F-160, Personnel/Environmental /Health & Safety/Quality Verification Lab Building, F-160, Quality Verification Laboratories Building	1957	DHR Staff: Not Eligible, 2011
F-163	001-0027-0131	F-163, Calibration Laboratory Bulk Storage Building, F-163, Chemical Storage Building	1963	DHR Staff: Not Eligible, 2011
F-170	001-0027-0132	F-170, Plant Operations and Maintenance Branch (POMB) Storage Building	1957	DHR Staff: Not Eligible, 2011
F-172	001-0027-0059	WFF # F-172 - ACS Pressure Vessel Testing Magazine	1955	DHR Staff: Not Eligible, 2004
H-002	001-0027-0060	WFF # H-002 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-003	001-0027-0061	WFF # H-003 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-004	001-0027-0062	WFF # H-004 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-005	001-0027-0063	WFF # H-005 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-006	001-0027-0064	WFF # H-006 - Family Housing	1947	DHR Staff: Not Eligible, 2004

WFF Property No.	DHR ID	Property Names	Date	Evaluation Status
H-007	001-0027-0065	WFF # H-007 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-008	001-0027-0066	WFF # H-008 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-009	001-0027-0067	WFF # H-009 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-010	001-0027-0068	WFF # H-010 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-011	001-0027-0069	WFF # H-011 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-012	001-0027-0070	WFF # H-012 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-015	001-0027-0071	WFF # H-015 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-016	001-0027-0072	WFF # H-016 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-017	001-0027-0073	WFF # H-017 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-018	001-0027-0074	WFF # H-018 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-019	001-0027-0075	WFF # H-019 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-020	001-0027-0076	WFF # H-020 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-021	001-0027-0077	WFF # H-021 - Family Housing	1947	DHR Staff: Not Eligible, 2004
H-023	001-0027-0078	WFF # H-023 - Water Pump House	1948	DHR Staff: Not Eligible, 2004
H-024	001-0027-0079	WFF # H-024 - Family Housing	1949	DHR Staff: Not Eligible, 2004
H-025	001-0027-0080	WFF # H-025 - Family Housing	1949	DHR Staff: Not Eligible, 2004
H-026	001-0027-0081	WFF # H-026 - Family Housing	1949	DHR Staff: Not Eligible, 2004
H-027	001-0027-0082	WFF # H-027 - Family Housing	1949	DHR Staff: Not Eligible, 2004
H-028	001-0027-0083	WFF # H-028 - Family Housing	1949	DHR Staff: Not Eligible, 2004
H-030	001-0027-0084	WFF # H-030 - 4 Car Garage/Wallops Employee Morale Association	1950	DHR Staff: Not Eligible, 2004
H-114	001-0027-0085	WFF # H-114 - Water Pump House	1954	DHR Staff: Not Eligible, 2004
I-004	001-0027-0152	I-004, Wallops Island Causeway and Cat Creek Bridge	1960	DHR Staff: Not Eligible, 2011

WFF Property No.	DHR ID	Property Names	Date	Evaluation Status
J-017	001-0027-0086	WFF # J-017-Vic. Exhibit Display Area Building	1953	DHR Staff: Not Eligible, 2004
J-093	001-0027-0087	WFF # J-093-Vic. Concession Building	1953	DHR Staff: Not Eligible, 2004
M-001	001-0027-0088	WFF # M-001 - Plant Operation and Maintenance Shops Support/Storage Building	1945	DHR Staff: Not Eligible, 2004
M-003	001-0027-0089	WFF # M-003 - Underground Magazine	1945	DHR Staff: Not Eligible, 2004
M-004	001-0027-0090	WFF # M-004 - Underground Magazine	1945	DHR Staff: Not Eligible, 2004
M-005	001-0027-0091	WFF # M-005 - Underground Magazine	1945	DHR Staff: Not Eligible, 2004
M-006	001-0027-0092	WFF # M-006 - Underground Magazine	1945	DHR Staff: Not Eligible, 2004
M-009	001-0027-0093	WFF # M-009 - Underground Magazine	1945	DHR Staff: Not Eligible, 2004
M-010	001-0027-0094	WFF # M-010 - Underground Magazine	1945	DHR Staff: Not Eligible, 2004
M-011	001-0027-0095	WFF # M-011 - Underground Magazine	1945	DHR Staff: Not Eligible, 2004
M-012	001-0027-0096	WFF # M-012 - Underground Magazine	1945	DHR Staff: Not Eligible, 2004
M-014	001-0027-0097	WFF # M-014 - Underground Magazine	1945	DHR Staff: Not Eligible, 2004
M-015	001-0027-0133	M-15, Rocket Inspection and Storage Building	1963	DHR Staff: Not Eligible, 2011
M-016	001-0027-0134	M-16, Inert Rocket Hardware and Hardware Inspection Shelter	1963	DHR Staff: Not Eligible, 2011
M-017	001-0027-0135	M-17, Heating Plant Building	1963	DHR Staff: Not Eligible, 2011
M-025	001-0027-0136	M-25, Ready Issue Minor Hazard Explosives Magazine	1957	DHR Staff: Not Eligible, 2011
M-183	001-0027-0137	M-183, Ready Service Pyrotechnics Storage Magazine	1958	DHR Staff: Not Eligible, 2011
M-184	001-0027-0138	M-184, Ready Issue Explosive Storage Magazine	1958	DHR Staff: Not Eligible, 2011
N-116	001-0027-0098	WFF # N-116 - Inactive Equipment Storage Building	1954	DHR Staff: Not Eligible, 2004
N-133	001-0027-0139	N-133, Gov't Vehicle Filling Station, N-133, NASA Federal Credit Union	1956	DHR Staff: Not Eligible, 2011

WFF Property No.	DHR ID	Property Names	Date	Evaluation Status
N-134	001-0027-0140	N-133, Gov't Vehicle Filling Station, N-134, VA Commercial Space Flight Authority and Mid-Atlantic Regional Spaceport Office, N-134, Wallops Exchange Office, N-134, Wallops Federal Credit Union	1956	DHR Staff: Not Eligible, 2011
N-159	001-0027-0141	Fasron Hangar, N-159, Range Control Center and Model Assembly Area, N-159, Research Aircraft and Observation Science Lab	1957	DHR Staff: Not Eligible, 2011
N-159E	001-0027-0142	N-159E, ASR-7 Radar Antenna/Pedestal Tower	1961	DHR Staff: Not Eligible, 2011
N-161	001-0027-0099	WFF # N-161 - Flight Information Control and Analysis Laboratory	1953	DHR Staff: Not Eligible, 2004
N-162	001-0027-0143	N-162, Telecommunications Facility Building, N-162, Telemetry Building	1957	DHR Staff: Not Eligible, 2011
N-162B	001-0027-0144	N-162B, Frequency Monitoring Antenna Tower	1963	DHR Staff: Not Eligible, 2011
N-163	001-0027-0145	N-163, Air to Ground Blockhouse, N-163, Antenna Calibration Measurement Facility	1963	DHR Staff: Not Eligible, 2011
N-164	001-0027-0146	N-164, Explosives Handling Equipment Storage Building	1965	DHR Staff: Not Eligible, 2011
N-166	001-0027-0147	N-166, Explosives Handling Equipment Storage Building	1957	DHR Staff: Not Eligible, 2011
N-167	001-0027-0148	N-167, X- Band Antenna Central Control Building	1965	DHR Staff: Not Eligible, 2011
N-174	001-0027-0149	N-174, Bore Sight and Calibration Tower	1962	DHR Staff: Not Eligible, 2011
N-218	001-0027-0150	N-218, Chemical Storage Building	1957	DHR Staff: Not Eligible, 2011
N-222	001-0027-0151	N-222, General Storage Building, N-222, Surplus Utilization and Disposal Building	1957	DHR Staff: Not Eligible, 2011
U-005	001-0027-0153	U-005, Mainland Terminal Building	1961	DHR Staff: Not Eligible, 2011
U-020A	001-0027-0154	U-20A, Radar Antenna Pedestal Tower “B"	1959	DHR Staff: Not Eligible, 2011
U-020B	001-0027-0155	U-20B, Electrical Power Control Building	1959	DHR Staff: Not Eligible, 2011

