

Wright Brothers National Memorial

Kill Devil Hills, North Carolina

DRAFT

General Management Plan

July 1996



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DRAFT GENERAL MANAGEMENT PLAN

Wright Brothers National Memorial

Kill Devil Hills, North Carolina

July 1996

National Park Service
Atlantic Coast System Support Office
75 Spring Street SW, Atlanta, GA 30303

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Wright Brothers National Memorial
INTRODUCTION



INTRODUCTION

The year 2003 marks the 100th anniversary of the Wright brothers triumph at Kitty Hawk. The National Park Service anticipates international attention focusing on December 17, 2003, and the months leading up to that significant date. Already State commissions have been established in North Carolina and Ohio to address the 100th anniversary. Legislation to establish a Federal commission may be introduced in the 104th Congress. This General Management Plan will form the foundation for actions to take place in anticipation of the 100-year celebration.

Planning for the 50th anniversary began only two to three years before 1953; the results were disappointing. Beginning the planning process now and placing a high priority on it will assist the National Park Service to prepare the memorial for an event of international proportions. In 2003 the eyes of the world will focus on the 431-acre site in Kill Devil Hills.

This site, and the other 368 units in the National Park System, represent the finest and most significant elements of this Nation's heritage and serve as legacies to future generations. The steps proposed by this plan will ensure that the resources contained within the memorial will be protected and treasured in perpetuity and that national and international visitors will enjoy and benefit from their experience.

Located at Kill Devil Hills on the Outer Banks of North Carolina, the Kill Devil Hill Monument was established by the Act of March 2, 1927. The Executive Order of March 3, 1933, transferred administrative responsibility of the monument to the National Park Service. The site was established to commemorate the first successful human attempt at heavier-than-air, controlled, powered flight. The existing 431-acre land base stabilizes the dunes existing during the Wright brothers flight experiments at the turn of the century. The Secretarial Order of December 1, 1953, redesignated the area and monument as Wright Brothers National Memorial.

Wilbur and Orville Wright selected the Outer Banks of North Carolina as the site for their successful experiments because it provided vast expanses of soft sand for landings as well as steady winds. Also, on the isolated Outer Banks the Wrights could conduct their flight experiments under secrecy. In 1900 they camped near Kill Devil Hills and used the small dunes in the nearby area to make numerous glider flights. After analyzing their data and conducting additional experiments during the winter in Dayton, Ohio, the brothers returned to Kill Devil Hills in the fall of 1902 and launched nearly 1,000 glider flights from the hills. During this period of experimentation they perfected their control system and wing shape. They set world records for flight distance, time, angle of descent, and for a flight in high wind conditions. The 1902-Glider was patented. They then designed the world's first flying machine incorporating a gasoline engine and propellers. On December 17, 1903, near the base of Kill Devil Hill, the first successful, powered, heavier-than-air, controlled flight occurred.

Topics of Significance

The National Park Service has identified significant topics relating to natural and cultural resources that help determine the national significance of any unit in the National Park System. These topics are listed in outline as they appear in the *History and Prehistory in the National Park System and the National Historic Landmarks Program* (National Park Service 1987). The National Park Service has identified the following topics that are relevant to Wright Brothers National Memorial and that further attest to the national significance of the site.

- XVII. Technology (Engineering and Invention)
 - B. Transportation

PURPOSE AND NEED FOR THE PLAN

Public Law 95-625 (92 Stat. 3467) directs the Director of the National Park Service to prepare and revise in a timely manner a general management plan for the preservation and use of each unit of the National Park System. A general management plan sets forth the basic management philosophy for a park and provides strategies for addressing issues and achieving management objectives over a 5 to 10-year period. Two types of strategies are presented in the general management plan: those required to manage the park's resources and those required to provide for visitor use and interpretation of the resources. Based on these strategies, programs, actions, and support facilities necessary for efficient park operation and visitor use are identified. In addition, plans must be consistent with National Park Service Management Policies; be in compliance with legislative and executive requirements; reflect resource limitations, visitor safety considerations, and budgetary constraints; and recognize the concern expressed by the public and other agencies during planning efforts.

MANAGEMENT OBJECTIVES

Based upon the authorizing legislation, management objectives have been developed that provide direction for the overall administration of the park and guide the preparation of the general management plan. Congressional debate and hearings on the bill that resulted in the Act of March 2, 1927, established parameters for formulating the management objectives. The Executive Order of March 3, 1933, and the Secretarial Order of December 1, 1953, further defined those parameters. The management objectives identify four primary areas of concern: visitor experience, resource management, interpretation, and commemorative events.

Visitor Experience:

To provide a setting that helps the visitor to experience a sense of time and place which existed on December 17, 1903, and to realize the magnitude of the Wright brothers' achievements.

Resource Management:

To preserve, protect, and manage the cultural resources including artifacts and memorials associated with the achievements of the Wright brothers to inspire this and future generations.

Interpretation:

To interpret the events leading to the first controlled powered flight and its impact on the history of mankind.

To demonstrate the fundamental aerodynamic principles discovered in the Wright brothers' experiments which lead to man's conquest of the air.

To promote visitor appreciation and understanding of the two men responsible for this achievement.

Commemorative Events:

To foster and promote through partnership opportunities special activities at the site which commemorated the achievements of the Wright brothers in powered flight.

Issues

Based upon the management objectives, the following issues have been raised which will be addressed in the General Management Plan:

The National Park Service has received requests from local governments and others to use Wright Brothers National Memorial for purposes not usually associated with the site.

As available public open space in the Kill Devil Hills area shrinks, can the site accommodate these types of requests?

Incoming and exiting traffic often becomes congested during the ten weeks of heaviest visitation and during commemorative events. Making a left turn into the site from U.S. 158 is extremely difficult. Proposals have been discussed to widen U.S. 158 to seven lanes or perhaps construct a median limiting access. What steps can be taken to improve access into and out of the site? Should the visitor entrance and exit remain off U.S. 158 or is there a more suitable location?

Visitation to the site has grown in rough proportion to the growth along the Outer Banks. The carrying capacity of the site's facilities are consistently exceeded during the summer months. The site is regarded as a major visitor attraction in the area. Based upon development projections by local and State agencies, the Outer Banks will continue to grow consistently and dramatically over the next several years. Major highways leading to the Outer Banks will be widened to four lanes and bridge capacity expanded. Should the facilities of the site accommodate the anticipated growth in visitation? What changes will be needed to accommodate major increases in visitation?

Given the anticipated steady increases in visitation to the Outer Banks and the memorial, what steps can be taken to ensure a quality visitor experience? During many days during the peak use season the facilities at the visitor center are overcrowded thus diminishing the visitor's ability to enjoy fully the exhibits and the flight room talk in relative comfort. Should a limit be placed on the number of visitors entering the site? Can a carry capacity be determined to ensure a quality visitor experience? Because the flight room talk sets the stage for the visitor's understanding of the Wright brothers, what can be done to maximize this program?

During the busiest months fee collection occurs at a kiosk before visitors exit the memorial onto U.S. 158. Visitors pay at the information/collection desk in the visitor center during the rest of the year. Often these means of collection cause great confusion. How can fee collection be improved?

The year 2003 marks the 100-year anniversary of powered, controlled flight by the Wright brothers. The States of North Carolina and Ohio have legislated commissions to address this event. Federal legislation may also be passed to complement the efforts of the states. What steps can be taken to prepare the site for this major international event and to carry the message of the Wright brothers into the 21st Century?

Interpretive displays and exhibits were fabricated 25 years ago and represent the technology of a bygone era. The Wright brothers, themselves, were always looking to the future and solving problems with the latest technological and engineering advances. What can be done to take advantage of the latest and future advances in technology to bring the story alive at Wright Brothers National Memorial?

During times of normal summer visitation, the site's visitor center does not work efficiently. The exhibit room is overcrowded as is the flight talk auditorium. Doors continuously open and close rendering the air conditioning system inadequate. Giant fans used to augment air circulation interfere with visitors enjoying the flight auditorium talk. Visitor flow and circulation throughout the facility is crowded and uncoordinated. Sales at the Eastern National Park and Monument Association outlet have blossomed, but the space is inadequate to display a full-range of materials. Office space is crowded. In short, the visitor center does not work. What steps can be taken to address the shortcomings of the visitor center?

Structural difficulties have plagued the pylon for several years. Some maintenance and stabilization have been performed, but electrical and water seepage problems persist. What can be done to restore the pylon to its grandeur?

When established in 1928, the site was located in an isolated area of the State of North Carolina. The Outer Banks population was sparse and access to the barrier islands difficult. Today, like many of the units of the National Park System, development encircles the site. To an extent, trees and other vegetation screen most of the site from development and provide a barrier to the continuous salt spray from the ocean. How should the site vegetation be managed? What steps can be taken to ameliorate the effects of surrounding development on the visitor's experience and the site's resources? How can the park work with agencies to meet its legislative mandate while moving into the 21st Century?

The National Park Service owns 15.69 acres along U.S. 158 across the entrance to the park. The National Park Service acquired this area to preserve an unobscured view to the ocean and to create a sense of openness for visitors. In light of the real estate development in Kill Devil Hills over the past 25 years, can the 15.69 acres still protect these park values?

The Cape Hatteras Group superintendent formerly lived in a 1930s residence on the south boundary of the site. It is no longer occupied and has some serious structural problems. Is there a use for this structure that would justify repairs? Does it have historic significance? Should this structure be allowed to stand?

The First Flight Airstrip services the site's concession operation and general aviation. It also allows the visitor to have a brief view of landings and takeoffs while learning about the accomplishments of the Wright brothers. Is the airstrip adequate to serve its current and future aviation load? How can the visitor's

observation of takeoffs and landings be enhanced?

During the 10-week heavy visitation season, the parking lots overflow and vehicles park off the road and on the grass around the pylon. Also, there is no formal drop-off location near the visitor center. This causes some vehicle congestion (particularly during inclement weather). Should the present parking configuration be redesigned to accommodate expected increases in visitation? Should additional parking facilities be provided?

Park-employees' housing does not meet the standards of modern energy-efficient facilities designed for the Outer Banks. What measures can be taken to replace or upgrade housing at the site?

The First Flight Society plays an important role in planning the commemorative events at the site. What should be the relationship between the National Park Service and this important partner as the year 2003 draws nearer? Should the First Flight Society increase its role? What other partners (beside the commissions) will be important to forge ties with over the next ten years?

Given the nature of the memorial landscape and the park's adjacent land use, how can the visitor experience the sense of time and place that existed on December 17, 1903?

Public Law 102-419 established the Dayton Aviation Heritage National Historical Park, which consists of land and structures associated with the Wright brothers and the early development of aviation. What will be the relationship between the memorial and the Dayton site? What steps can be taken to ensure that the interpretive stories, related at the two sites, complement each other?

The maintenance facility is poorly designed and does not meet present needs for work space and storage. The staff performs its functions well given the limitations of the

structure. What steps can be taken to improve the maintenance area? Does its location on the memorial site distract from the visitor experience?

Visitation at the memorial and the Outer Banks has broadened into the spring and fall. Efforts are underway by the Dare County Tourist Bureau to promote visitation during the shoulder seasons. This may increase the demand for services of a relatively small staff. Can less labor intensive design features be incorporated into the park's overall plan that would compensate for significant increases in visitation?

The Outer Banks experiences some extreme weather conditions, particularly high winds and flooding associated with hurricanes. Facilities accommodating museum collections and book storage must be designed to incorporate safeguards from weather emergencies. What steps can be taken to ensure these safeguards?

What is the desirable way for the visitor to enter the park? Does the present entrance afford the visitor the experience of the majesty and grandeur of the first flight as memorialized by the pylon?

Control of visitor movement into and around the park is a key factor to a successful operation. How can circulation be managed to enhance the visitor's experience while providing maximum protection of the memorial's resources?

LOCATION AND DESCRIPTION OF THE RESOURCE

Wright Brothers National Memorial, listed on the National Register of Historic Places in 1972, is located in Kill Devil Hills, Dare County, on the Outer Banks of North Carolina (Figure 1). The topography of the memorial varies in

elevation from six to 90 feet. When Wilbur and Orville Wright visited the area during the period 1900 to 1911 to conduct experiments which led first to improved non-powered flight and ultimately to the first successful powered flights, they saw sparsely vegetated sand flats and various-sized, naturally formed sand dunes.

Since then the sand and dunes have been stabilized with grass, shrubs and trees; the memorial pylon and other developments are reasonably secure, even though the dunes are no longer being replenished by sand from the beach. Without the stability provided by the vegetation, wind would continually change the configuration of the surface, and it would be impossible to maintain the memorial unimpaired for future generations. In this instance, modifying the historic landscape is an acceptable trade-off for topographic stability.

The memorials' historic resources consist of the site where the Wright brothers conducted their experiments, a memorial pylon which was erected in 1932 in response to the Act of March 2, 1927, the commemorative design and system of trails and circular road, and a commemorative boulder (Figure 2). Kill Devil Hill is a 90-foot sand dune from which the Wrights conducted glider flights. The hill now supports the memorial pylon and a network of trails. West Hill is a 60-foot sand dune also used for glider flights by the Wrights. The windsock for the First Flight Airstrip is located on West Hill.

The takeoff point of the four powered flights made by the Wrights on December 17, 1903, is marked by a commemorative boulder of North Carolina granite. The boulder, dedicated in 1928, is located approximately 1,200 feet north-northeast of the base of Kill Devil Hill. Four smaller granite markers identify each of the landing sites. These markers were installed in November 1992 to replace small concrete pedestals that were previously used to mark the landings sites.

The pylon, located on Kill Devil Hill, is a 60-foot, triangular-shaped structure constructed of

concrete and Mount Airy granite. Bronze busts of Wilbur and Orville Wright were placed on each side of the steps leading up to the base of the pylon. The busts were stolen in 1986 but were recovered in 1989; replacement busts were cast and set in place at the pylon. The original busts are now kept in the museum collections storage facility at Fort Raleigh National Historic Site in Manteo, North Carolina.

The 1972 National Register of Historic Places listing included the pylon (Wright Brothers Monument) and the replicas of the hangar and quarters building (Figure 3). Additional pending national register documentation (1996) lists as contributing elements the commemorative boulder (First Flight Marker), the Wright Brothers Monument Powerhouse, the monument's curving trails and circular road, and the spatial relationship between the monument and the marker. Non-contributing elements include the hangar and quarters buildings, the visitor center, the memorial entrance gateway, the superintendent's quarters, the maintenance area, the First Flight Airstrip, the fee collection kiosk, the four stone landing markers, the metal information panel next to the hangar, the metal information panel between the monument and the marker, the two reproduction Wright bust sculptures at the monument, and the plaque next to the visitor center.