WFF Property No.	DHR ID	Property Names	Date	Evaluation Status
U-025	001-0027-0156	U-25, Radar Operations Building	1959	DHR Staff: Not Eligible, 2011
U-025A	001-0027-0157	U-25A, Radar Antenna Pedestal Tower "A"	1959	DHR Staff: Not Eligible, 2011
U-026	001-0027-0158	U-26, Projects Maintenance Shop	1961	DHR Staff: Not Eligible, 2011
U-027	001-0027-0159	U-27, Spare Parts Storage Building	1960	DHR Staff: Not Eligible, 2011
U-030	001-0027-0160	U-30, Spandar Radar Operations Building	1960	DHR Staff: Not Eligible, 2011
U-030A	001-0027-0161	U-30A, Spandar Radar Tower Pedestal	1961	DHR Staff: Not Eligible, 2011
U-040	001-0027-0162	U-40, Mobile Radar Laboratory, U-40, Structural Firefighting Training Building, U-40, Telescope and Laboratory	1961	DHR Staff: Not Eligible, 2011
U-055	001-0027-0163	U-55, Transmitter Building	1964	DHR Staff: Not Eligible, 2011
U-055A	001-0027-0164	U-55A, High Frequency Antenna Tower	1965	DHR Staff: Not Eligible, 2011
U-060	001-0027-0165	U-60, Collimation Beacon and Tower	1965	DHR Staff: Not Eligible, 2011
U-064	001-0027-0166	U-64, Communications Antenna Support Tower	1965	DHR Staff: Not Eligible, 2011
U-070	001-0027-0167	U-70, AN/FPQ-6 Radar Building	1964	DHR Staff: Not Eligible, 2011
U-070A	001-0027-0168	U-70A, AN/FPQ-6 Radar Antenna Pedestal Tower	1964	DHR Staff: Not Eligible, 2011
U-080	001-0027-0169	U-80, Atmospheric Physics Measurement Lab, U-80, Special Optics Building and Observatory Dome	1965	DHR Staff: Not Eligible, 2011
V-025	001-0027-0170	V-25, Auxiliary Range Building, V-25, Inert Payload Assembly and Checkout Building	1957	DHR Staff: Not Eligible, 2011
V-030	001-0027-0171	V-30, Ammunition Magazine, V-30, Electric Power Equipment Storage	1958	DHR Staff: Not Eligible, 2011
V-045	001-0027-0173	V-45, Horizontal Dynamic Balance Test Building	1963	DHR Staff: Not Eligible, 2011
V-050	001-0027-0174	V-50, Dynamic Balance Control Center Building	1963	DHR Staff: Not Eligible, 2011

WFF Property No.	DHR ID	Property Names	Date	Evaluation Status
V-050A	001-0027-0175	V-050A, Utility Canopy	1963	DHR Staff: Not Eligible, 2011
V-052	001-0027-0176	V-52, Ready Service Chemical Storage Magazine	1956	DHR Staff: Not Eligible, 2011
V-055	001-0027-0177	V-55, Vertical Dynamic Balance Test Building	1963	DHR Staff: Not Eligible, 2011
V-065	001-0027-0100	Wallops Beach Lifesaving Station and Observation Tower, Wallops Beach Station, WFF # V-065 - WEMA Recreational Facility	1933	DHR Staff: Potentially Eligible, 2004
V-070	001-0027-0101	Wallops Beach Station Observation Tower, WFF # V-070 - Wallops Island Flight Facility	1936	DHR Staff: Not Individually Eligible; Contributing to 001-0027-0101
V-080	001-0027-0178	V-80, Rocket Motor Ready Storage, V-80, Vehicle Checkout Facility	1963	DHR Staff: Not Eligible, 2011
V-090	001-0027-0102	WFF # V-090 - Elevated Water Tank	1954	DHR Staff: Not Eligible, 2004
V-130	001-0027-0103	WFF # V-130-Observation Tower	1949	DHR Staff: Not Eligible, 2004
W-005A	001-0027-0190	X-05A, Path Finder Radar Antenna Tower	1966	DHR Staff: Not Eligible, 2011
W-010	001-0027-0179	W-10, Launch Area Cable Terminal Building	1960	DHR Staff: Not Eligible, 2011
W-015	001-0027-0180	Maintenance Building, W-15, Assembly Shop No. 4	1964	DHR Staff: Not Eligible, 2011
W-016	001-0027-0181	W-16, Ready Storage Cubicle	1957	DHR Staff: Not Eligible, 2011
W-020	001-0027-0182	W-20, Blockhouse No. 3	1960	DHR Staff: Not Eligible, 2011
W-035B	001-0027-0104	WFF # W-035B-Cable Term Building	1955	DHR Staff: Not Eligible, 2004
W-035B	001-0027-0183	W-35, Terminal Building Launch Area No. 4	1960	DHR Staff: Not Eligible, 2011
W-040	001-0027-0184	W-40, Assembly Shop No. 5	1964	DHR Staff: Not Eligible, 2011
W-050	001-0027-0185	W-50, Launch Area Cable Terminal Building	1960	DHR Staff: Not Eligible, 2011
W-051	001-0027-0186	W-51, Flammables Storehouse Ready Magazine, W-51, Launch Pad 5 Firing Cubical	1956	DHR Staff: Not Eligible, 2011
W-057	001-0027-0187	W-57, Microwave Rain Attenuation Tower	1961	DHR Staff: Not Eligible, 2011

WFF Property No.	DHR ID	Property Names	Date	Evaluation Status
W-065	001-0027-0188	W-65, Checkout and Assembly Shop No. 3	1963	DHR Staff: Not Eligible, 2011
W-067	001-0027-0189	W-67, Ready Issue Explosive Storage Cubicle	1963	DHR Staff: Not Eligible, 2011
X-005	001-0027-0105	WFF # X-005 Service Station	1953	DHR Staff: Not Eligible, 2004
X-015	001-0027-0106	WFF # X-015 Delrum. Storage & Assembly Shop #2	1950	DHR Staff: Not Eligible, 2004
X-030	001-0027-0107	WFF # X-030 Paint Shop	1953	DHR Staff: Not Eligible, 2004
X-035	001-0027-0108	WFF # X-035 Damage Control and Service Shops	1947	DHR Staff: Not Eligible, 2004
X-055	001-0027-0109	Scout Project Office, WFF # X-055-General Services Building	1947	DHR Staff: Not Eligible, 2004
X-065	001-0027-0110	Station #1, WFF # X-065 Turret Camera Tracking Station #5	1951	DHR Staff: Not Eligible, 2004
X-075	001-0027-0191	X-75, Island Terminal Building	1960	DHR Staff: Not Eligible, 2011
X-085	001-0027-0192	X-85, Meteorological Observation Center, X-85, Special Projects Building	1963	DHR Staff: Not Eligible, 2011
X-105	001-0027-0111	WFF # X-105-Shop & Electrical Maintenance Storage Building	1955	DHR Staff: Not Eligible, 2004
X-115	001-0027-0112	WFF # X-115 Plant Operations and Maintenance Branch Shop and Storage	1955	DHR Staff: Not Eligible, 2004
Y-010	001-0027-0193	Y-10, Fuel Storage Magazine	1957	DHR Staff: Not Eligible, 2011
Y-015	001-0027-0113	WFF # Y-015 Assembly Shop #1	1950	DHR Staff: Not Eligible, 2004
Y-016	001-0027-0194	Y-16, Ready Service Magazine	1957	DHR Staff: Not Eligible, 2011
Y-020	001-0027-0195	Y-20, Ordnance and Explosives Ready Issue Storage Magazine	1957	DHR Staff: Not Eligible, 2011
Y-025	001-0027-0114	WFF # Y-025 Propellant Magazine	1950	DHR Staff: Not Eligible, 2004
Y-026	001-0027-0172	Ready Service Chemical Storage Magazine, Y-26	1956	DHR Staff: Not Eligible, 2011
Y-030	001-0027-0115	Control Center 1, WFF # Y-030-Blockhouse #2	1950	DHR Staff: Not Eligible, 2004