The Visitor Center was constructed in the 1960s and serves as the center of visitor and administrative activities. It contains: a joint National Park Service-Eastern National Park and Monument Association orientation, gift, and sales area; an exhibit area; the First Flight auditorium which houses a replica of the Wright Flyer and glider; administrative offices; and rest rooms. Various museum artifacts, which help tell the story of the Wright brothers' experiments, are displayed in enclosed cases in the Visitor Center or are stored in the museum collections facility at Fort Raleigh National Historic Site.

An asphalt road connects the Visitor Center and parking area to Kill Devil Hill. The portion of the road, which circles the hill, is part of the

uncompleted commemorative landscape constructed during the late 1920s and early 1930s. Around the hill there are five parking areas which accommodate over 100 vehicles. An interconnected series of trails winds about Kill Devil Hill up to the pylon. All but two of the trail segments are part of the 1930s' commemorative design. These other segments were added over informal trails blazed by frequent visitor use.

The park's maintenance complex and a house that served as the residence for the Cape Hatteras Group of parks' superintendent is located on the park's southern boundary, along Colington Road. Further northwest on Colington Road, park employees live in 1960s era trailers. Recently, a bicycle trail was constructed along the park's boundary to connect neighborhoods northwest of the park with First Flight Middle School located off Colington Drive on Veterans Drive. The National Park Service permitted the town of Kill Devil Hills to construct the trail.

The principal natural resources of the memorial consist of the vegetated sand dunes, the landscaped ground, and the pine forest that covers much of the western part of the memorial. A 1981-Grounds Management Plan recommended returning a portion of the memorial to a condition that more closely resembles the historic scene because shrubs and trees have gradually encroached on areas that were either bare or supported a scanty grass cover between 1900 and 1911. The National Park Service removes woody vegetation from Kill Devil Hill and other designated places within the memorial. The grasses on the west, north, and east faces of Kill Devil Hill, the first flight area, and around the Visitor Center are intensively maintained. Grasses are allowed to grow to seeding height to promote wildflower displays and reduce maintenance costs. The south face of Kill Devil Hill is too steep to maintain with mechanical equipment, so grass and brush removal has consisted of periodic cutting by hand. After each cutting, however, the regrowth of briars, shrubs, and small trees soon takes over that portion of Kill Devil Hill again. The summit of West Hill is

kept clear around the windsock, but the remainder of the dune is covered with woody shrubs and trees. In other designated areas within the memorial, the plan provides that woody vegetation will grow to provide natural screening. The remainder of the memorial, other than the developed areas, is being allowed to progress to a climax ecotype. Wildfires are quickly suppressed. The most commonly seen large animals are deer, grey fox, opossum, and raccoon.

Memorial land includes a 15.69-acre tract between the beach and U.S. 158 east of the main entrance. The National Park Service also acquired this parcel to provide space for an improved entrance and to provide a connection between the memorial and the Atlantic Ocean free of intrusions. At the time of acquisition visitors reached the memorial via the beach road (North Carolina 12) and through the 15.69-acre tract. In the mid-1960s the State of North Carolina constructed U.S. 158, currently a 5-lane unlimited access highway. It replaced North Carolina 12 as the primary route to the memorial. Average daily traffic counts exceed 70,000 vehicles on U.S. 58 during the height of the summer tourist season.

Most visitors who come to the memorial arrive by automobile or bus, although the number of touring motorcyclists and bicyclists is gradually increasing. Many private pilots view the memorial as a shrine, and it is not uncommon for aviators to fly hundreds or thousands of miles to have the privilege to land at the birthplace of aviation.

Visitation has fluctuated during the last ten years, but has averaged approximately 475,000 annually. In 1995, hurricanes and the U.S. Government shutdown caused an eight per cent reduction in visitation. Most visitors come during the months of June, July, and August (monthly average nearly 80,000 for the three months), but significant visitation occurs during the shoulder seasons of April, May, September, and October. School groups and organized tours have a major impact on the spring and fall visitation numbers. The promotional efforts of

the local chamber of commerce and tourist bureau have lured visitors to the Outer Banks during the shoulder seasons.

Virginia (the Tidewater Virginia metropolitan area population is within 100 miles of the memorial) and North Carolina supply the largest concentration of visitors to the Outer Banks. The recent opening of a second bridge over Currituck Sound and the widening of the roads in Virginia to the Virginia/North Carolina border have made travel from the north considerably easier. Maryland, Pennsylvania, Ohio, New Jersey, West Virginia, and New York follow in numbers of visitors. However, people from throughout the Nation and many foreign countries have signed the park's register.

During the peak use season, the Visitor Center's hours are 9:00 am to 5:00 pm; the gates close at 7:00 pm. The Visitor Center conducts various interpretive programs and demonstrations throughout the day. Most visitors spend approximately one-and-one-half-hours in the park, stopping at the Visitor Center to listen to the interpretive talks, viewing the exhibits, and shopping in the bookstore. About 80 per cent of the visitors walk to the quarters and hangar exhibits and the boulder that marks the takeoff location for the December 17, 1903-flights. About 40 per cent continue to Kill Devil Hill and the pylon. Others walk or drive to the First Flight Airstrip and purchase a ride in a concession-operated small plane. Many end their stay with a drive around Kill Devil Hill.

Because so many visitors to the memorial combine their visit with their stay on the Outer Banks, a curious daily visitation pattern has developed. Tuesday, Wednesday, and Thursday experience a third more visitors than the other four days during the peak use season. On rainy days, too, the parking area and the Visitor Center are packed. Generally, visitors arrive on the Outer Banks on Saturday, go to the beach on Sunday and Monday, and by Tuesday, Wednesday, and Thursday are ready to engage in non-beach or water-related activities. By Friday, most visitors feel compelled to return to the

beach before they return home on Saturday.

The Surrounding Environment

With 85 miles of Atlantic Ocean beach, it is not surprising that the majority of jobs in Dare County are in some way related to the tourism industry. The county's job base is very service-oriented. According to the 1990 Census, the year-round population of Dare County is nearly 23,000, with a seasonal population peak approaching 150,000. The summer months between Memorial Day and Labor Day constitute the traditional peak population period. However, more and more people are visiting the area during the shoulder seasons, between April 1 and Memorial Day and Labor Day and Thanksgiving Day.

The seasonal population steers the demand for and the cost of public services of the county, both in the delivery of services and the development of infrastructure. Because the county relies so heavily on designing public facilities and services to accommodate its seasonal population, it has generated revenue through an occupancy tax, a prepared meals tax, a retail sales tax, and a relatively "clean" local economy. The "Dare County Land Use Plan 1994 Update's" policies accept the reliance on tourism and its associated peak use seasonal population, as the foundation of the county's economic base.

Like Dare County, the town of Kill Devil Hills transforms into a residential resort community during the summer months. Its population swells tenfold during this period. However, recent trends indicate increased construction of lodgings, accommodations, and structures normally associated with a service industry. Nearly all the private land with development potential in the town was platted by 1992. Low-density commercial and residential developments adjoin the memorial on its eastern, western, and northern sides. A portion of the town's administrative complex and a middle school partially occupy the land located south of the memorial off Veterans Drive. The town has approved plans to enlarge the educational

complex by constructing a new high school.

Colington Road (S.R. 1217) forms a portion of the memorial's southern boundary and, at one time, served as the memorial's primary entrance. Today, Colington Road represents the county's second busiest thoroughfare and serves as the only land link from the village of Colington to the town of Kill Devil Hills. The village's burgeoning population has contributed significantly to the increase of traffic on Colington Road.

Figure 1. Wright Brothers National Memorial vicinity map. July 1996.

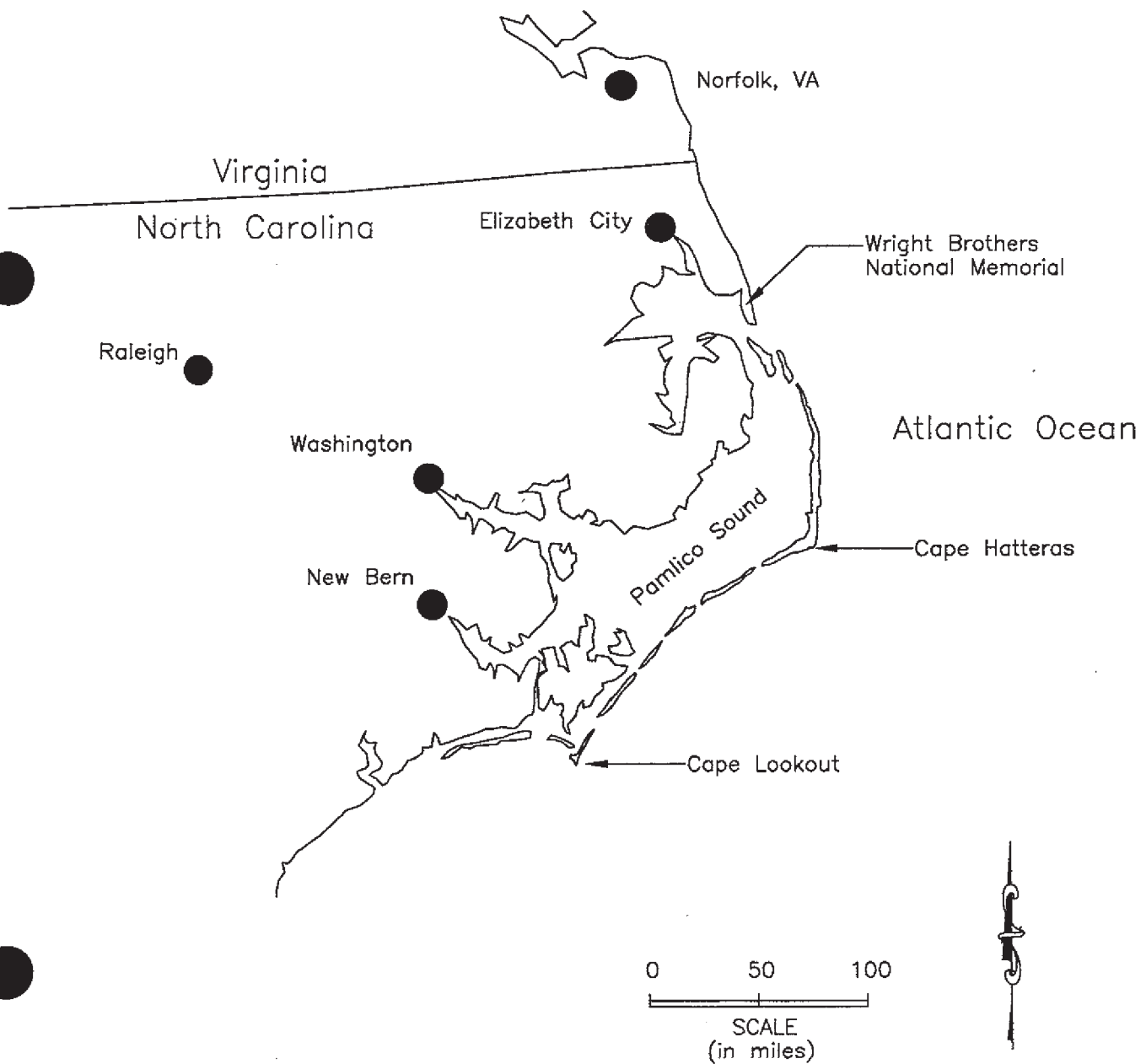
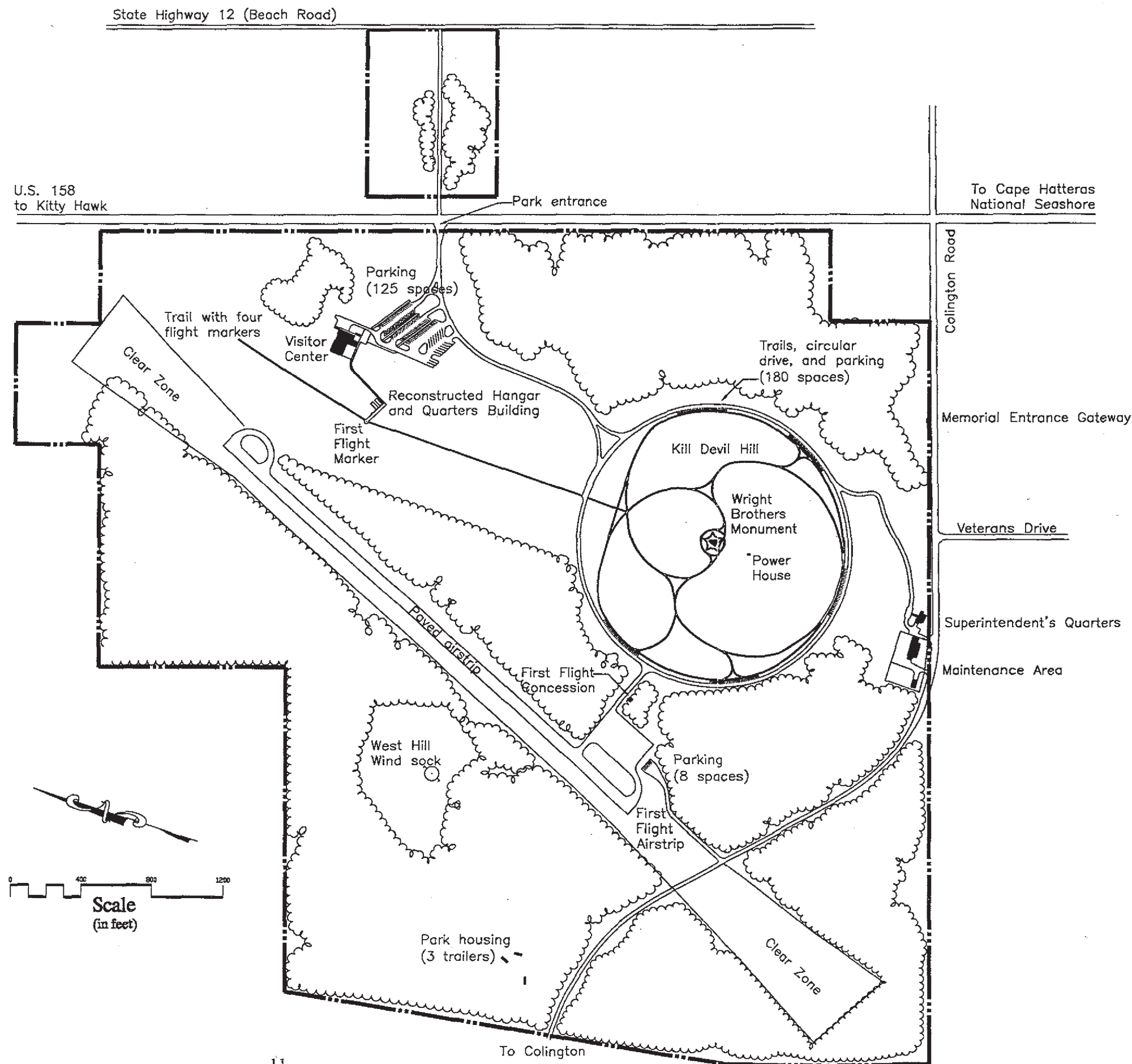


Figure 2.



Wright Brothers National Memorial

Kill Devil Hills, North Carolina

Existing Conditions
Summer 1996

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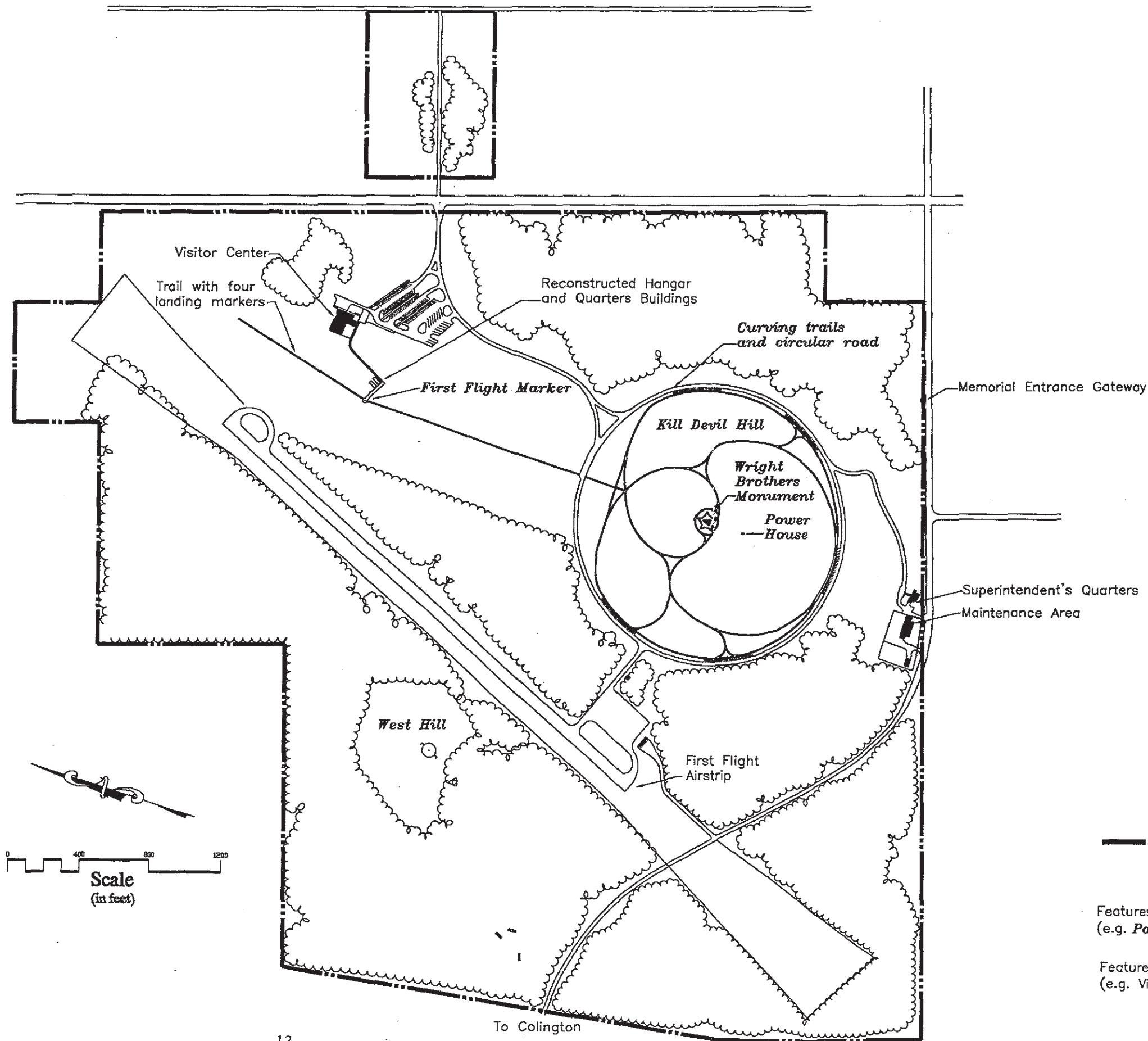
Legend

- Property line
- Tree/shrub line

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Figure 3.



Wright Brothers National Memorial

Kill Devil Hills, North Carolina

Historic Base Map Summer 1996

Legend

- Property line
 - Tree/shrub line
 - Contributing historic resources
 - Non-contributing features
- Features in italicized text (e.g. *Power House*)
- Features in standard text (e.g. Visitor Center)

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THE ALTERNATIVES

Introduction

This draft general management plan contains six alternatives for the management of Wright Brothers National Memorial: Alternative 1, *continue and make minor modifications to current operations*; Alternative 2A (the preferred alternative), construct a new visitor/administrative facility west of U.S. 158 while redesigning the U.S. 158 entrance to the park; Alternative 2B, construct a new visitor/administrative facility east of U.S. 158 on the 15.69-acre tract while redesigning the U.S. 158 entrance; Alternative 2C, construct a new visitor/administrative facility west of U.S. 158, while redesigning the U.S. 158 entrance and requiring visitors to use a remote parking area and ride a shuttle to the park during peak use season; Alternative 3A, construct a new visitor/administrative facility west of U.S. 158 and use Colington Road as the park entrance; Alternative 3B, construct a new visitor/administrative facility west of U.S. 158 and use Colington Road as the park entrance while requiring visitors to use a remote parking area and ride a shuttle to the park during peak use season. These strategies were designed to provide for the protection of the resource, to provide a satisfying experience for the memorial's visitors, to respond to the issues facing the memorial, and to address the direction set out in the Act of March 2, 1927, and the management objectives. They are explained later in the document.

Two elements of the alternatives predominate many of the issues facing the management of the memorial as the National Park Service prepares for the centennial of flight in 2003 and forges into the 21st Century. By 1) addressing the function and location of a new visitor/administrative facility and 2) the location and enhancement of the visitor's entrance, the National Park Service will lay the groundwork for solving many of the problems besetting the memorial today; problems that would surely exacerbate in the future. During the preparation of the alterna-

tives, the National Park Service has coordinated its planning efforts with various State and local agencies and interest groups. Implementation of the plan will be dependent upon continued coordination and their support. New funding sources and technological advances are available to the National Park Service that address issues identified in this plan. A summary comparison of the alternatives as they address the issues is shown in Table 1 at the end of this chapter. Table 2 shows the costs for implementing each alternative.

Worldwide interest in the centennial of flight also stimulates reconsideration of the memorial for "World Heritage" status. In preparation for the 100th anniversary of flight, the National Park Service will resubmit its application for this international recognition.

ALTERNATIVE 1: CONTINUE AND MAKE MINOR MODIFICATIONS TO CURRENT OPERATIONS

Concept

Under Alternative 1 (Figure 4), current operations of the National Park Service at Wright Brothers National Memorial would continue with some minor modifications. The insufficiencies of the visitor/administrative facility, fee collection, traffic flow, and the condition of the pylon would be corrected to accommodate increases in visitation during the centennial of flight.

Entrance and Parking

Visitors would enter the memorial using an enhanced entrance off U.S. 158. U.S. 158, a five-lane undivided road (two northbound, two southbound, and one turning lane), carries more traffic than any other road on the Outer Banks. Seasonally, average daily traffic counts range from 10,000 to 85,000 vehicles; significant increases in the number of vehicles are expected over the next five to fifteen years. To facilitate visitor entrance into the memorial the National Park Service would coordinate with the North Carolina Department of Transportation to construct a deceleration lane along southbound U.S. 158. Signs and warnings would caution visitors to slow down and use the 1,500 to 1,800-foot deceleration lane to enter the memorial. The length of the lane would allow room for many vehicles to decelerate and wait (or stack) to enter the memorial.

The 125 spaces in the parking area would suffice for parking. However, to improve traffic flow during extreme weather conditions and because of the increased numbers of seniors visitors, the National Park Service would alter the parking area design to accommodate a designated drop-off and pick up area. On peak visitation days, overflow parking would continue to be allowed

along the road leading from the parking area to Kill Devil Hill. Vehicles would exit the park onto U.S. 158; a dedicated right turn lane would facilitate traffic flow and reduce congestion.

Fee Collection

During the peak use season, National Park Service personnel collect an entrance fee as vehicles exit the memorial; and at times this causes congestion along the exit road. The deceleration (or stacking) lane on U.S. 158 would permit the National Park Service to collect fees as vehicles entered the memorial instead of paying the fee while exiting, as is the current practice. A fee collection plaza (2 lanes) consisting of 2 booths would hasten visitor entrance into the memorial and would accommodate all sizes and types of vehicles.

The National Park Service, by instituting an automated fee collection system, using bank/credit cards, may eliminate the need to use currency to enter the park. Most transactions would be bank card based and automated. The small number of memorial visitors requiring a cash transaction would be directed around the fee collection booths and instructed to pay at the visitor facility.

Visitor Use and Circulation

After entering the memorial most visitors would park their vehicles and enter a reconfigured Visitor Center. The National Park Service would take steps to improve visitor circulation and provide a more comfortable experience in the building. Structurally and mechanically the following changes would take place: the installation of a new roof membrane; a redesigned heating, ventilation, and air-conditioning system (HVAC) which would include structural changes to the building's entrance; an electrical system to accommodate the demands of 21st century-technology; expanded space to separate the orientation and information area from the sales area; a glider room; and internal rest rooms.

Visitors would enter the building and be greeted at the information and orientation area. Here, the National Park Service would provide basic information about the park and the story of the Wright brothers. From this area, visitors would be directed into the exhibit room, the First Flight auditorium, the glider room, and finally toward the sales area, and then exit.

The National Park Service would encourage visitors to explore the park on foot. The Wright brothers story would be introduced through brochures and exhibits and reinforced through personal communication during the First Flight auditorium talk and by other park personnel. Visitors would follow stabilized paths to the hangar exhibit area where they would learn more about the Wright brothers experiences leading to the seminal flights in December 1903. From here they would venture along another stabilized trail that follows the path of the first flights of December 17, 1903, the extent of each flight signified by a boulder. Turning toward the southwest, visitors would begin their journey from the First Flight area to the base of Kill Devil Hill, again along a user-friendly stabilized path and their ascent to the pylon perched approximately 90 feet above the hill's base. A series of paths wind up the hill, gradually reaching the base of the pylon. From here the visitor would gain a perspective of the surrounding landscape while contemplating the achievements of the Wilbur and Orville Wright. Following the descent from the hill, visitors would retrace their steps to the visitor center or perhaps descend to the west and take in an airplane ride available at the First Flight Airstrip.

Weather conditions, physical limitations, and distance often limit visitors choices in regard to movement around the memorial. Except in the most extreme weather conditions, most visitors would be able to reach the hangar and workshop exhibits and at least part of the December 17, 1903, First Flight area. Some visitors would choose to ride in their vehicles to Kill Devil Hill. Here they would encounter a number of choices: continue riding around the hill, park at one of the designated parking areas and ascend the hill

to the pylon, or take the plane ride at the First Flight Airstrip.

Perhaps inspired by the information obtained from the First Flight auditorium talk, the exhibits, contact with park staff, or their journey around the memorial, visitors may return to the visitor center before departing in an effort to learn more about the Wright brothers and their accomplishments. Their explorations may lead them to the sales area or to the exhibits, other media in the visitor center, or to one of the park staff.

Pylon

Visitors would be encouraged to climb Kill Devil Hill to the base of the pylon, however access to the structure would be limited to the ground floor. The National Park Service would install gates across the stairways to prohibit visitor access up the stairs. Only on special occasions would park personnel lead a limited number of visitors up the narrow, twisting stairs to the top.

Material deterioration and mechanical problems have beset the pylon over the past several years. Water has seeped through the structure and the electrical system is outmoded. An Historic Resource Study undertaken by the National Park Service would recommend specific actions to correct these problems. Regardless, to restore the pylon to its stature of a bygone era, the beacon atop the structure would be reilluminated.

Screening and Removal of Vegetation

In particular instances the visitor experience would be enhanced through the selective removal or addition of vegetation. Visitors looking toward and beyond the First Flight area glimpse single-engine aircraft taking-off and landing on a regular basis. Because the vegetative line separating the memorial's open area from the First Flight Airstrip is so thick, visitors seldom see more than the touch down or takeoff. Thinning or removing some of this vegetation

between the airstrip and West Hill (see drawing Alternative 1) would enable visitors to observe the small aircraft, thus, perhaps, broadening their interest and understanding of the story of flight. After experiencing the First Flight Room auditorium talk and observing the exhibits, visitors would welcome a clear view of these aircraft soaring into or descending from the sky.

Another type of visitor experience would be enhanced by selective removal of vegetation. The illuminated pylon serves a handsome monument to the Wright brothers, especially during nighttime hours. Vehicles travelling north and south along U.S. 158, in most instances, gain a clear view of the pylon. However, some vegetation has grown so high on park property along the highway to obscure this view. The National Park Service would periodically trim this vegetation and work with other property owners along U.S. 158 to ensure that this view would be maintained.

On the other hand, some selective planting of vegetative screens would help seal visitors within the confines of the memorial and reduce the impact of adjacent development on the visitor's experience. This situation is apparent at the park's entrance. Although adjacent land uses could not entirely be screened from visitors, the addition of vegetation at this location would help soften distracting sights and sounds and focus visitors attention on the Wright brothers story.

Some visitors while circling the pylon in their vehicles have been distracted by the maintenance area and associated activities. Screening the maintenance area, located on the southern edge of the park, from visitor view would also help focus the visitors attention. Although visitors who ascend Kill Devil Hill and look south would continue to be cognizant of the maintenance area, their view, too, would be softened by a vegetative screen.

Additional Facility Development or Removal

Anticipating increases in small plane use of the First Flight Airstrip, the National Park Service would expand the capacity of the parking area serving the airstrip. This action would entail additional paving and the removal of a small amount of vegetation.

The National Park Service would replace and relocate the inadequate First Flight concession structure. The new structure would be located nearby and provide sanitary facilities and some shelter from the sun and rain. Enhanced signing along the circular road would direct visitors to this location. The vacated site would be cleared, grubbed, and replanted with native vegetation.

Several structures serve or have served as employee housing over the years. The Cape Hatteras Group superintendent occupied a 1930s-brick structure located on the south portion of the memorial, off Colington Road, near the maintenance area. A structural assessment of the building questions whether it could be restored or adapted for commercial or another use cost-effectively. Rather than keeping this structure in a decrepit state on the landscape, the National Park Service would remove the building, obliterate the surrounding impervious surfaces (roads and walkways), and restore the vacant land with native vegetation.