WFF Property No.	DHR ID	Property Names	Date	Evaluation Status
Y-035	001-0027-0116	Launch Area 1, WFF # Y-035 Launch Area #2 (Pads A, B and C)	1950	DHR Staff: Not Eligible, 2004
Y-037	001-0027-0196	Y-37, Firing Cubicle	1956	DHR Staff: Not Eligible, 2011
Y-038	001-0027-0197	Y-38, Launcher Equipment Shelter	1965	DHR Staff: Not Eligible, 2011
Y-040	001-0027-0117	WFF # Y-040 Propellant Shop	1952	DHR Staff: Not Eligible, 2004
Y-045	001-0027-0118	WFF # Y-045-Igniter Magazine	1950	DHR Staff: Not Eligible, 2004
Y-050	001-0027-0119	WFF # Y-050-Rocket Test Cell	1950	DHR Staff: Not Eligible, 2004
Y-055	001-0027-0198	Y-55, AN/FPS-16 Radar Operations Building	1958	DHR Staff: Not Eligible, 2011
Y-060	001-0027-0120	WFF # Y-060 - Island Radar Control Building	1953	DHR Staff: Not Eligible, 2004
Y-075	001-0027-0121	WFF # Y-075 - Outdoor Electrical Substation	1952	DHR Staff: Not Eligible, 2004
Y-095	001-0027-0199	Y-95, Camera Platform	1964	DHR Staff: Not Eligible, 2011
Y-110	001-0027-0200	Y-110, Camera Platform and 10-ft Astrodome	1964	DHR Staff: Not Eligible, 2011
Z-020	001-0027-0126	Z-020, Liquid Propellant Storage Building	1961	DHR Staff: Not Eligible, 2011
Z-025	001-0027-0127	Z-025, Liquid Propellant Storage Building	1961	DHR Staff: Not Eligible, 2011
Z-035	001-0027-0122	WFF # Z-035 - Tracking Camera Turret with Dome	1951	DHR Staff: Not Eligible, 2004
Z-040	001-0027-0201	Z-40, Aerobee Telemetry Building, Z-40, Launch Area 0 Service Building, Z-40, Launch Control Center Building	1960	DHR Staff: Not Eligible, 2011
Z-065	001-0027-0123	WFF # Z-065 - Blockhouse #1	1952	DHR Staff: Not Eligible, 2004
Z-070	001-0027-0124	WFF # Z-070 - Launch Area #1	1952	DHR Staff: Not Eligible, 2004
N/A	001-0027	Wallops Island Flight Facility Historic District (NASA)	1945	DHR Staff: Not Eligible, 2004
N/A	001-0027-0125	Man-made Mound (Descriptive), North Observation Mound	1952	DHR Staff: Not Eligible, 2004; Treated as Historic by NASA
N/A	001-0050	Wharton Place	ca. 1825	VLR Listing 1972; NRHP Listing 1972

WFF Property No.	DHR ID	Property Names	Date	Evaluation Status
N/A	001-0052	Mount Wharton	ca. 1772	DHR Board Determined Eligible 2008
N/A	001-0155	Matthew House	Not listed	Not Evaluated, No Longer Extant
N/A	001-5008	Cockle Creek Bridge, Route 175	Not Listed	DHR Staff: Not Eligible, 1994
N/A	001-5009	Mosquito Creek Bridge, Route 175	Not Listed	DHR Staff: Not Eligible, 1994
N/A	001-5069	Dublin Farm	ca. 1880	Not Evaluated
N/A	001-5070	Colona Cemetery	post 1885	Not Evaluated
N/A	001-5252	Church, 12034 Atlantic Road	ca. 1900	Not Evaluated
N/A	001-5253	Assawoman United Methodist Church and Cemetery	ca. 1900	Not Evaluated
N/A	001-5255	Farm, 31072 Conquest Farm Lane, Green Farm	1768	Not Evaluated
N/A	001-5348	Farm, 13454 Arbuckle Neck Road	ca. 1900	Not Evaluated

SURVEY RESULTS

The reconnaissance-level survey of the WFF buildings and structures constructed between 1965 and 1981 resulted in the documentation and evaluation of 51 resources, one of which was previously recorded and 50 that were newly recorded and have not received a previous eligibility determination from DHR staff. In addition to those 51 resources, there is one WFF resource constructed in 1963 that had not yet received a formal NRHP eligibility evaluation from DHR staff. Although it pre-dates the range of construction dates of this effort, Dovetail included this resource, WFF No. M-018 (001-0027-0248), in this reconnaissance-level survey to ensure that NASA has complete documentation and evaluation of its WFF resources constructed prior to 1981. As a result, a total of 52 resources were surveyed and evaluated during this project.

Previously Recorded Resource

The previously recorded resource is the Wallops Island Flight Facility Historic District (001-0027) (Table 2; Figure 3–Figure 4, pp. 42–43). This resource was revisited during the current survey because: 1) the newly recorded resources are all located within its boundaries; and 2) it was determined not eligible for the NRHP by DHR staff more than five years ago (determinations occurred in 2004 and 2011). The Wallops Island Flight Facility Historic District (001-0027) dates to the mid-twentieth century and comprises three sections: the Main Base, which flanks Chincoteague Road (State Route 175); Wallops Mainland, approximately 4 miles south of the Main Base primarily centered around Radar Road and Causeway Road; and Wallops Island, accessed by Causeway Road that spans from the Mainland (Figure 3–Figure 4, pp. 42–43). To date, almost 250 individual resources have been recorded within the district boundaries—including the resources surveyed for the current project—ranging in construction date from 1936 to 1981. Most of these resources are one- to two-story masonry utilitarian buildings that lack individual significance. In 2004, DHR determined that the Wallops Island Flight Facility Historic District has no architectural or historical significance and as such is not eligible for listing in the NRHP under any criteria. Following the 2011 survey, DHR concurred with their previous recommendation that the district should remain not eligible. During the brief revisit of this resource as a whole, Dovetail did not feel that the district gained additional significance since the previous determination in 2004 and 2011 revisit. As such, it is recommended that the Wallops Island Flight Facility Historic District (001-0027) remains not eligible for listing in the NRHP.

Table 2: Previously Recorded Resource.

WFF No.	DHR ID	Property Name	Date	Current Eligibility Recommendation	Photographs
N/A	001-0027	Wallops Island Flight Facility Historic District (NASA)	1945	Remains Not Eligible	

Figure 3: Previously Recorded Resource, Wallops Island Flight Facility Historic District (001-0027), Main Base (Esri 2017b).