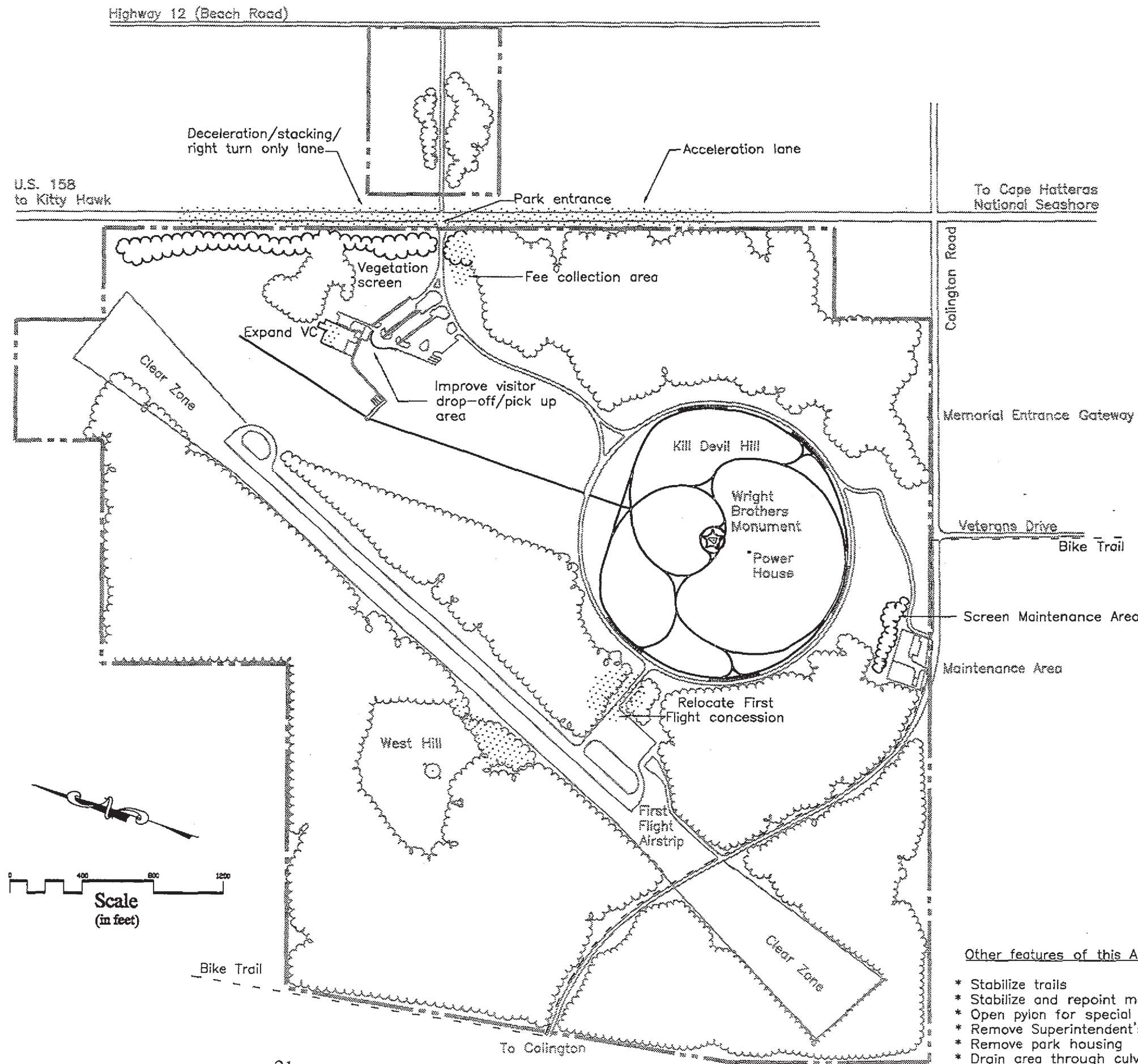
In similar fashion, the need to provide employee housing at the memorial has waned. The community offers sufficient numbers of adequate housing. Currently, several employees occupy trailers located in a housing compound on the west side of the memorial off Colington Road. The National Park Service would phase out employee housing, remove the trailers and associated development, and replant the area with native vegetation.

The town of Kill Devil Hills has constructed on park property a portion of a bikeway to connect several residential subdivisions with the First Flight Middle School. Under this alternative, the National Park Service would permit the town to complete this project.

Costs and Staffing

Completing the developments outlined under Alternative 1 would cost \$2,140,700. Improvements associated with U.S. 158, including deceleration and acceleration lanes, are not included. No increases in staffing would be anticipated.

Figure 4.



Wright Brothers National Memorial

Kill Devil Hills, North Carolina

DRAFT Alternative 1

Continue and make minor modifications to current operations

Legend

- Property line
- Trees/shrubs
- Possible area for development

Other features of this Alternative

- * Stabilize trails
- * Stabilize and repoint monument
- * Open pylon for special events
- * Remove Superintendent's house
- * Remove park housing
- * Drain area through culverts

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ON MICROFILM

ALTERNATIVE 2A: CONSTRUCT A NEW VISITOR/ADMINISTRATIVE FACILITY WEST OF U.S. 158 WHILE REDESIGNING THE U.S. 158 ENTRANCE TO THE PARK

Concept

The construction of a new visitor/administrative facility designed to inspire park visitors highlights this alternative (Figure 5). Although visitors would continue to enter the park from U.S. 158, a redesigned intersection would alleviate vehicle entrance and egress.

The National Park Service's interpretive efforts would be focused in the Visitor Center, allowing the visitor to contemplate the memorial landscape on its own terms. Through a series of interpretive media and devices in the Visitor Center, park visitors would learn about the Wright brothers contributions to aviation and the effects those accomplishments had on humankind. Then, armed with this information, visitors would venture onto the memorial's landscape and visit the areas where the Wrights conducted their glider experiments, where the first flights ascended, and where the Nation built a lofty monument and formal pedestrian and vehicle circulation system in their honor.

In Alternative 2A, the preferred alternative, the National Park Service would prepare for the events culminating with the centennial of flight on December 17, 1903. In order to meet the demands associated with this international event and to accommodate the needs of resource protection and visitor services of the 21st Century, the National Park Service would embark on an ambitious program. This ambitious program would, to a large extent, depend upon the assistance of the town of Kill Devil Hills, the State of North Carolina's First Flight Centennial Commission and the North Carolina

Department of Transportation; and the support of many organizations, such as the Dare County Tourist Bureau, the Outer Banks Chamber of Commerce, and the First Flight Society.

As the Wright brothers represented the forefront of technological progress at the turn of the 20th Century, so too would the National Park Service employ "state-of-the-art" advances to address, in part, fee collection, interpretation, and visitor circulation. Because the prospect of adding personnel to the memorial's staff would be slim, efforts would go forward to provide alternatives to labor-intensive services. The National Park Service would augment its Volunteer-in-the-Park program to supplement personal services to the public. In addition, any new construction would be subject to standards of sustainable design to accommodate unanticipated changes in function and use.

Entrance and Parking

Visitors travelling southbound would arrive at the memorial using an enhanced entrance off U.S. 158. To ease visitor entrance into the memorial the National Park Service would coordinate with the North Carolina Department of Transportation to construct a deceleration lane along southbound U.S. 158. Signs and warnings would caution visitors to slow down and use the 1,500 to 1,800-foot lane to prepare to enter the memorial. The length of the lane would allow adequate room for many vehicles to decelerate and wait (or stack) to enter the memorial. Construction of the deceleration lane would necessitate the relocation of utilities, the ditch line, and culverts.

Travelers, northbound on U.S. 158, would enter the park through a "jug handle" turn (see drawing Alternative 2A). Vehicles would exit onto the 15.69-acre property on the east side of U.S. 158 and turn back toward the park's entrance. Construction of the jug handle would entail the elimination of Prospect Avenue (the road which cuts through the 15.69-acre tract from North Carolina 12 to U.S. 158). The National Park Service would seek the coopera-

tion of the town of Kill Devil Hills and the residents and businesses in the area to effect the closing of Prospect Avenue. An enhanced traffic signal device would control vehicle movement into the park from the east of U.S. 158 location. To ensure vehicles use the jug handle properly, directional signs and warnings would alert drivers approaching the intersection. Signs would indicate that direct left-hand turns would be prohibited. In addition, a median would be placed in the turn (middle) lane of U.S. 158 or the turn lane would be eliminated in order to discourage direct left-hand turns.

In cooperation with the town of Kill Devil Hills, the National Park Service would permit beach parking on the east side of the 15.69-acre tract. Access to this parking area would come from North Carolina 12 only. A memorandum of understanding between the town and the National Park Service would outline the responsibilities of each party.

After entering the park and passing through the fee collection plaza, vehicles would park in the one of the 225 slots in the area accompanying the new visitor/administrative facility. Approximately ten per cent of the spaces would be dedicated to oversized vehicles and busses. To improve traffic flow during extreme weather conditions and the because of the increased numbers of senior visitors, the parking area would feature a designated drop-off and pick up area. The parking area would be nestled between the Visitor Center and U.S. 158; a vegetative barrier would be maintained to screen the parking area and Visitor Center from U.S. 158. Vehicles would exit the park onto U.S. 158; a dedicated right turn lane would facilitate traffic flow and reduce congestion. A portion of the memorial's road system linking the existing entrance with the road around Kill Devil Hill would be removed and the area grubbed and revegetated.

Fee Collection

The National Park Service would work closely with the local community and organizations to

publicize the fee system at the memorial. Visitors would be made aware of the collection system prior to entering the park. Nevertheless, strategically placed signs would remind visitors of the fee collection system.

Under Alternative 2A, the southbound deceleration (or stacking) lane would permit the National Park Service to collect fees as vehicles entered the memorial instead of collecting the fee while exiting. Northbound vehicles would use the jug handle turn and stack accordingly. Traffic signals would be calibrated and sufficient stacking space allotted to prevent congestion between northbound and southbound entering vehicles. A fee collection plaza (3 lanes) consisting of 3 booths would hasten visitor entrance into the memorial and would accommodate all sizes and types of vehicles. A vegetative barrier would screen the fee collection plaza from the Visitor Center and the rest of the park.

The National Park Service, by instituting an automated fee collection system that uses bank/credit cards, may eliminate the need to use currency to enter the park. Most transactions would be bank card based and automated. Two booths would collect automated transactions, while the third booth would accommodate oversized vehicles and the small number of memorial visitors requiring a cash transaction.

Visitor Use

To accommodate the demands generated by the centennial of flight and of the 21st Century, the National Park Service in cooperation with the North Carolina First Flight Commission would construct a new visitor/administrative facility. The facility would be designed to provide information and inspiration about the achievements of the Wright brothers. Various media would be employed to convey the story of Wilbur and Orville Wright. The Visitor Center would serve as the backdrop to encourage visitors to learn more about the achievements of the Wright brothers, to ascend the hill where Wilbur and Orville conducted many glider experiments, and to venture out to the area

where man first successfully lifted into the sky. The existing Visitor Center and parking area would be removed, the area grubbed and revegetated. Utilities would be upgraded and directed to the new facility. The removal of the Visitor Center and the construction of a new facility would also necessitate an examination of the park's drainage system.

To take advantage of the resources on site, the National Park Service would locate this facility at a point approximately equidistant from the First Flight area and the pylon. The National Park Service would concentrate its interpretive efforts within the Visitor Center, leaving visitors with only modest and subtle reminders of the Wright brothers' story on the landscape itself. Visitors would be able to contemplate the site where man first successfully ascended skyward in a heavier-than-air, controlled, powered flight, the hill where the brothers conducted many glider experiments, and the triangular-shaped monument erected in honor of the brothers. The Visitor Center would sit at the vertex of the equidistant triangle.

The visitor area of the facility would consist of 12,000 to 15,000 square feet. Interpretive zones would include an audiovisual area featuring a 20 to 22-minute state-of-the-art production to inspire visitors and a series of 8 to 10-minute specialized features; a First Flight auditorium that would house the replica Wright Flyer and serve as the venue for the ranger talk; exhibit areas to house exhibits about the Wright brothers triumphs; high tech exhibit areas employing the latest in high technology interactive media catering to group activities; a glider room featuring one or more Wright gliders; an information and orientation area; a sales area; and rest rooms.

The National Park Service would devote a segment of the exhibit area to a restored section of the quarters which the brothers occupied during 1902 and 1903. Here, in a comfortable environment, visitors would learn how the Wright brothers lived, toiled, and argued over the principles of flight. Visitors would gain an

understanding of the living and working conditions on the Outer Banks in the fall and early winter of 1903. As a result of providing this information in the Visitor Center, the National Park Service would remove the replica exhibits located in the First Flight area.

Transition areas would define the visitors introduction to and exit from the Visitor Center. From the parking area to the door of the Visitor Center, visitors would encounter symbols of flight, identified by historical milestones and images. Once in the Visitor Center, images of the Wright brothers would accompany visitors to the core of the building. Visitors emerging from the second transition area would encounter an orientation area. Here, National Park Service personnel and Volunteers-in-the-Park would provide information to visitors; monitors, touch screens, and printed material would inform visitors to the amenities and events at the site.

Following their journey through the facility, visitors could stop at the third transition area, a trailhead, located inside or outdoors. Here visitors would decide where to go next: to the First Flight site, to the pylon, to the sales area, return to an exhibit, or perhaps depart the site. Information in this area would assist visitors make an informed decision.

To ensure that visitors receive a reasonable opportunity to experience the audiovisual production or the First Flight auditorium talk, visitors would be advised to reserve a space for these attractions. The National Park Service would work with the Dare County Tourist Bureau and Outer Banks Chamber of Commerce to establish a reservation system so that visitors could plan their trip. Information about the memorial's policy would be included in a number of sources at the local, State, and national levels.

Reservations could be made off premises or at the park. Requiring a reservation or "ticket" to these attractions would also limit crowding and reduce the potential for placing a strain on the facilities and the park's cultural and natural resources.

The audiovisual area would feature a film (perhaps a mini-IMAX) of approximately 20 to 22 minutes in length to complement the ranger talk in the First Flight auditorium. Specialized features (8 to 10 minutes in length) on various aspects of the Wright brothers story would also be available in this area. This space would accommodate approximately 200 visitors.

Continuing a long-established tradition, the First Flight auditorium talk would feature the inspirational story of triumph and achievement of the Wright brothers. Visitors would be able to interact with park staff with the replica Wright flyer as the backdrop. To promote maximum contact and comprehension at this presentation, the audience would be limited to 200 visitors. Consideration would be given to shortening the talk to approximately 20 minutes.

As Wilbur and Orville Wright successfully explored the limits of technology in the early 20th Century, the National Park Service, in one area of the Visitor Center, would employ high tech methods to relate the Wright brothers story. Monitors, computers, and other types of interactive or audiovisual media would draw various age groups to this area. In order to avoid having an individual monopolize the various stations and exhibits, the National Park Service would design most stations to accommodate group activities. Visitors would have the opportunity to experience these exhibits and circulate throughout the Visitor Center. The National Park Service would solicit the expertise of software and hardware manufacturers to assist in the development and support of the technology for these exhibits.

The National Park Service would complement its high tech exhibits with areas devoted to artifacts, story boards, panels, dioramas, or photographs. These exhibits would explain the saga of the Wright brothers achievements and be designed to inform visitors representing many age and interest levels.¹

The messages conveyed at Wright Brothers National Memorial culminate with the events of

December 17, 1903, and the effects of the Wright achievements on humankind. The park can relate only a portion of this inspirational story. Another National Park System unit in Ohio, the Dayton Aviation Heritage National Historical Park, complements and broadens the story of the Wright brothers. To enhance the interpretive programs at both sites, the National Park Service would establish a video link between the parks in Kill Devil Hills and Dayton. The parks would cooperate with the local school districts to develop programs and educational materials to supplement the on-site and video visits. Special programs, such as First Flight auditorium talks or commemorative celebrations, would be linked to Dayton. Similar types of special events or Wright-related educational programs would be broadcast to Kill Devil Hills. Educational programs could be linked directly to the two sites or to schools in North Carolina and Ohio.

The Eastern National Park and Monument Association outlet would be located in an area near the facility's exit. This layout would lessen crowding in the orientation area and promote a smooth flow of visitor movement through the facility.

By incorporating elements of sustainable design, the facility would accommodate changes in use. Movable interior walls to accommodate space for large numbers of visitors for commemorative events or special exhibitions, flexible mechanical systems (for example, the ability to move easily HVAC ducts and electrical conduits), alternative energy sources, and the flexibility to expand without compromising the integrity of the building would all be incorporated. Rest rooms would be located on the exterior of the building and incorporate sensible design ratios for male and female visitors. Rest rooms would be designed to be cleaned, or a portion closed, without disrupting the entire operation.

Because the Visitor Center would serve the interpretive and informational needs of the visitor, interpretive planning documents must guide the design of the facility. Media planners

must work hand in hand with the architects to ensure that visitors enjoy a safe and enriching experience. This experience would link the Visitor Center with the memorial's landscape.

This facility would also lodge the administrative functions of the National Park Service which comprise nearly one-quarter of the total area (approximately 5,000 square feet). The space would be devoted to a number of functions including staff offices, a staff rest room, a staff break room, training and conference area, a storage area large enough to store chairs used for commemorative events, an Eastern National Park and Monument Association office and storage area, and space for the mechanical systems.

In addition, the administrative area would house a First Flight Society plaza. Primarily for use by the park's cooperating association, the first Flight Society, the area would lodge an office, conference room, and a space to function as a library, reference room, and display area available to the public. Scholars and students could conduct research on the Wright brothers and may find this area particularly enriching. Portraits depicting recipients of the society's annual award would be displayed here.

Visitor Circulation

Although visitors would gain insight into the Wright brothers achievements at the Visitor Center, the National Park Service would encourage visitors to explore on foot the grounds which beheld the first flight. True, much of the area has been manipulated in order to stabilize the landscape, but it is key to the visitors' experience to walk the route of the first powered controlled flights or scale the hill, the site of numerous glider ascents. This message would be introduced through brochures, films, videos, and exhibits and reinforced through personal communication during the First Flight auditorium talk and by park personnel. Only subtle markers on the landscape would reveal the stories of the Wright brothers.

Visitors would follow stabilized paths from the Visitor Center to the commemorative area where they would contemplate the Wright brothers experiences leading to the seminal flights in December 1903. The commemorative area consists of the First Flight area, the path leading to Kill Devil Hill, the hill itself, the circular road, the paths winding about the hill, and the pylon. The stabilized surface of the trails would allow strollers, carriages, and wheelchairs to maneuver easily. Culverts would replace sections of the drainage ditch on the east side of the memorial to allow the National Park Service to construct connector trails from the Visitor Center to the commemorative area.

Visitors would arrive at the First Flight area. Here, they would see the outline of the 1902-1903 quarters and the 1903 hangar where the Wright brothers lived, toiled, and argued over the principles of flight. Visitors would also visit the site where John T. Daniel photographed the remarkable scene of the first powered controlled flight. The National Park Service would prepare a Wayside Exhibit Plan to direct the interpretation of these exhibits and other key areas in the park.

Starting at the commemorative boulder visitors would venture along another stabilized trail that follows the path of the first flights of December 17, 1903, the extent of each flight signified by a marker. The National Park Service would consider replacing the present markers with those that are less conspicuous on the landscape. The Wayside Exhibit Plan would address this issue more specifically. A 60-foot long steel monorail, a replica of the starting rail which stabilized the flyer during takeoff, parallels this path. Referred to as the "Junction Railroad" by the Wright brothers, the original rail consisted of four 15-foot two-by-fours.

Turning toward the southwest, visitors would begin their journey from the First Flight area to the base of Kill Devil Hill, again along a stabilized trail. This path follows a wide road which was part of memorial's design in the late 1920s and early 1930s.

From the base of the hill, visitors could ascend the pylon perched approximately 90 feet above the hill's base. A series of paths wind up the hill, gradually reaching the base of the pylon. To accommodate visitors who arrive at Kill Devil Hill without stopping at the First Flight Area, the National Park Service would construct two additional trails. One trail would follow the road to the northern base of the hill; the other trail would begin at the eastern parking area and connect with the hill's trail system. This linkage would mirror the trail connector on the opposite side of the hill and complete the symmetrical design.

From the top of Kill Devil Hill visitors would gain a perspective of the surrounding landscape while contemplating the achievements of Wilbur and Orville Wright. Following their descent from the hill, visitors would follow another path to the Visitor Center or perhaps descend to the west and take in an airplane ride at the First Flight Airstrip.

Returning to the Visitor Center visitors would be presented with a variety of choices including: 1) completing their visit and leaving; 2) reentering the facility and obtaining or purchasing additional information; or 3) driving their vehicles around Kill Devil Hill—and stopping at one of the parking areas along the road or taking a ride in the concessionaire-operated airplane—and exiting the park.

To preserve the sanctity of the commemorative design and the memorial landscape and to encourage visitors to become pedestrians on the landscape rather than drivers or passengers in a vehicle, the National Park Service would restrict access to the full circular drive. During the peak use season, the National Park Service would close to vehicular traffic the portion of the circular road between the parking areas illustrated on Figure 5. The National Park Service would install gates or removable bollards to close that portion of the road. A screened cul-de-sac located near the First Flight concessionaire would permit buses and -vehicles to turn around. Traffic would be two-way at this time.

At its discretion the National Park Service would open the road during such times as periods of non-peak use, inclement weather, or during commemorative events.

Pylon

Visitors would be encouraged to climb Kill Devil Hill to the base of the pylon, however access to the structure would be limited to the ground floor. The National Park Service would install gates across the stairways to prohibit visitor access up the stairs. Only on special occasions would park personnel lead a limited number of visitors up the narrow, twisting stairs to the top.

Material deterioration and mechanical problems have beset the pylon over the past several years. Water has seeped through the structure and the electrical system is outmoded. An Historic Resource Study undertaken by the National Park Service would recommend specific actions to correct these problems. However, to restore the pylon to its stature of a bygone era, the beacon atop the structure would be reilluminated.

Screening and Removal of Vegetation

In particular instances the visitor experience would be enhanced through the selective removal or addition of vegetation. By planting, thinning, or removing vegetation, the National Park Service would direct and enhance views within and outside the memorial.

Visitors looking toward and beyond the First Flight area glimpse single-engine aircraft taking-off and landing on a regular basis. Because the vegetative line separating the memorial's open area from the First Flight Airstrip is so thick, visitors seldom see more than the touch down or takeoff. Thinning or removing some of this vegetation adjacent to the airstrip (see drawing Alternative 2A) would enable visitors to observe the small aircraft, thus, perhaps, broadening their interest and understanding of the story of flight. After experiencing the First Flight auditorium talk and observing the exhibits, visitors would

welcome a clear view of these aircraft soaring into or descending from the sky.

Another type of visitor experience would be enhanced by selective removal of vegetation. The illuminated pylon serves a handsome monument to the Wright brothers, especially during nighttime hours. Vehicles travelling north and south along U.S. 158, in most instances, gain a clear view of the pylon. However, some vegetation has grown so high on park property along the highway to obscure this view. The National Park Service would periodically thin or trim this vegetation and work with other property owners along U.S. 158 to ensure that this view would be maintained.

On the other hand, some selective planting of vegetative screens would help seal visitors within the confines of the memorial and reduce the impact of adjacent development on the visitor's experience. This situation is apparent at the park's entrance. Although adjacent land uses could not entirely be screened from visitors, the addition of vegetation at this location would help soften distracting sights and sounds and focus visitors attention on the Wright brothers story. Maintaining the vegetation along U.S. 158 in the area of the Visitor Center would also shelter visitors from the noise and traffic generated by the busy thoroughfare.

Vegetation management guidelines would also be based on reducing staff-hours required for mowing, trimming, and maintenance. Specific action would include prescribed mowing times or seasons, the use of herbicides that release or that are selective for desirable plant species, and altering perceptions of what the site should look like (for example taller grasses and less under-story).

Additional Facility Development or Removal

Anticipating increases in small plane use of the First Flight Airstrip, the National Park Service would expand the capacity of the vehicle and plane parking areas serving the airstrip. The

plane parking area would expand by a factor of 1.25, while the vehicle parking area would expand two to two-and-one-half times its present size. These actions would entail additional paving and the removal of a small amount of vegetation.

The National Park Service would replace and relocate the inadequate First Flight concession structure. The new structure would be located nearby and provide sanitary facilities and some shelter from the sun and rain. Enhanced signing along the circular road would direct visitors to this location. The vacated site would be cleared, grubbed, and replanted with native vegetation.

Several structures serve or have served as employee housing over the years. The Cape Hatteras Group superintendent occupied a 1930s-brick structure located on the south portion of the memorial, off Colington Road, near the maintenance area. A structural assessment of the building questions whether it could be restored or adapted for commercial or another use cost-effectively. Rather than keeping this structure in a decrepit state on the landscape, the National Park Service would remove the building, obliterate the surrounding impervious surfaces (roads and walkways), and restore the vacant land with native vegetation.

In similar fashion, the need to provide employee housing at the memorial has waned. The community offers sufficient numbers of adequate housing. Currently, several employees occupy trailers located in a housing compound on the west side of the memorial off Colington Road. The National Park Service would phase out employee housing, remove the trailers and associated development, and replant the area with native vegetation or consider this site for the location of a new maintenance area.

In an effort to remove non-visitor related structures from the memorial's landscape and reduce the disruption to the park's natural and cultural resources, the National Park Service would relocate its maintenance facility from its current location (off Colington Road and south

of Kill Devil Hill). The physical facilities are barely adequate to serve the park and have been constructed in a piecemeal manner. The National Park Service would also remove the asphalt road linking the superintendent's house and the maintenance area with the circular drive and Colington Road. The disturbed area would be grubbed and stabilized with native vegetation. Maintenance vehicles could enter the park from Colington Road via the First Flight Airstrip road.

Three possible locations, all within the park's boundaries but away from the visitor, would qualify to accommodate the new maintenance area. Site A currently is the site for employee housing which would be removed. Site B, located across the road from the housing compound, served as the location for a Civilian Conservation Corps camp in the 1930s. Site C, located west of the "emergency clear zone," is another disturbed area. All three sites have been disturbed within the past 50 to 60 years. Selection of a preferred site would take the following criteria into consideration: 1) remote location, away from visitor experience areas; 2) minimal

disturbance to prime cultural and natural resources; 3) sufficient area, approximately two acres; 4) safe road entrance; and 5) to minimize costs, take advantage of existing infrastructure.

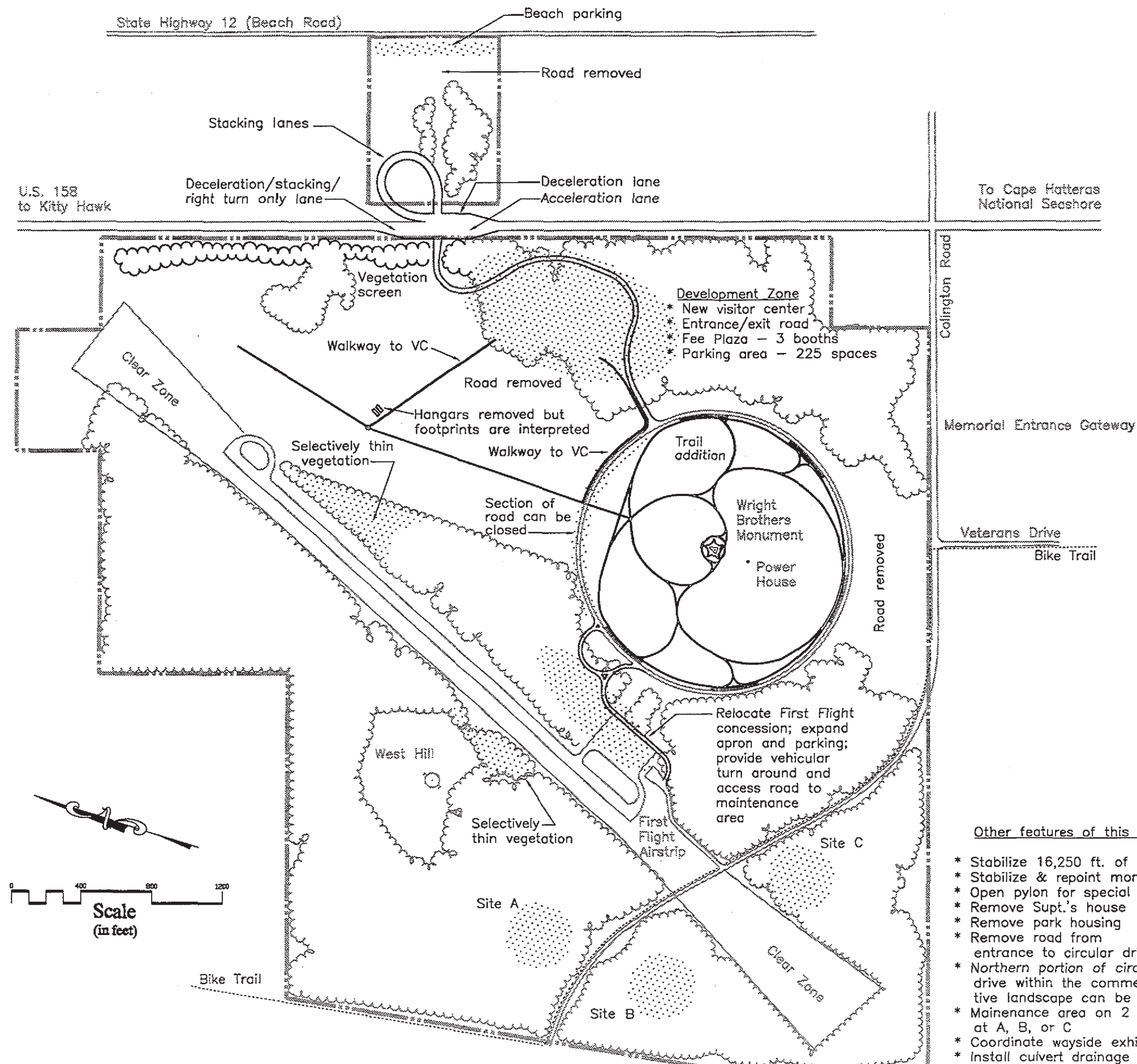
The town of Kill Devil Hills has constructed on park property a portion of a bikeway to connect several residential subdivisions with the First Flight Middle School. Under this alternative, the National Park Service would permit the town to complete this project.