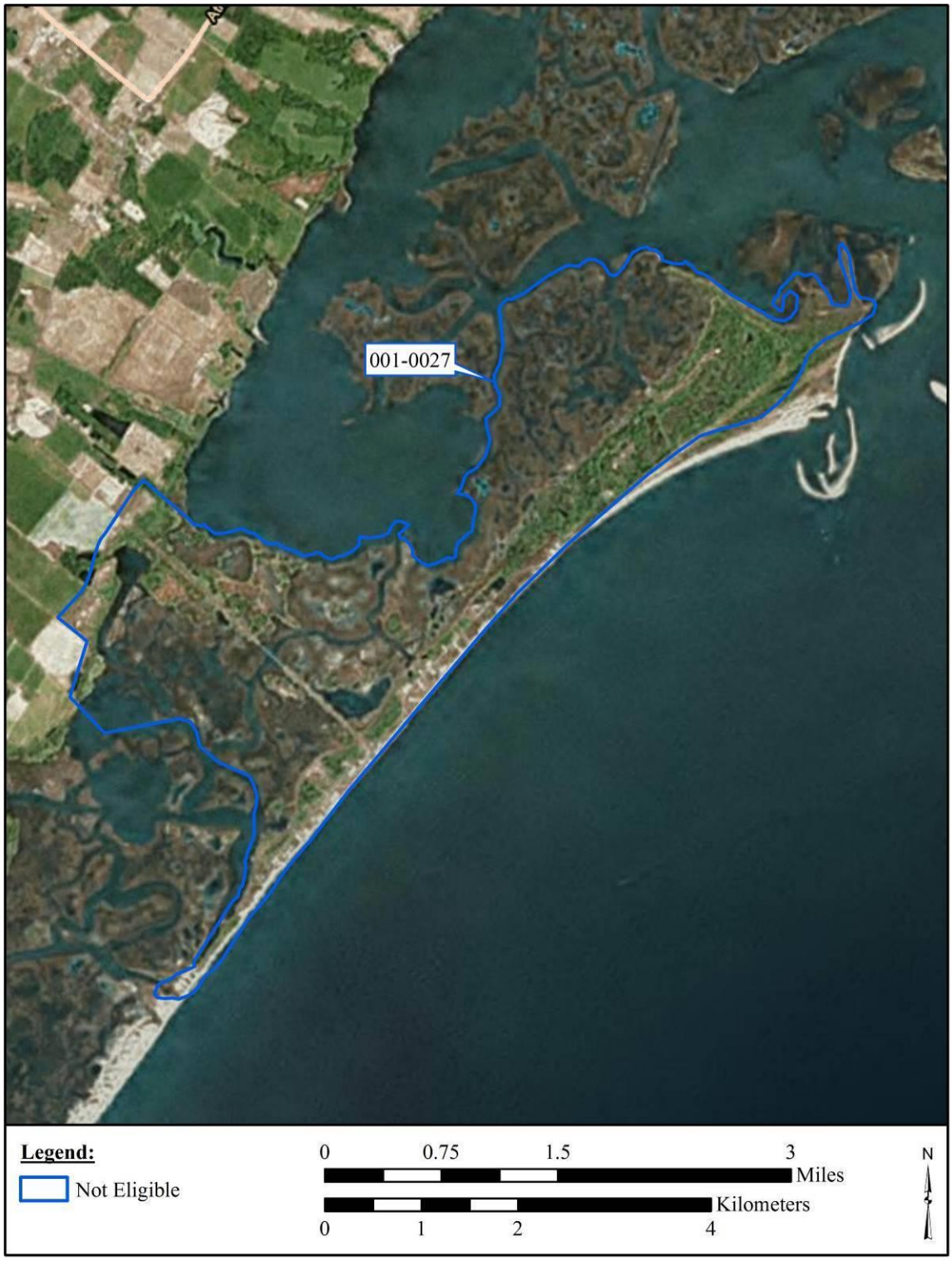


Figure 4: Previously Recorded Resource, Wallops Island Flight Facility Historic District (001-0027), Mainland and Wallops Island (Esri 2017b)

Newly Recorded Resources

The remaining documented and evaluated resources are buildings and structures representative of a DHR-established time period: The New Dominion 1946–1991. However, in a 2011 historic resources eligibility survey, TEC, Inc. divided this period into several subcategories specific to the WFF complex. Of those, the surveyed resources span two WFF-specific time frames: Wallops Station's New Direction: Space Science Research, 1961–1974 and Wallops Flight Facility, 1974–1981 (Thursby and Martin 2011:2-11–2-12). For the purposes of this report, the surveyed resources are separated and discussed in terms of these two periods established by NASA.

Wallops Station's New Direction: Space and Science Research, 1961–1974

Of the 51 newly recorded resources identified during the current 2017 survey, 42 of those were constructed during the Wallops Station's New Direction: Space Science Research, 1961–1974 period (Table 3, p. 46; Figure 5–Figure 10, pp. 57–62). In the mid-twentieth century, testing related to Space Task Group missions took place on Wallops Station (as it was then known); however, by the early 1960s, the testing was moved elsewhere in the country, prompting a transition to space science research at Wallops (Thursby and Martin 2011:2-11). It was also during this period that other government agencies began to utilize the facility, including Federal Aviation Administration, National Bureau of Standards, and the Weather Bureau (Thursby and Martin 2011:2-11).

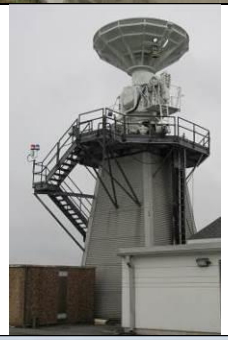
Sixty-five percent of the surveyed resources constructed during this period are small, one-story, concrete-block or poured-concrete buildings (examples include WFF Nos. N-180 [001-0027-0229], U-060A [001-0027-0230], and W-052 [001-0027-0236]. Although some are parged or clad in metal siding, most have an exposed concrete structural system. Almost all of these one-story buildings are covered by a flat roof with varying eave widths. Some resources, such as WFF No. M-019, a Heating Plant Building (001-0027-0215), have no eaves and instead are lined with metal coping, while some, most often seen on the Sewage Ejection Station Buildings (for example, WFF Nos. Y-061 [001-0027-0244] and Z-052 [001-0027-0246]) have extremely wide, overhanging eaves. Fenestration on many of these buildings includes single- or double-leaf metal doors, often featuring a light or vent. Although vents are more common instead of windows, there are examples of fixed, metal-framed, single-sash windows found on buildings in this period. Because of their specific purpose, additions or major alterations to these sheds, sewage ejection buildings, equipment shelters, and storage buildings, among others, are very rare.

Although the above description describes many of the buildings included in the current 2017 survey constructed during this period, there are several outliers. Three of these, including WFF No. F-019, Supply Warehouse (001-0027-0211), WFF No. M-020- Large Rocket Storage Building #3 (001-0027-0216), and WFF No. Z-041, Multi-Function RADAR Facility (001-0027-0245), are larger in size and scale than those previously described. WFF Nos. F-019 and M-020 are both one-story, rectangular buildings clad in metal and covered by a front-gabled roof sheathed in metal. They feature single-leaf, metal pedestrian doors and one or more bays filled with metal garage doors. WFF No. Z-041 (001-0027-0245) comprises a large two-story, central core with two one-story wings extending from the side elevations.

Portions of the building feature an interesting structural system made of large metal panels that feature a geometric pattern flanked on the interior and exterior by a thin, translucent material known as Kalwall. Several additions extend from the building's rear. In 2014, Antares vehicle ORB-3 exploded during liftoff and greatly impacted the condition and integrity of this resource. Constructed in 1963, WFF No. M-018, Rocket Vehicle Shelter (001-0027-0248) is an example of a simple, flat-roofed structure clad in corrugated metal used for storage purposes only. Its east elevation comprises an open bay to allow for easy access for vehicles or machinery. Two resources are concrete-block foundations or pads: WFF Nos. Y-035A (001-0027-0251) and Z-070A (001-0027-0252).

Five of the remaining resources are a variety of antennas, including dome antennas on pedestals and thin wire antennas supported by cables affixed to the ground. In addition to these resources, several objects and smaller structures were included in the list, each identified with a prefix of "S" or "I" before their WFF property number. These latter resources comprise a wide variety of resources such as roadways, man holes, drainage systems, flag poles, and parking areas. At NASA's request, Dovetail consulted with DHR staff regarding these "S" and "I" properties in an email dated October 23, 2017; DHR determined that only the thermal vacuum test chambers and outdoor signs that are of artistic value or display a specific graphic design of the period need to be documented. During the survey, Dovetail documented and evaluated one thermal vacuum chamber (WFF No. S-0158 [001-0027-0247]). This metal object was constructed in 1971 within the northwest corner of WFF No. F-010 (001-0027-0051). WFF No. F-010 was surveyed and received an eligibility determination as part of the 2004 survey. Dovetail did not identify any "S" or "I" signs reflective of artistic values or a design of the period (1965–1981).

Table 3: Newly Recorded Resources Constructed During the Wallops Station's New Direction: Space and Science Research Period, Organized by WFF Property Number.