Costs and Staffing

Completing the developments outlined under Alternative 2A would cost \$26,565,450. Improvements associated with U.S. 158 including deceleration and acceleration lanes, the jug-handle turn, and the enhanced traffic signal system are not included. Local or State agencies would be responsible for these improvements. This alternative would require the services of a projectionist and a person skilled to maintain the high tech interpretive equipment. The park would consider adding staff members or contracting for these services.

¹An abbreviated Comprehensive Interpretive Plan will accompany the final General Management Plan. It will outline, in detail, the use and placement of interpretive media and staff including museum exhibits, personal services, waysides, publications, audiovisual media, historic furnishings, and architectural and interior design elements. It will also outline a process for developing the various interpretive media plans.

Figure 5.



Wright Brothers National Memorial

Kill Devil Hills, North Carolina

DRAFT Alternative 2A

Construct a new visitor/administrative facility west of U.S. 158 while redesigning the U.S. 158 entrance to the park

Legend

- Property line
- Trees/shrubs
- Possible area for development

- Other features of this Alternative
- * Stabilize 16,250 ft. of trails
 - * Stabilize & repoint monument
 - * Open pylon for special events
 - * Remove Supt.'s house
 - * Remove park housing
 - * Remove road from entrance to circular drive
 - * Northern portion of circular drive within the commemorative landscape can be closed
 - * Maintenance area on 2 acre site at A, B, or C
 - * Coordinate wayside exhibits
 - * Install culvert drainage system

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July 1996	SEFA

ON MICROFILM

ALTERNATIVE 2B: CONSTRUCT A NEW VISITOR/ADMINISTRATIVE FACILITY EAST OF U.S. 158 ON THE 15.69-ACRE TRACT/PROVIDE YEAR ROUND SHUTTLE SERVICE

Concept

A new visitor/administrative facility would be designed to inspire park visitors and relate the story of the Wright brothers (Figure 6). It would be located on the vacant 15.69-acre tract between U.S. 158 and the beach road (North Carolina 12). Year-round, visitors would board a shuttle at the Visitor Center, cross U.S. 158, and enter the park.

In Alternative 2B, the National Park Service would prepare for the events culminating with the centennial of flight on December 17, 1903. In order to meet the demands associated with this international event and to accommodate the needs of resource protection and visitor services of the 21st Century, the National Park Service would embark on an ambitious program. This program would, to a large extent, depend upon the assistance of the town of Kill Devil Hills, the State of North Carolina's First Flight Centennial Commission, and the North Carolina Department of Transportation; and the support of many organizations, such as the Dare County Tourist Bureau, the Outer Banks Chamber of Commerce, and the First Flight Society.

As the Wright brothers represented the forefront of technological progress at the turn of the 20th Century, so too would the National Park Service employ "state-of-the-art" advances to address, in part, fee collection, interpretation, and visitor circulation. Because the prospect of adding personnel to the memorial's staff would be slim, efforts would go forward to provide alternatives to labor-intensive services and activities. The National Park Service would augment its

Volunteer-in-the-Park program to supplement personal services to the public. In addition, any new construction would be subject to standards of sustainable design to accommodate unanticipated changes in function and use.

Entrance and Parking

Visitors travelling southbound would arrive at the memorial using an enhanced entrance off U.S. 158. To ease visitor entrance into the memorial the National Park Service would coordinate with the North Carolina Department of Transportation to construct a designated left turn lane into the 15.69-acre tract. A deceleration lane along northbound U.S. 158 would alleviate vehicle arrival from that direction. Signs and warnings would caution visitors to slow down and use the deceleration and turn lanes to enter the memorial. The length of the deceleration lane would allow adequate room for many vehicles to slow and wait (or stack) to enter the memorial. Construction of the deceleration lane would necessitate the relocation of utilities, the ditch line, and culverts, and perhaps the redirection of local traffic. The National Park Service would seek the assistance of the town of Kill Devil Hills and the North Carolina Department of Transportation to close Prospect Avenue which links U.S. 158 and North Carolina 12.

After entering the 15.69-acre tract and passing through a fee collection plaza, vehicles would park in the one of the 225 slots adjacent to the visitor/administrative facility. Approximately ten per cent of the spaces would be dedicated to oversized vehicles and busses. To facilitate access into and out of the complex, the parking area would be located near the west side of the 15.69-acre tract. The visitor/administrative facility would be closer to the beach side. To improve traffic flow during extreme weather conditions and because of the increased numbers of senior visitors, the parking area would feature a designated drop-off and pick up area. Vehicles would exit the park northbound onto U.S. 158; a dedicated right turn lane would facilitate traffic flow and reduce congestion.

Fee Collection

The National Park Service would work closely with the local community and organizations to publicize the fee system at the memorial. Visitors would be made aware of the collection system prior to entering the park. Nevertheless, strategically placed signs would remind visitors of the fee collection system.

Under Alternative 2B, the northbound deceleration (or stacking) lane and the southbound dedicated turn lane would permit the National Park Service to collect fees as vehicles entered the memorial instead of collecting the fee while exiting. Southbound vehicles would use the deceleration lane and stack accordingly. Traffic signals would be calibrated and sufficient stacking space allotted to prevent congestion between northbound and southbound entering vehicles. A fee collection plaza (3 lanes) consisting of 3 booths would hasten visitor entrance into the memorial and would accommodate all sizes and types of vehicles. Space would be available to deal with disabled vehicles.

The National Park Service, by instituting an automated fee collection system that uses bank/credit cards, may eliminate the need to use currency to enter the park. Most transactions would be bank card based and automated. One booth would accommodate oversized vehicles and the small number of memorial visitors requiring a cash transaction. The visitors' fee would include transportation on the shuttle to the memorial.

Visitor Use

To accommodate the demands generated by the centennial of flight and the 21st Century, the National Park Service in cooperation with the North Carolina First Flight Commission would construct a new visitor/administrative facility. The facility would be designed to provide information and inspiration about the achievements of the Wright brothers. Various media would be employed to convey the story of

Wilbur and Orville Wright. The Visitor Center would serve as the backdrop to encourage visitors to learn more about the achievements of the Wright brothers, to venture out to the area where man first successfully lifted into the sky, and to ascend the hill where Wilbur and Orville conducted many glider experiments and where the country memorialized the brothers. The existing Visitor Center and parking area would be removed, the area grubbed and revegetated. Utilities would be upgraded and directed to the new facility. The removal of the Visitor Center and the construction of a new facility would also necessitate an examination of the park's drainage system.

The visitor area of the facility would consist of 12,000 to 15,000 square feet. Interpretive zones would include an audio-visual area featuring a 20 to 22-minute state-of-the-art production to inspire visitors and a series of 8 to 10-minute specialized features; a First Flight auditorium that would house the replica Wright Flyer and serve as the venue for the ranger talk; exhibit areas to house static information about the Wright brothers triumphs; high tech exhibit areas employing the latest in high technology interactive media catering to group activities; a glider room featuring one or more Wright gliders; an information and orientation area; a sales area; and rest rooms.

Transition areas would define the visitors introduction to and exit from the Visitor Center. From the parking area to the door of the Visitor Center, visitors would encounter symbols of flight, identified by historical milestones and images. Once in the structure, images of the Wright brothers would accompany visitors to the core of the building. Following their journey through the facility, visitors could stop at the third transition area, a trailhead, located inside or outdoors. Here visitors would decide what to do or where to go next: board the shuttle to the memorial grounds; revisit an area in the Visitor Center; or depart. Information in this area would assist visitors make an informed decision.

Visitors entering the facility would encounter an orientation area. Here, National Park Service personnel and volunteers would provide information to visitors; monitors, touch screens, and printed material would inform visitors to the amenities and events at the site.

To ensure that visitors receive a reasonable opportunity to experience the audiovisual production or the First Flight auditorium presentation, visitors would be advised to reserve a space for these attractions. The National Park Service would work with the Dare County Tourist Bureau and Outer Banks Chamber of Commerce to establish a reservation system so that visitors could plan their trip. Information about the memorial's policy would be included in a number of sources at the local, State, and national levels.

Reservations could be made off premises or at the park. Requiring a reservation or "ticket" to these attractions would also limit crowding and reduce the potential for placing a strain on the facilities and the park's cultural and natural resources.

The audiovisual area would feature a film (perhaps a mini-IMAX) of approximately 20 to 22 minutes in length to complement the ranger talk in the First Flight auditorium. Specialized features (8 to 10 minutes in length) on various aspects of the Wright brothers story would also be available in this area. This space would accommodate approximately 200 visitors.

Continuing a long-established tradition, the First Flight auditorium talk would feature the inspirational story of triumph and achievement of the Wright brothers. Visitors would be able to talk with park staff with the replica Wright flyer as the backdrop. To promote maximum contact and comprehension at this presentation, the audience would be limited to 200 visitors. Consideration would be given to shortening the talk to approximately 20 minutes.

As Wilbur and Orville Wright successfully explored the limits of technology in the early

20th Century, the National Park Service, in one area of the Visitor Center, would employ high tech methods to relate the Wright brothers story. Monitors, computers, and other types of interactive or audiovisual media would draw various age groups to this area. In order to avoid having an individual monopolize the various stations and exhibits, most stations would be designed to accommodate group activities. The majority of visitors would have the opportunity to experience these exhibits and circulate throughout the Visitor Center. The National Park Service would solicit the expertise of software and hardware manufacturers to assist in the development and support of the technology for these exhibits.

The National Park Service would complement its high tech exhibits with areas devoted to artifacts, story boards, panels, dioramas, or photographs. These exhibits would explain dramatically and accurately the saga of the Wright brothers achievements and be designed to inform visitors representing many age and interest levels.²

The messages conveyed at Wright Brothers National Memorial culminate with the events of December 17, 1903, and the effects of the Wright achievements on humankind. The park can relate only a portion of this inspirational story. Another National Park System unit, the Dayton Aviation Heritage National Historical Park, complements and broadens the story of the Wright brothers. To enhance the interpretive programs at both sites, the National Park Service would establish a video link between Kill Devil Hills and Dayton. The parks would cooperate with the local school districts to develop programs and educational materials to supplement the on-site and video visits. Special programs, such as First Flight auditorium talks or commemorative celebrations, would be linked to Dayton. Similar types of special events or Wright-related educational programs would be broadcast to Kill Devil Hills. Educational programs could be linked directly to the two sites or to schools in North Carolina and Ohio.

The Eastern National Park and Monument Association outlet would be located in an area near the facility's exit. This layout would lessen crowding in the orientation area and promote a smooth flow of visitor movement through the facility.

By incorporating elements of sustainable design, the facility would accommodate changes in use. Movable interior walls to accommodate large numbers of visitors for commemorative events or special exhibitions, flexible mechanical systems (for example, the ability to move easily HVAC ducts and electrical conduits), alternative energy sources, and the flexibility to expand without compromising the integrity of the building would all be incorporated. Rest rooms would be located on the exterior of the building and incorporate sensible design ratios for male and female visitors. Rest rooms would be designed to be cleaned or a portion closed without disrupting the entire operation.

Because the Visitor Center would serve the interpretive and informational needs of the visitor, interpretive planning documents must guide the design of the facility. Media planners must work closely with the architects to ensure that visitors enjoy a safe and enriching experience. This experience would link the Visitor Center with the memorial's landscape.

This facility would also lodge the administrative functions of the National Park Service which would comprise nearly one-quarter of the total area (approximately 5,000 square feet). The space would be devoted to a number of functions including staff offices, a staff rest room, a staff break room, training and conference area, a storage area large enough to hold chairs used for commemorative events, an Eastern National Park and Monument Association office and storage area, and space for the mechanical systems.

In addition, the administrative area would house a First Flight Society plaza. Primarily for use by the park's cooperating association, the First Flight Society, the area would lodge an office,

conference room, and a space to function as a library, reference room, and display area available to the public. Scholars and students wanting to conduct research on the Wright brothers would find this area particularly enriching. Portraits depicting recipients of the society's annual award would be displayed here.

Visitor Circulation

Although visitors would gain insight into the Wright brothers achievements at the Visitor Center, the National Park Service would encourage visitors to explore the grounds which beheld the first flight. True, much of the area has been manipulated in order to stabilize the landscape, but it is key to visit the site of the first powered controlled flights or scale the hill the site of numerous glider experiments. This message would be introduced through brochures, films, videos, and exhibits and reinforced through personal communication during the First Flight auditorium talk and by park personnel.

Visitors would board the shuttle in the parking area, cross U.S. 158, and enter the grounds of the memorial. Shuttles would run on a regular schedule year round.

The National Park Service would design the shuttles to transport approximately 75 passengers per trip. Three shuttle units would be needed to accommodate the projected number of visitors which would be managed through the reservation system. Each shuttle would make about 3 trips hourly during the peak use season. The equipment could be owned by the National Park Service or a concessionaire. The shuttle would be stored at the park's maintenance facility.

The first designated stop would bring visitors to a point where they would have easy access to the First Flight area. Visitors may elect to disembark or continue riding along the memorial's roads. The second designated stop would be located at the intersection of the trail leading from the First Flight area with the road circling Kill Devil Hill. A third stop would allow easy

access for visitors to the First Flight concessionaire and airstrip. Riders could embark or disembark the shuttle at any of the three locations before returning to the parking area on the east side of U.S. 158.