WFF No.	DHR ID	Property Name	Date of Construction	Current Eligibility Recommendation	Photographs
A-038	001-0027-0202	Liquid Oxygen Storage Facility	1967	Not Eligible	
A-044	001-0027-0203	AN/FPS-16(V) RADAR Antenna	1971	Not Eligible	
E-135	001-0027-0206	Verlort RADAR Pedestal	1968	Not Eligible	

WFF No.	DHR ID	Property Name	Date of Construction	Current Eligibility Recommendation	Photographs
F-011	001-0027-0207	Mobile Generator Testing and Storage Shed	1967	Not Eligible	
F-014	001-0027-0208	Empty Drum Storage Facility	1974	Not Eligible	
F-017	001-0027-0210	Auto Parts Storage Facility	1966	Not Eligible	
F-019	001-0027-0211	Supply Warehouse	1974	Not Eligible	

WFF No.	DHR ID	Property Name	Date of Construction	Current Eligibility Recommendation	Photographs
F-224	001-0027-0249	Flagpole Array	1965	Not Eligible	
J-010	001-0027-0214	ADAS Boresight Facility	1974	Not Eligible	
M-018	001-0027-0248	Rocket Vehicle Shelter	1963	Not Eligible	
M-019	001-0027-0215	Heating Plant Building	1967	Not Eligible	

WFF No.	DHR ID	Property Name	Date of Construction	Current Eligibility Recommendation	Photographs
M-020	001-0027-0216	Large Rocket Storage Building #3	1968	Not Eligible	
M-021	001-0027-0217	Heating Plant Building	1968	Not Eligible	
M-023	001-0027-0218	Telephone Cable Hut	1969	Not Eligible	
M-024	001-0027-0219	Rocket Loading Platform and Roadway	1971	Not Eligible	

WFF No.	DHR ID	Property Name	Date of Construction	Current Eligibility Recommendation	Photographs
N-117	001-0027-0220	Telecommunications Storage Building	1973	Not Eligible	
N-157	001-0027-0221	Plant Maintenance Shop	1974	Not Eligible	
N-158A	001-0027-0222	Antenna and Pedestal Tower #1	1971	Not Eligible	
N-158B	001-0027-0223	Antenna and Pedestal Tower #2	1971	Not Eligible	

WFF No.	DHR ID	Property Name	Date of Construction	Current Eligibility Recommendation	Photographs
N-159F	001-0027-0233	Material Storage Building	1974	Not Eligible	
N-164A	001-0027-0225	HF Receiver Antenna	1968	Not Eligible	
N-169	001-0027-0226	Telemetry Transmission Building	1967	Not Eligible	
N-174A	001-0027-0227	Telemetry Electrical Equipment Shelter	1968	Not Eligible	

WFF No.	DHR ID	Property Name	Date of Construction	Current Eligibility Recommendation	Photographs
N-177	001-0027-0228	Adas Pumps and Oil Storage Building	1969	Not Eligible	
N-180	001-0027-0229	Flammable Material Storage Cubical	1969	Not Eligible	
S-0158	001-0027-0247	ETL Thermal Vacuum Test Chamber	1971	Not Eligible	
U-060A	001-0027-0230	Boresight Equipment Shelter	1968	Not Eligible	

WFF No.	DHR ID	Property Name	Date of Construction	Current Eligibility Recommendation	Photographs
W-032	001-0027-0234	Utility Building	1969	Not Eligible	
W-049	001-0027-0235	Terminal Cubical Building	1967	Not Eligible	
W-052	001-0027-0236	Electrical Equipment Shed	1967	Not Eligible	
W-071	001-0027-0237	Sewage Ejection Station Building	1967	Not Eligible	

WFF No.	DHR ID	Property Name	Date of Construction	Current Eligibility Recommendation	Photographs
X-007	001-0027-0238	RADAR Electrical Equipment Shelter	1974	Not Eligible	
X-036	001-0027-0239	Storage Shed	1967	Not Eligible	
X-057	001-0027-0240	Sewage Ejection Station Building	1967	Not Eligible	
X-086	001-0027-0241	Meteorological Instrument Lab	1972	Not Eligible	

WFF No.	DHR ID	Property Name	Date of Construction	Current Eligibility Recommendation	Photographs
X-140	001-0027-0242	Pomp Materials Storage Building	1970	Not Eligible	
Y-035A	001-0027-0251	HAD Launcher Pad	1970	Not Eligible	
Y-035B	001-0027-0243	Assy & C/O Environmental Shelter	1969	Not Eligible	
Y-061	001-0027-0244	Sewage Ejection Station Building	1967	Not Eligible	

WFF No.	DHR ID	Property Name	Date of Construction	Current Eligibility Recommendation	Photographs
Z-041	001-0027-0245	Multi-Function RADAR Facility	1969	Not Eligible	
Z-052	001-0027-0246	Sewage Ejection Station Building	1967	Not Eligible	
Z-070A	001-0027-0252	Launch Pad No. 1 and Apronway	1970	Not Eligible	

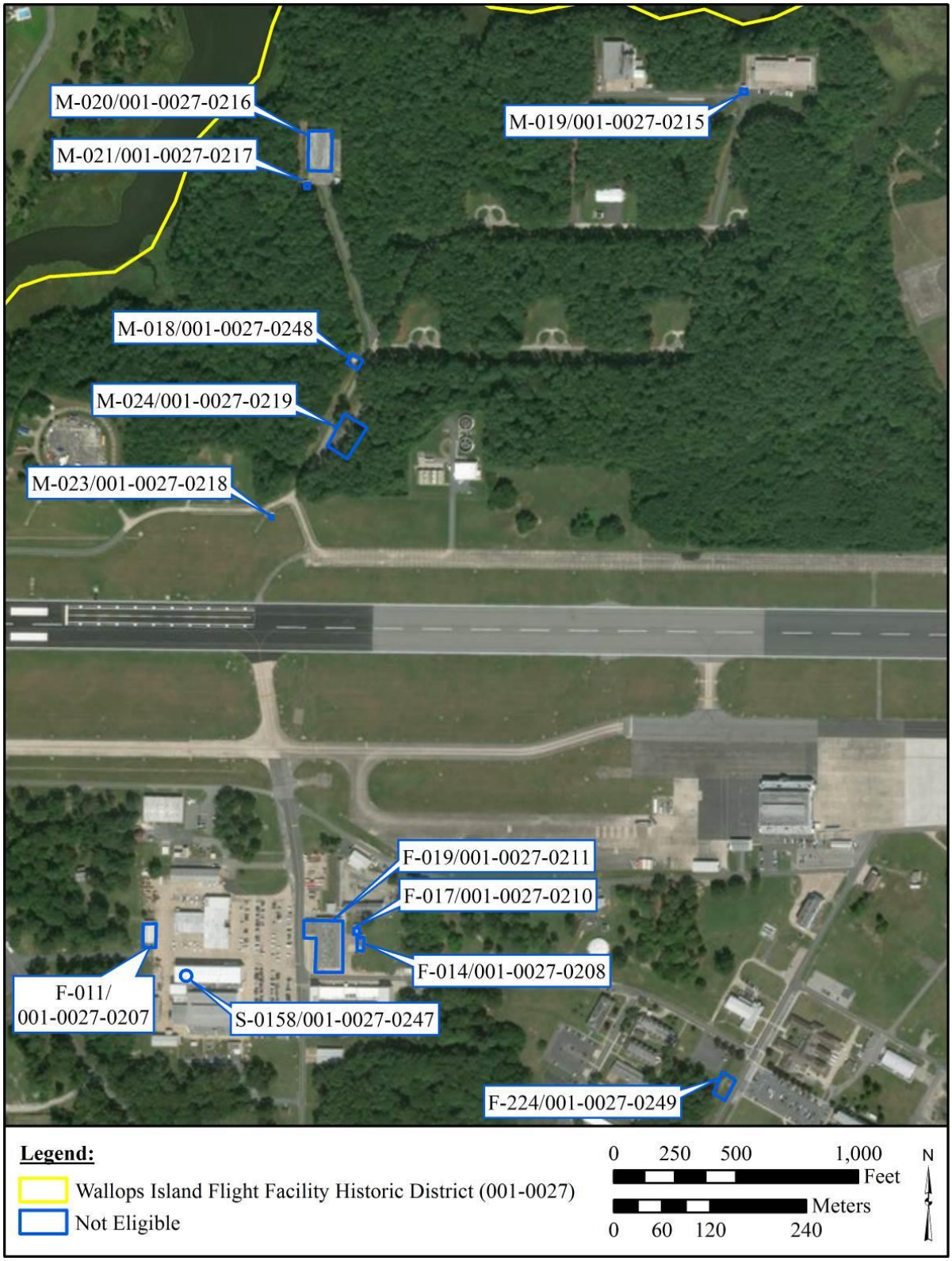


Figure 5: Newly Recorded Resources Within WFF Dating to the Wallops Station's New Direction: Space and Science Research Period, Map 1 of 6 (Esri 2017b).

Figure 6: Newly Recorded Resources Within WFF Dating to the Wallops Station's New Direction: Space and Science Research Period, Map 2 of 6 (Esri 2017b).

Figure 7: Newly Recorded Resources Within WFF Dating to the Wallops Station's New Direction: Space and Science Research Period, Map 3 of 6 (Esri 2017b).

Figure 8: Newly Recorded Resources Within WFF Dating to the Wallops Station's New Direction: Space and Science Research Period, Map 4 of 6 (Esri 2017b).

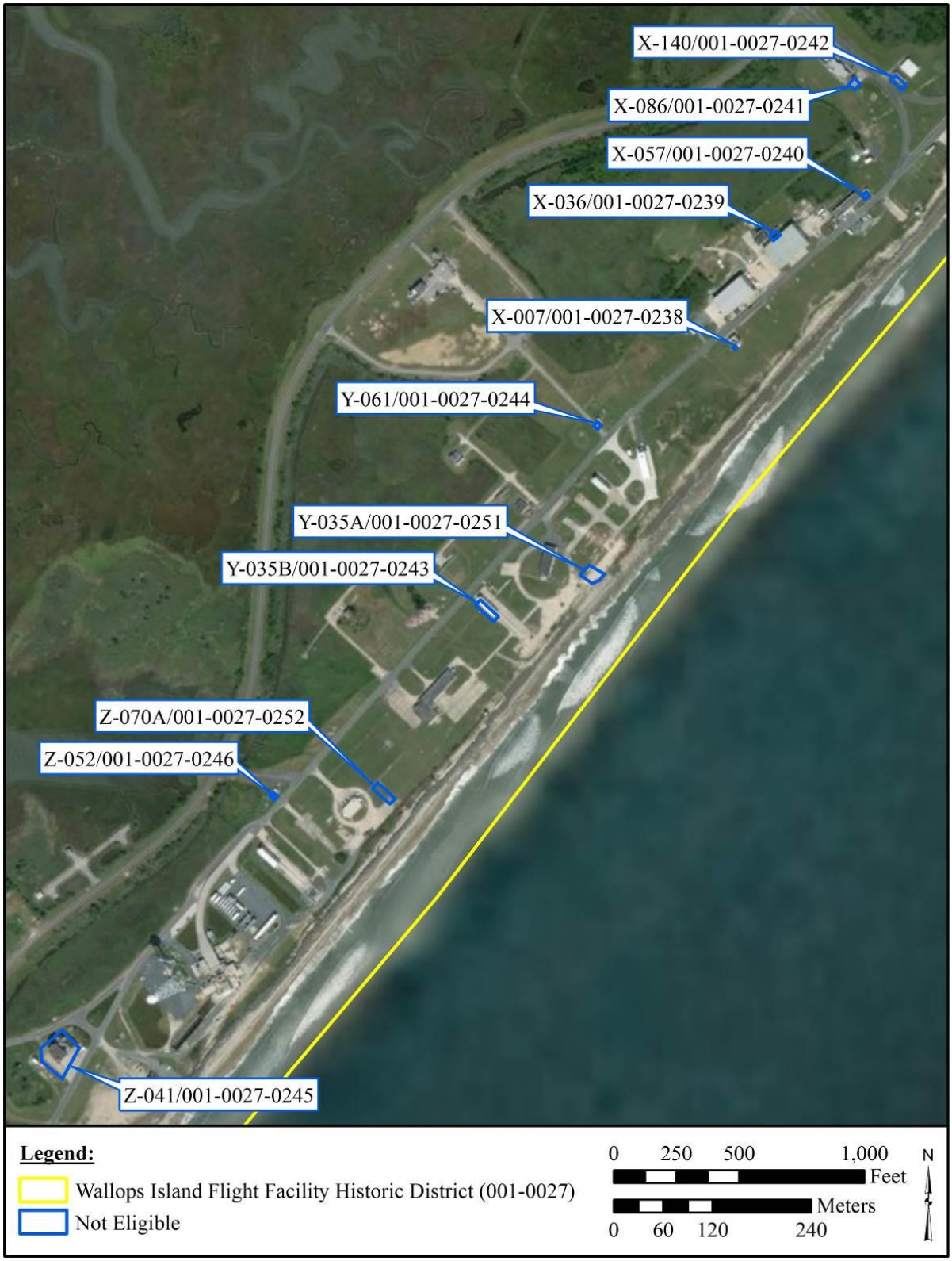


Figure 9: Newly Recorded Resources Within WFF Dating to the Wallops Station's New Direction: Space and Science Research Period, Map 5 of 6 (Esri 2017b).

Figure 10: Newly Recorded Resources Within WFF Dating to the Wallops Station's New Direction: Space and Science Research Period, Map 6 of 6 (Esri 2017b).

As individual buildings and structures, none of these 42 resources from the Wallops Station's New Direction: Space Science Research, 1961–1974 period of construction are known to have important associations with any significant individuals, events, or historic trends at the national, state, or local level sufficient to merit NRHP listing under Criteria A or B.

Although overall utilitarian in design, the Modernist-style influence can be seen in several buildings constructed during this period. On a whole, they feature very few, if any, ornamentation or decorative detailing. The surveyed resources from this period are not known to be the work of a master nor are they outstanding examples of a particular building type. Therefore, these 42 architectural resources are also recommended not eligible under NRHP Criterion C. Furthermore, 28 of the 42 resources were constructed less than 50 years ago and have not reached the age requirement for the NRHP. These 28 buildings and structures have not achieved exceptional significance since they were constructed. As such, they do not qualify for inclusion in the NRHP under Criteria Consideration G as architectural resources, and these 42 buildings and structures were not evaluated under Criterion D.

In sum, these 42 resources that date to the Wallops Station's New Direction: Space Science Research period are **recommended not eligible for listing in the NRHP under Criteria A–C and, where applicable, Criteria Consideration G.** Although the 28 resources do not meet the qualifications for Criteria Consideration G at this time, Dovetail **recommends that their individual eligibility be reevaluated when they reach 50 years of age.**

Wallops Flight Center, 1974–1981

In the 2011 report produced by TEC, Inc., they identified the Wallops Flight Center period, which spans from 1974 to 1981. Because this period starts in 1974, the same year that the Wallops Station's New Direction: Space Science Research period ends, there is an overlap of resources constructed in 1974 (Thursby and Martin 2011:2-11–2-12). For the purposes of this report, resources constructed in 1974 were discussed in the previous section only and the current section summarizes those constructed between 1975 and 1981. As such, of the 51 newly recorded resources identified during the current survey, nine of those were constructed during the Wallops Flight Center period (Table 4, p. 65; Figure 11–Figure 12, pp. 67–68)

According to the 2011 survey report:

> In 1974, NASA changed the name of its Wallops facility to Wallops Flight Center [renamed Wallops Flight Facility in 1981], reflecting its new foray into runway surface and aircraft noise reduction research, while continuing its role as a launch site for orbital and suborbital flights (a flight in which a spacecraft follows a trajectory of less than one orbit). In fact the mission of Wallops Flight Center expanded in the 1970s to included management of suborbital projects. Additionally, the facility also added earth studies of ocean processes to its research program (Thursby and Martin 2-12).

Of the nine resources that date to this construction period, six are one-story, metal-clad buildings. They are covered by either a gabled or shed roof and have a variety of single-leaf

and metal vehicular doors. Windows are limited on these utilitarian buildings; however, there are a few examples of fixed, metal-framed windows. Because they were recently constructed, on a whole these buildings have not undergone massing alterations or additions. Another resource, WFF No. Y-015A (001-0027-0250), is a concrete foundation that once supported a fuel tank. The remaining two resources comprise a dome antenna (WFF No. E-106C [001-0027-0205]) and a power stand (WFF No. N-160 [001-0027-0224]).