Visitors disembarking at the first shuttle stop would follow stabilized paths to the commemorative area where they would learn more about the Wright brothers experiences leading to the seminal flights in December 1903. The stabilized surface of the trail would allow strollers, carriages, and wheelchairs to maneuver easily. Culverts would replace sections of the drainage ditch on the east side of the memorial to allow the National Park Service to construct connector trails from the commemorative area to the shuttle stop.

Visitors would arrive at the exhibits that represent the 1902-1903 quarters and the 1903 hangar. The Wright brothers lived, toiled, and argued over the principles of flight in the original buildings. The messages and lighting in those exhibits would be upgraded so that visitors would better understand the living and working conditions on the Outer Banks in the fall and early winter of 1903. Visitors would also visit the site where John T. Daniel photographed the remarkable scene of the first powered controlled flight. The National Park Service would prepare a Wayside Exhibit Plan to direct the interpretation of these exhibits and other key areas of the park.

From here visitors would venture along another stabilized trail that follows the path of the first flights of December 17, 1903, the extent of each flight signified by a boulder. A 60-foot long steel monorail, a replica of the starting rail which stabilized the flyer during takeoff, parallels this path. Referred to as the "Junction Railroad" by the Wright brothers, this rail originally consisted of four 15-foot two-by-fours.

Turning toward the southwest, visitors would continue their tour from the First Flight area to the base of Kill Devil Hill, again along a stabi-

lized path. This path follows a wide path which was part of memorial's design in the late 1920s and early 1930s.

From the base of the hill (the site of the second shuttle stop), visitors would decide whether they would want to ascend to the pylon perched approximately 90 feet above the hill's base. A series of paths wind up the hill, gradually reaching the base of the pylon. From here visitors would gain a perspective of the surrounding landscape while contemplating the achievements of Wilbur and Orville Wright. Following their descent from the hill, visitors would follow paths to the shuttle stop and return to the Visitor Center or take in an airplane ride at the First Flight Airstrip.

Returning to the Visitor Center visitors would be faced with a variety of choices including: 1) completing their visit and leaving; 2) reentering the facility and obtaining or purchasing additional information; or 3) returning to the memorial and taking a ride in the concessionaire-operated airplane.

Pylon

Visitors would be encouraged to climb Kill Devil Hill to the base of the pylon, however access to the structure would be limited to the ground floor. The National Park Service would install gates across the stairways to prohibit visitor access up the stairs. Only on special occasions would park personnel lead a limited number of visitors up the narrow, twisting stairs to the top.

Material deterioration and mechanical problems have beset the pylon over the past several years. Water has seeped through the structure and the electrical system is outmoded. An Historic Resource Study undertaken by the National Park Service would recommend specific actions to correct these problems. However, to restore the pylon to its stature of a bygone era, the beacon atop the structure would be reilluminated.

Screening and Removal of Vegetation

In particular instances the visitor experience would be enhanced through the selective removal or addition of vegetation. By planting, thinning, or removing vegetation, the National Park Service would direct and enhance views within and outside the memorial.

Visitors looking toward and beyond the First Flight area glimpse single-engine aircraft taking-off and landing on a regular basis. Because the vegetative line separating the memorial's open area from the First Flight Airstrip is so thick, visitors seldom see more than the touch down or takeoff. Thinning or removing some of this vegetation adjacent to the airstrip (see drawing Alternative 2B) would enable visitors to observe the small aircraft, thus, perhaps, broadening their interest and understanding of the story of flight. After experiencing the Flight Room auditorium talk and observing the exhibits, visitors would welcome a clear view of these aircraft soaring into or descending from the sky.

Another type of visitor experience would be enhanced by selective removal of vegetation. The illuminated pylon serves a handsome monument to the Wright brothers, especially during nighttime hours. Vehicles travelling north and south along U.S. 158, in most instances, gain a clear view of the pylon. However, some vegetation has grown so high on park property along the highway to obscure this view. The National Park Service would periodically thin or trim this vegetation and work with other property owners along U.S. 158 to ensure that this view would be maintained.

On the other hand, some selective planting of vegetative screens would help seal visitors within the confines of the memorial and reduce the impact of adjacent development on the visitor's experience. This situation is apparent at the park's entrance. Although adjacent land uses could not entirely be screened from visitors, the addition of vegetation at this location would help soften distracting sights and sounds and focus visitors attention on the Wright brothers story.

Vegetation management guidelines would also be based on reducing staff-hours required for mowing, trimming, and maintenance. Specific action would include prescribed mowing times or seasons, the use of herbicides that release or that are selective for desirable plant species, and altering perceptions of what the site should look like (for example taller grasses and less under-story).

Additional Facility Development or Removal

Anticipating increases in small plane use of the First Flight Airstrip, the National Park Service would expand the capacity of the vehicle and plane parking areas serving the airstrip. The plane parking area would expand by a factor of 1.25, while the vehicle parking area would expand two to two-and-one-half times its present size. These actions would entail additional paving and the removal of a small amount of vegetation.

The National Park Service would replace and relocate the inadequate First Flight concession structure. The new structure would be located nearby and provide sanitary facilities and some shelter from the sun and rain. Enhanced signing along the circular road would direct visitors to this location. The vacated site would be cleared, grubbed, and replanted with native vegetation.

Several structures serve or have served as employee housing over the years. The Cape Hatteras Group superintendent occupied a 1930s-brick structure located on the south portion of the memorial, off Colington Road, near the maintenance area. A structural assessment of the building questions whether it could be restored or adapted for commercial or another use cost-effectively. Rather than keeping this structure in a decrepit state on the landscape, the National Park Service would remove the building, obliterate the surrounding impervious surfaces (roads and walkways), and restore the vacant land with native vegetation.

In similar fashion, the need to provide employee housing at the memorial has waned. The community offers sufficient numbers of housing. Currently, several employees occupy trailers located in a housing compound on the west side of the memorial off Colington Road. The National Park Service would phase out employee housing, remove the trailers and associated development, and replant the area with native vegetation or consider this site for the location of a new maintenance area.

In an effort to remove non-visitor related structures from the memorial's landscape and reduce the disruption to the park's natural and cultural resources, the National Park Service would relocate its maintenance facility from its current location (off Colington Road and south of Kill Devil Hill). The physical facilities are barely adequate to serve the park and have been constructed in a piecemeal manner. The National Park Service would also remove the asphalt road linking the superintendent's house and the maintenance area with the circular drive and Colington Road. The disturbed area would be grubbed and stabilized with native vegetation. Maintenance vehicles could enter the park from Colington Road via the First Flight Airstrip road.

Three possible locations, all within the park's boundaries but away from the visitor, would qualify to accommodate the new maintenance area. Site A currently is the site for employee housing which would be removed. Site B, located across the road from the housing compound, served as the location for a Civilian Conservation Corps camp in the 1930s. Site C,

located west of the "emergency clear zone," is another disturbed area. All three sites have been disturbed within the past 50 to 60 years. Selection of a preferred site would take the following criteria into consideration: 1) remote location, away from visitor experience areas; 2) minimal disturbance to prime cultural and natural resources; 3) sufficient area, approximately two acres; 4) safe road entrance; and 5) to minimize costs, take advantage of existing infrastructure.

Park personnel, deliveries, and other official business would use the administrative access off Colington Road to enter the park. Shuttles and emergency vehicles only would be permitted to use the U.S. 158 entrance.

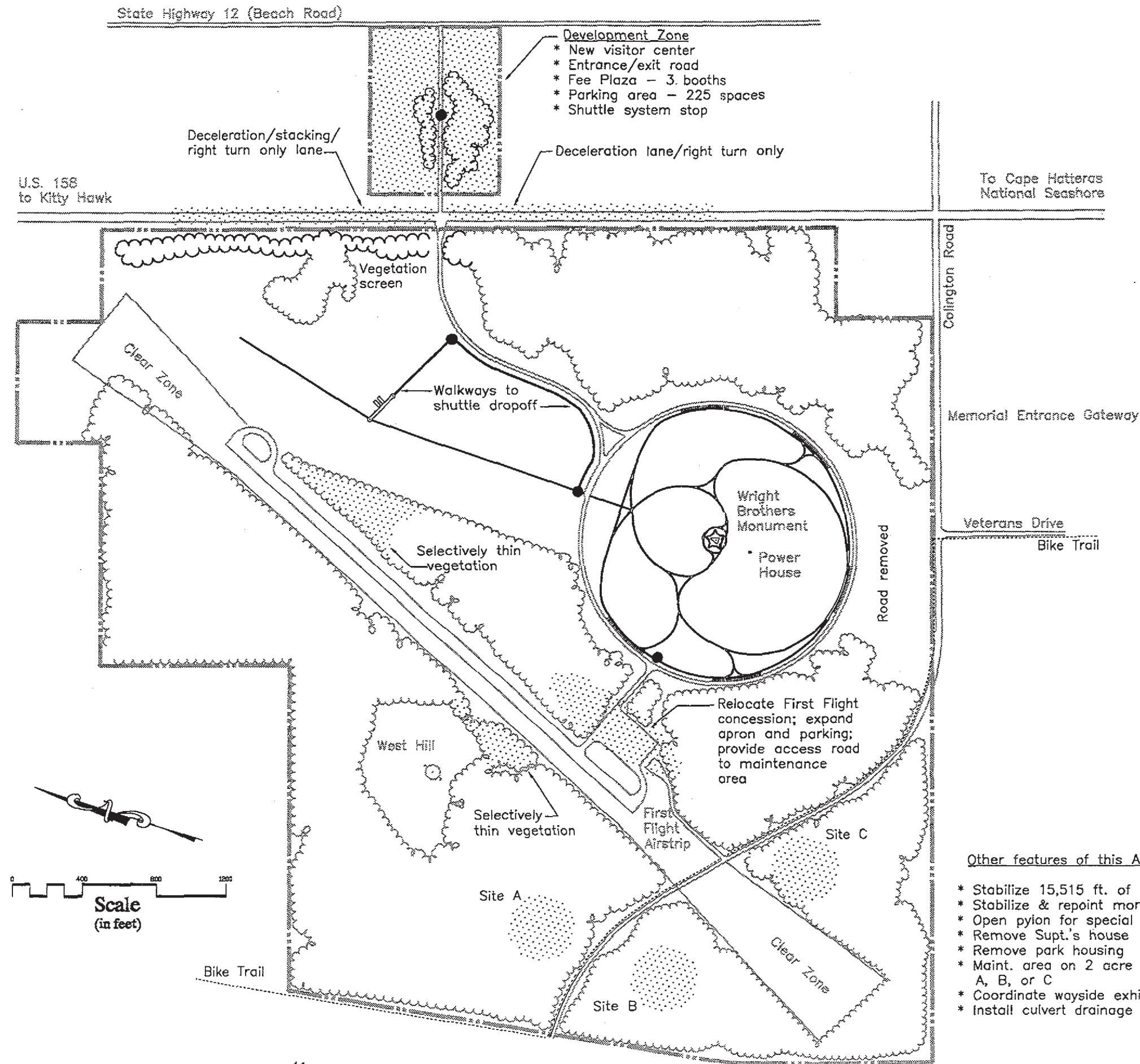
The town of Kill Devil Hills has constructed on park property a portion of a bikeway to connect several residential subdivisions with the First Flight Middle School. Under this alternative, the National Park Service would permit the town to complete this project.

Costs and Staffing

Completing the developments outlined under Alternative 2B would cost \$26,906,000. Improvements associated with U.S. 158 including deceleration and acceleration lanes and the enhanced traffic signal system are not included. Local or State agencies would be responsible for these improvements. This alternative would require the services of a projectionist and a person skilled to maintain the high tech interpretive equipment. The park would consider adding staff members or contracting for these services.

²An abbreviated Comprehensive Interpretive Plan will accompany the final General Management Plan. It will outline, in detail, the use and placement of interpretive media and staff including museum exhibits, personal services, waysides, publications, audiovisual media, historic furnishings, and architectural and interior design elements. It will also outline a process for developing the various interpretive media plans.

Figure 6.



Wright Brothers National Memorial

Kill Devil Hills, North Carolina

DRAFT Alternative 2B

Construct a new visitor/administrative facility east of U.S. 158 on the 15.69-acre tract Provide year round shuttle service

Legend

- Property line
- ☁ Trees/shrubs
- Possible area for development
- Shuttle stop

Other features of this Alternative

- * Stabilize 15,515 ft. of trails
- * Stabilize & repoint monument
- * Open pylon for special events
- * Remove Supt.'s house
- * Remove park housing
- * Maint. area on 2 acre site at A, B, or C
- * Coordinate wayside exhibits
- * Install culvert drainage system

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ALTERNATIVE 2C: CONSTRUCT A NEW VISITOR/ADMINISTRATIVE FACILITY WEST OF U.S. 158/ENTRANCE OFF U.S. 158/PEAK USE SEASON PARKING ON 15.69-ACRE TRACT WITH A PEAK USE SEASON SHUTTLE SERVICE

Concept

A new visitor/administrative facility would be designed to inspire park visitors and relate the story of the Wright brothers (Figure 7). It would be located on the west side of U.S. 158. During the peak use season (June through Labor Day) visitors would board a shuttle at the parking area located on the 15.69-acre tract, cross U.S. 158, and ride to the Visitor Center. During the rest of the year, visitors would park in the area adjacent to the Visitor Center.

In Alternative 2C, the National Park Service would prepare for the events culminating with the centennial of flight on December 17, 1903. In order to meet the demands associated with this international event and to accommodate the needs of resource protection and visitor services of the 21st Century, the National Park Service would embark on an ambitious program. This program would, to a large extent, depend upon the assistance of the town of Kill Devil Hills, the State of North Carolina's First Flight Centennial Commission, and the North Carolina Department of Transportation; and the support of many organizations, such as the Dare County Tourist Bureau, the Outer Banks Chamber of Commerce, and the First Flight Society.

As the Wright brothers represented the forefront of technological progress at the turn of the 20th Century, so too would the National Park Service employ "state-of-the-art" advances to address, in

part, fee collection, interpretation, and visitor circulation. Because the prospect of adding personnel to the memorial's staff would be slim, efforts would go forward to provide alternatives to labor-intensive services and activities. The National Park Service would augment its Volunteer-in-the-Park program to supplement personal services to the public. In addition, any new construction would be subject to standards of sustainable design to accommodate unanticipated changes in function and use.