As individual buildings and structures, none of these nine resources from the Wallops Flight Facility period of construction at WFF are known to have important associations with any significant individuals, events, or historic trends at the national, state, or local level sufficient to merit NRHP listing under Criteria A or B.

Because of their specific function and recent construction date, many of these resources have undergone few changes to their workmanship, design, and materials. As individual properties, these utilitarian buildings and structures do not embody distinctive characteristics of a type, period, or method of construction nor do they possess high artistic value. Furthermore, they are not known to be the work of a master. Therefore, these nine architectural resources are also recommended not eligible under NRHP Criterion C. In addition, they were constructed less than 50 years ago and have not reached the age requirement for the NRHP. These nine buildings and structures have not achieved exceptional significance since they were constructed and as such, they do not qualify for inclusion in the NRHP under Criteria Consideration G. As architectural resources, these nine buildings and structures were not evaluated under Criterion D.

In sum, these nine resources that date to the Wallops Flight Facility period are **recommended not eligible for listing in the NRHP under Criteria A–C and Criteria Consideration G.** Although these nine resources do not meet the qualifications for Criteria Consideration G at this time, Dovetail **recommends that their individual eligibility be reevaluated when they reach 50 years of age.**

Table 4: Newly Recorded Resources Constructed During the Wallops Flight Facility Period, Organized by WFF Property Number.

WFF No.	DHR ID	Property Name	Date of Construction	Current Eligibility Recommendation	Photographs
D-0002	001-0027-0204	Supply Equipment Building	1976	Not Eligible	
E-106C	001-0027-0205	Dome Antenna	1980	Not Eligible	
F-016	001-0027-0209	Shops Building	1981	Not Eligible	
F-022	001-0027-0212	PLT O&M Shops Storage	1975	Not Eligible	
F-025	001-0027-0213	Auxiliary Equipment Storage	1977	Not Eligible	

WFF No.	DHR ID	Property Name	Date of Construction	Current Eligibility Recommendation	Photographs
N-160	001-0027-0224	Power Stand	1978	Not Eligible	
U-071	001-0027-0231	Compress Dehydrator Building	1977	Not Eligible	
W-022	001-0027-0232	Range GD Support Equipment Building	1978	Not Eligible	
Y-015A	001-0027-0250	A/G Fuel Storage Tank	1978	Not Eligible	

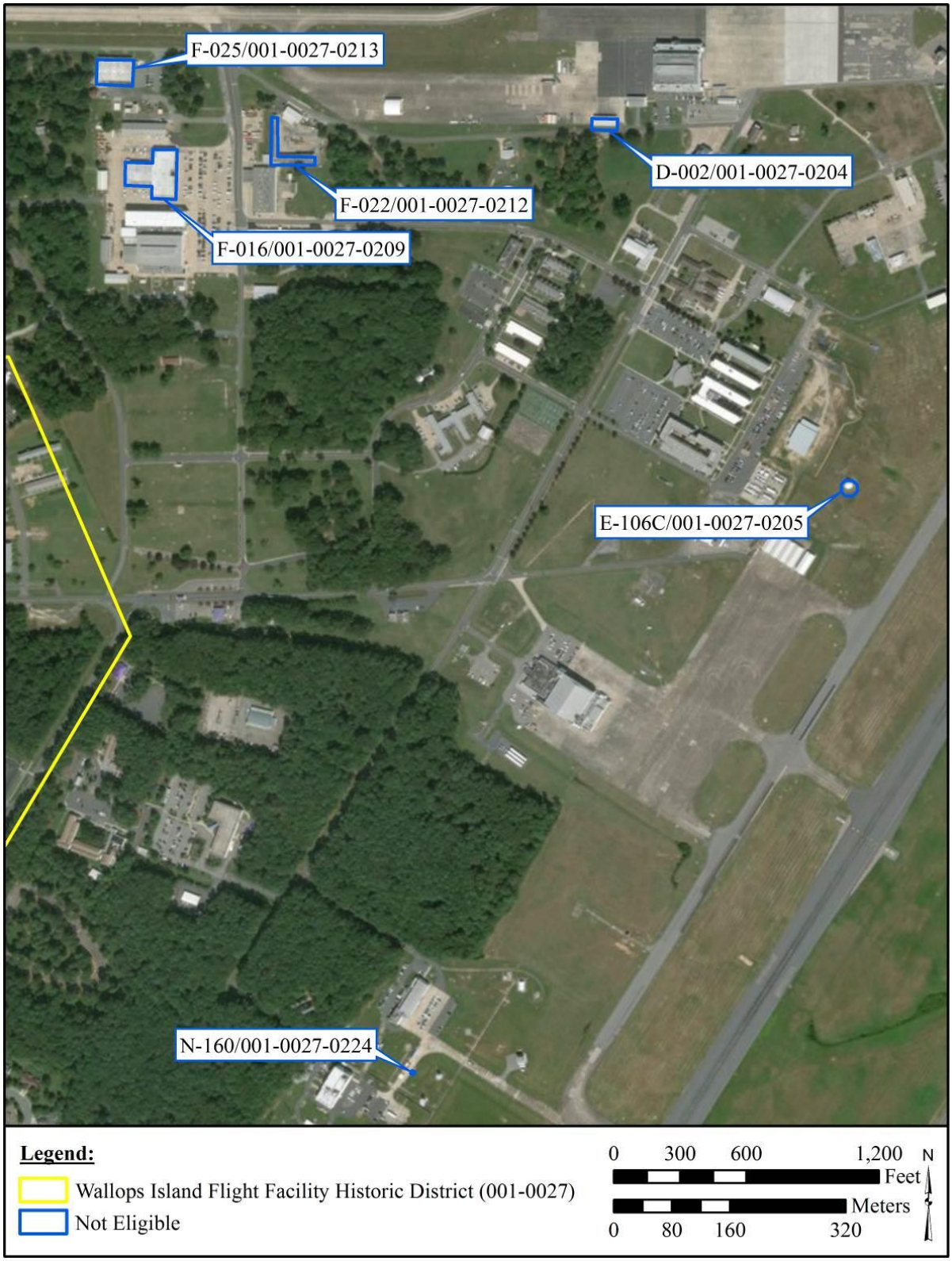


Figure 11: Newly Recorded Resources within WFF Dating to the Wallops Flight Facility Period, Map 1 of 2 (Esri 2017b).

Figure 12: Newly Recorded Resources within WFF Dating to the Wallops Flight Facility Period, Map 2 of 2 (Esri 2017b).

SUMMARY

In conclusion, Dovetail documented and evaluated 52 resources within WFF, one of which was previously recorded and the remaining 51 resources were newly recorded as part of the current survey (Table 5). Dovetail **recommends that the previously recorded resource (001-0027) remains not eligible for listing in the NRHP and the remaining 51 resources surveyed during this effort are recommended not eligible for individual listing in the NRHP under Criteria A–C**. In addition, 37 of the total 52 resources have not yet reached the 50-year age threshold for the NRHP. Dovetail also **recommends that these 37 resources do not qualify for inclusion in the NRHP under Criteria Consideration G.** Although these 37 resources do not meet the qualifications for Criteria Consideration G at this time, Dovetail **recommends that their individual eligibility be reevaluated when they reach 50 years of age.**

Table 5: Summary of Surveyed and Evaluated Architectural Resources Within WFF, Organized by WFF Property No.

WFF No.	VCRIS Number	Property No/Name	Date of Construction	Eligibility Recommendation
A-038	001-0027-0202	Liquid Oxygen Storage Facility	1967	Not Eligible
A-044	001-0027-0203	AN/FPS-16(V) RADAR Antenna	1971	Not Eligible
D-002	001-0027-0204	Supply Equipment Building	1976	Not Eligible
E-106C	001-0027-0205	Dome Antenna	1980	Not Eligible
E-135	001-0027-0206	Verlort RADAR Pedestal	1968	Not Eligible
F-011	001-0027-0207	Mobile Generator Testing and Storage Shed	1967	Not Eligible
F-014	001-0027-0208	Empty Drum Storage Facility	1974	Not Eligible
F-016	001-0027-0209	Shops Building	1981	Not Eligible
F-017	001-0027-0210	Auto Parts Storage Facility	1966	Not Eligible
F-019	001-0027-0211	Supply Warehouse	1974	Not Eligible
F-022	001-0027-0212	PLT O&M Shops Storage	1975	Not Eligible
F-025	001-0027-0213	Auxiliary Equipment Storage	1977	Not Eligible
F-224	001-0027-0249	Flagpole Array	1965	Not Eligible
J-010	001-0027-0214	ADAS Boresight Facility	1974	Not Eligible

WFF No.	VCRIS Number	Property No/Name	Date of Construction	Eligibility Recommendation
M-018	001-0027-0248	Rocket Vehicle Shelter	1963	Not Eligible
M-019	001-0027-0215	Heating Plant Building	1967	Not Eligible
M-020	001-0027-0216	Large Rocket Storage Building #3	1968	Not Eligible
M-021	001-0027-0217	Heating Plant Building	1968	Not Eligible
M-023	001-0027-0218	Telephone Cable Hut	1969	Not Eligible
M-024	001-0027-0219	Rocket Loading Platform and Roadway	1971	Not Eligible
N-117	001-0027-0220	Telecommunications Storage Building	1973	Not Eligible
N-157	001-0027-0221	Plant Maintenance Shop	1974	Not Eligible
N-158A	001-0027-0222	Antenna and Pedestal Tower #1	1971	Not Eligible
N-158B	001-0027-0223	Antenna and Pedestal Tower #2	1971	Not Eligible
N-159F	001-0027-0233	Material Storage Building	1974	Not Eligible
N-160	001-0027-0224	Power Stand	1978	Not Eligible
N-164A	001-0027-0225	HF Receiver Antenna	1968	Not Eligible
N-169	001-0027-0226	Telemetry Transmission Building	1967	Not Eligible
N-174A	001-0027-0227	Telemetry Electrical Equipment Shelter	1968	Not Eligible
N-177	001-0027-0228	Adas Pumps and Oil Storage Building	1969	Not Eligible
N-180	001-0027-0229	Flammable Material Storage Cubical	1969	Not Eligible
S-0158	001-0027-0247	ETL Thermal Vacuum Test Chamber	1971	Not Eligible
U-060A	001-0027-0230	Boresight Equipment Shelter	1968	Not Eligible
U-071	001-0027-0231	Compress Dehydrator Building	1977	Not Eligible
W-022	001-0027-0232	Range GD Support Equipment Building	1978	Not Eligible
W-032	001-0027-0234	Utility Building	1969	Not Eligible
W-049	001-0027-0235	Terminal Cubical Building	1967	Not Eligible
W-052	001-0027-0236	Electrical Equipment Shed	1967	Not Eligible

WFF No.	VCRIS Number	Property No/Name	Date of Construction	Eligibility Recommendation
W-071	001-0027-0237	Sewage Ejection Station Building	1967	Not Eligible
X-007	001-0027-0238	RADAR Electrical Equipment Shelter	1974	Not Eligible
X-036	001-0027-0239	Storage Shed	1967	Not Eligible
X-057	001-0027-0240	Sewage Ejection Station Building	1967	Not Eligible
X-086	001-0027-0241	Meteorological Instrument Lab	1972	Not Eligible
X-140	001-0027-0242	Pomp Materials Storage Building	1970	Not Eligible
Y-015A	001-0027-0250	A/G Fuel Storage Tank	1978	Not Eligible
Y-035A	001-0027-0251	HAD Launcher Pad	1970	Not Eligible
Y-035B	001-0027-0243	Assy & C/O Environmental Shelter	1969	Not Eligible
Y-061	001-0027-0244	Sewage Ejection Station Building	1967	Not Eligible
Z-041	001-0027-0245	Multi-Function RADAR Facility	1969	Not Eligible
Z-052	001-0027-0246	Sewage Ejection Station Building	1967	Not Eligible
Z-070A	001-0027-0252	Launch Pad No. 1 and Apronway	1970	Not Eligible
N/A	001-0027	Wallops Island Flight Facility Historic District	1945	Remains Not Eligible

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APPENDIX A: LIST OF NRHP CRITERIA CONSIDERATIONS

These Criteria Considerations are based on those laid out in NPS guidelines (Shrimpton et al. 1990).

Criteria Consideration	Description
Criteria Consideration A: Religious Properties	A religious property deriving primary significance from architectural or artistic distinction or historical importance
Criteria Consideration B: Moved Properties	A building or structure removed from its original location but which is primarily significant for architectural value, or which is the surviving structure most importantly associated with a historic person or event
Criteria Consideration C: Birthplaces or Graves	A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building associated with his or her productive life
Criteria Consideration D: Cemeteries	A cemetery that derives its primary importance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events
Criteria Consideration E: Reconstructed Properties	A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived
Criteria Consideration F: Commemorative Properties	A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance
Criteria Consideration G: Properties that have Achieved Significance Within the Last 50 Years	A property achieving significance within the past 50 years if it is of exceptional importance

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APPENDIX B: EMAIL COMMUNICATION WITH DHR ABOUT “S” AND “I” RESOURCES

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DOVETAIL
CULTURAL RESOURCE GROUP

Heather Staton <hstaton@dovetailcrg.com>

Survey of Goddard Space Flight Center's Wallops Flight Facility

Heather Staton <hstaton@dovetailcrg.com> Mon, Oct 23, 2017 at 7:15 PM
To: Laura.lavernia@dhr.virginia.gov

Hi Laura

I hope you are well!

Dovetail has been brought on by Goddard Space Flight Center's Wallops Flight Facility in Accomack County to update their architectural property survey to record buildings constructed between 1966 and 1981. This current survey builds on previous studies conducted in 2004 and 2011, which included resources built before 1966. All of the previous studies have been coordinated with the DHR, and this current study will be submitted to your office as well.

I have a quick question regarding the types of resources that you all would like to review. During the 2004 and 2011 surveys, the consultants focused on buildings, structures, substantial objects, and potential historic districts. They did not record any secondary objects, such as lighting, paved ramps, electric cables, drainage and storm sewer systems, roadways, thermal vacuum test chambers, flag poles, and parking areas. The DHR approved this methodology at that time. We wanted to confirm with you that this same procedure is okay for our ongoing update? We will record all above-ground elements with the exception of these minimal secondary objects (noted as "S" and "I" on the Wallops Maintenance Schedule, a copy of which is attached to this email).

If you have any questions on the current study or this question, feel free to ask! I can be reached at 540-899-9170 (although this week I am in the field, feel free to call my cell at 434-981-2412) or hstaton@dovetailcrg.com.

Thank you for your help!

Heather

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Heather D. Staton | Architectural Historian
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DOVETAIL
CULTURAL RESOURCE GROUP

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Heather Staton <hstaton@dovetailcrg.com>

Survey of Goddard Space Flight Center's Wallops Flight Facility

Lavernia, Laura (DHR) <Laura.Lavernia@dhr.virginia.gov> Tue, Oct 24, 2017 at 8:29 AM
To: Heather Staton <hstaton@dovetailcrg.com>

Good morning Heather,

I would add the thermal vacuum test chambers in the resources I would test for. The rest is OK with me for the current update. Thank you so much for asking.

Best,

Laura Lavernia - Project Review Architectural Historian
Review and Compliance Division
Department of Historic Resources
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Heather Staton <hstaton@dovetailcrg.com>

Survey of Goddard Space Flight Center's Wallops Flight Facility

Lavernia, Laura (DHR) <Laura.Lavernia@dhr.virginia.gov> Tue, Oct 24, 2017 at 8:33 AM
To: Heather Staton <hstaton@dovetailcrg.com>

I took a second look at the list, I would also potentially record the outdoor signs if they are of artistic value or display a specific graphic design of the period.

Please excuse this follow-up email.

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