Entrance and Parking

During peak use season, visitors travelling southbound would arrive at the memorial using an enhanced entrance off U.S. 158. To ease visitor entrance into the memorial the National Park Service would coordinate with the North Carolina Department of Transportation to construct a designated left turn lane into the 15.69-acre tract. A deceleration lane along northbound U.S. 158 would alleviate vehicle arrival from that direction. Signs and warnings would caution visitors to slow down and use the deceleration and turn lanes to enter the memorial. An enhanced traffic signal system would facilitate vehicular traffic into the parking areas and allow for the proposed peak use season shuttle to cross U.S. 158 safely. The length of the deceleration lane would allow adequate room for many vehicles to slow and wait (or stack) to enter the 15.69-acre tract. Construction of the deceleration lane would necessitate the relocation of utilities, the ditch line, and culverts, and perhaps the redirection of local traffic. The National Park Service would seek the assistance of the town of Kill Devil Hills and the North Carolina Department of Transportation to close Prospect Avenue which links U.S. 158 and North Carolina 12.

After entering the 15.69-acre tract, vehicles would park in the one of the 225 slots. Approximately ten per cent of the spaces would be dedicated to oversized vehicles and busses. To facilitate access into and out of the complex, the parking areas would be located near the west side of the 15.69-acre tract. Vehicles would exit

the park northbound onto U.S. 158; a dedicated right turn lane would facilitate traffic flow and reduce congestion.

From September through May, vehicles would enter the memorial off U.S. 158 using a southbound deceleration/stacking lane. For vehicles travelling northbound, an enhanced traffic signal system and dedicated turn lane would alleviate their entrance. Turns would be prohibited during the peak use season. Vehicles would park in the 125-space area adjacent to the visitor/administrative facility.

In cooperation with the town of Kill Devil Hills, the National Park Service would permit beach parking on the east side of the 15.69-acre tract. Access to this parking area would come from North Carolina 12 only. A memorandum of understanding between the town and the National Park Service would outline the responsibilities of each party.

Fee Collection

The National Park Service would work closely with the local community and organizations to publicize the fee system at the memorial. Visitors would be made aware of the collection system prior to entering the park. Nevertheless, strategically placed signs on U.S. 158 would remind visitors of the fee collection system.

During peak use season under Alternative 2C, visitors would pay their fees at the parking area on the 15.69-acre tract. The National Park Service would install automated units to accept bank or credit cards or cash.

From September through May, the National Park Service would collect fees at the plaza located near the entrance of the park. The plaza would consist of 2 booths, one to accept automated transactions, the other designed to accommodate oversized vehicles and cash transactions. Space would be available to deal with disabled vehicles.

Visitor Use

To accommodate the demands generated by the centennial of flight and the 21st Century, the National Park Service in cooperation with the North Carolina First Flight Commission would construct a new visitor/administrative facility. The facility would be designed to provide information and inspiration about the achievements of the Wright brothers. Various media would be employed to convey the story of Wilbur and Orville Wright. The Visitor Center would serve as the backdrop to encourage visitors to learn more about the achievements of the Wright brothers, to venture out to the area where man first successfully lifted into the sky, and to ascend the hill where Wilbur and Orville conducted many glider experiments and where the country memorialized the brothers. The existing Visitor Center and parking area would be removed, the area grubbed and revegetated. Utilities would be upgraded and directed to the new facility. The removal of the Visitor Center and the construction of a new facility would also necessitate an examination of the park's drainage system.

To take advantage of the resources on site, the National Park Service would locate this facility at a point approximately equidistant from the First Flight area and the pylon. Here, visitors would be able to contemplate the site where man first successfully ascended skyward in a heavier-than-air, controlled, powered flight, and the triangular-shaped monument erected in honor of the brothers. The Visitor Center would sit at the vertex of the equidistant triangle.

The visitor area of the facility would consist of 12,000 to 15,000 square feet. Interpretive zones would include an audiovisual area featuring a 20 to 22-minute state-of-the-art production to inspire visitors and a series of 8 to 10-minute specialized features; a First Flight auditorium that would house the replica Wright Flyer and serve as the venue for the ranger talk; exhibit areas to house static information about the Wright brothers triumphs; high tech exhibit areas employing the latest in high technology

interactive media catering to group activities; a glider room featuring one or more Wright gliders; an information and orientation area; a sales area; and rest rooms.

Transition areas would define the visitors introduction to and exit from the Visitor Center. From the parking area to the door of the Visitor Center, visitors would encounter symbols of flight, identified by historical milestones and images. Once in the structure, images of the Wright brothers would accompany visitors to the core of the building. Following their journey through the facility, visitors could stop at the third transition area, a trailhead, located inside or outdoors. Here visitors would decide where to go next: to the First Flight site, to the pylon, to the sales area, return to an exhibit, or perhaps depart the site. Information in this area would assist visitors make an informed decision.

Visitors emerging from the second transition area would encounter an orientation area. Here, National Park Service personnel and volunteers would provide information to visitors; monitors, touch screens, and printed material would inform visitors to the amenities and events at the site.

To ensure that visitors receive a reasonable opportunity to experience the audiovisual production or the First Flight auditorium presentation, the National Park Service would advise them to reserve a space for these attractions. The National Park Service would work with the Dare County Tourist Bureau and Outer Banks Chamber of Commerce to establish a reservation system so that visitors could plan their trip. Information about the memorial's policy would be included in a number of sources at the local, State, and national levels. Reservations could be made off premises or at the park. Requiring a reservation or "ticket" to these attractions would also limit crowding and reduce the potential for placing a strain on the facilities and the park's cultural and natural resources.

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22 minutes in length to complement the ranger talk in the First Flight auditorium. Specialized features (8 to 10 minutes in length) on various aspects of the Wright brothers story would also be available in this area. This space would accommodate approximately 200 visitors.

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The National Park Service would complement its high tech exhibits with areas devoted to artifacts, story boards, panels, dioramas, or photographs. These exhibits would explain dramatically and accurately the saga of the Wright brothers achievements and be designed to inform visitors representing many age and interest levels.³

The messages conveyed at Wright Brothers National Memorial culminate with the events of December 17, 1903, and the effects of the

Wright achievements on humankind. The park can relate only a portion of this inspirational story. Another National Park System unit, the Dayton Aviation Heritage National Historical Park in Dayton, Ohio, complements and broadens the story of the Wright brothers. To enhance the interpretive programs at both sites, the National Park Service would establish a video link between Kill Devil Hills and Dayton. The parks would cooperate with the local school districts to develop programs and educational materials to supplement the site and video visits. Special programs, such as First Flight room talks or commemorative celebrations, would be linked to Dayton. Similar types of special events or Wright-related educational programs would be broadcast to Kill Devil Hills. Educational programs could be linked directly to the two sites or to schools in North Carolina and Ohio.

The Eastern National Park and Monument Association outlet would be located in an area near the facility's exit. This layout would lessen crowding in the orientation area and promote a smooth flow of visitor movement through the facility.

By incorporating elements of sustainable design, the facility would change in use. Movable interior walls to accommodate large numbers of visitors for commemorative events or special exhibitions, flexible mechanical systems (for example, the ability to move easily HVAC ducts and electrical conduits), alternative energy sources, and the flexibility to expand without compromising the integrity of the building would all be incorporated. Rest room entrances would be located on the exterior of the building and incorporate sensible design ratios for male and female visitors. Rest rooms would be designed to be cleaned or a portion closed without disrupting the entire operation.

Because the Visitor Center would serve the interpretive and informational needs of the visitor, interpretive planning documents must guide the design of the facility. Media planners must work closely with the architects to ensure that visitors enjoy a safe and enriching experi-

ence. This experience would link the Visitor Center with the memorial's landscape.

This facility would also lodge the administrative functions of the National Park Service which would comprise nearly one-quarter of the total area (approximately 5,000 square feet). The space would be devoted to a number of functions including staff offices, a staff rest room, a staff break room, training and conference area, a storage area large enough to hold chairs used for commemorative events, an Eastern National Park and Monument Association office and storage area, and space for the mechanical systems.

In addition, the administrative area would house a First Flight Society plaza. Primarily for use by the park's cooperating association, the first Flight Society, the area would lodge an office, conference room, and a space to function as a library, reference room, and display area that would be available to the public. Scholars and students wanting to conduct research on the Wright brothers would find this area particularly enriching. Portraits depicting recipients of the society's annual award would be displayed here.

Visitor Circulation

Although visitors would gain valuable insight into the Wright brothers achievements at the Visitor Center, the National Park Service would encourage visitors to explore the grounds which beheld the first flight. Much of the area has been manipulated in order to stabilize the landscape, but it is key to visit the site of the first powered controlled flights or scale the hill, the site of numerous glider experiments. This message would be introduced through brochures, films, videos, and exhibits and reinforced through personal communication during the First Flight talk and by park personnel.

During the peak use season, visitors would board the shuttle in the parking area, cross U.S. 158, enter the grounds of the memorial, and disembark at the Visitor Center.

The National Park Service would design the shuttles to transport approximately 75 passengers per trip. Three shuttle units would be needed to accommodate the projected number of visitors which would be managed through the reservation system. Each shuttle would make about 3 trips per hour during the peak use season. The equipment could be owned by the National Park Service or a concessionaire. The shuttle would be stored at the park's maintenance facility.

Following their Visitor Center experience, visitors would reboard the shuttle and travel to the first designated stop, a point where they would have easy access to the First Flight area. Visitors may elect to disembark or continue riding along the memorial's roads. The second designated stop would be located at the intersection of the trail leading from the First Flight area with the road circling Kill Devil Hill. A third stop would allow easy access for visitors to the First Flight concessionaire and airstrip. The National Park Service would permit riders to embark or disembark the shuttle at any of the three locations before returning to the Visitor Center or the parking area on the east side of U.S. 158. Some visitors may wish to explore the memorial on foot and avoid using the shuttle. Others would combine a walking tour with a ride on the shuttle. In all instances, visitors would ride the shuttle back to the parking area on the east side of U.S. 158.

From September through May when the shuttle would not be operating, the National Park Service would permit vehicles to travel on the memorial's roads. Thus, visitors would tour the area by foot or in their vehicles. Often, weather dictates the choice of transportation and how far visitors venture on foot.

Visitors disembarking at the first shuttle stop would follow stabilized paths to the commemorative area where they would learn more about the Wright brothers experiences leading to the seminal flights in December 1903. The stabilized surface of the trail would allow strollers, carriages, and wheelchairs to maneuver easily.

Culverts would replace sections of the drainage ditch on the east side of the memorial to allow the National Park Service to construct connector trails from the commemorative area to the Visitor Center.

Visitors would arrive at the exhibits that represent the 1902-1903 quarters and the 1903 hangar. The Wright brothers lived, toiled, and argued over the principles of flight in the original buildings. The messages and lighting in those exhibits would be upgraded so that visitors would better understand the living and working conditions on the Outer Banks in the fall and early winter of 1903. Visitors would also visit the site where John T. Daniel photographed the remarkable scene of the first powered controlled flight. The National Park Service would prepare a Wayside Exhibit Plan to direct the interpretation of these exhibits and other key areas in the park.

From here visitors would venture along another stabilized trail that follows the path of the first flights of December 17, 1903, the extent of each flight signified by a boulder. A 60-foot long steel monorail, a replica of the starting rail which stabilized the flyer during takeoff, parallels this path. Referred to as the "Junction Railroad" by the Wright brothers, this rail originally consisted of four 15-foot two-by-fours.

Turning back southwest, visitors would continue their tour from the First Flight area to the base of Kill Devil Hill, again along a stabilized path. This path follows a wide road which was part of memorial's design in the late 1920s and early 1930s.

From the base of the hill (the site of the second shuttle stop), visitors would decide whether they would want to ascend to the pylon perched approximately 90 feet above the hill's base. A series of paths wind up the hill, gradually reaching the base of the pylon. From here visitors would gain a perspective of the surrounding landscape while contemplating the achievements of Wilbur and Orville Wright.

Following their descent from the hill, visitors would follow another path to the Visitor Center or perhaps descend to the west (site of the third shuttle stop) and take in an airplane ride at the First Flight Airstrip.

Returning to the Visitor Center visitors would encounter a variety of choices including: 1) completing their visit and leaving via the shuttle; 2) reentering the facility and obtaining or purchasing additional information; or 3) returning to the memorial grounds and taking a ride in the concessionaire-operated airplane.

Pylon

Visitors would be encouraged to climb Kill Devil Hill to the base of the pylon, however access to the structure would be limited to the ground floor. The National Park Service would install gates across the stairways to prohibit visitor access up the stairs. Only on special occasions would park personnel lead a limited number of visitors up the narrow, twisting stairs to the top.

Material deterioration and mechanical problems have beset the pylon over the past several years. Water has seeped through the structure and the electrical system is outmoded. An Historic Resource Study undertaken by the National Park Service would recommend specific actions to correct these problems. However, to restore the pylon to its stature of a bygone era, the beacon atop the structure would be reilluminated.

Screening and Removal of Vegetation

In particular instances the visitor experience would be enhanced through the selective removal or addition of vegetation. By planting, thinning, or removing vegetation, the National Park Service would direct and enhance views within and outside the memorial.

Visitors looking toward and beyond the First Flight area glimpse single-engine aircraft taking-off and landing on a regular basis. Because the vegetative line separating the memorial's open

area from the First Flight Airstrip is so thick, visitors seldom see more than the touch down or takeoff. Thinning or removing some of this vegetation adjacent to the airstrip (see drawing Alternative 2C) would enable visitors to observe the small aircraft, thus, perhaps, broadening their interest and understanding of the story of flight. After experiencing the First Flight auditorium talk and observing the exhibits, visitors would welcome a clear view of these aircraft soaring into or descending from the sky.

Another type of visitor experience would be enhanced by selective removal of vegetation. The illuminated pylon serves a handsome monument to the Wright brothers, especially during nighttime hours. Vehicles travelling north and south along U.S. 158, in most instances, gain a clear view of the pylon. However, some vegetation has grown so high on park property along the highway to obscure this view. The National Park Service would periodically thin or trim this vegetation and work with other property owners along U.S. 158 to ensure that this view would be maintained.

On the other hand, some selective planting of vegetative screens would help seal visitors within the confines of the memorial and reduce the impact of adjacent development on the visitor's experience. This situation is apparent at the park's entrance. Although adjacent land uses could not entirely be screened from visitors, the addition of vegetation at this location would help soften distracting sights and sounds and focus visitors attention on the Wright brothers story.

Vegetation management guidelines would also be based on reducing staff-hours required for mowing, trimming, and maintenance. Specific action would include prescribed mowing times or seasons, the use of herbicides that release or that are selective for desirable plant species, and altering perceptions of what the site should look like (e.g. taller grasses and less understory).

Additional Facility Development or Removal

Anticipating increases in small plane use of the First Flight Airstrip, the National Park Service would expand the capacity of the vehicle and plane parking areas serving the airstrip. The plane parking area would expand by a factor of 1.25, while the vehicle parking area would expand two to two-and-one-half times its present size. These actions would entail additional parking and the removal of a small amount of vegetation.

The National Park Service would replace and relocate the inadequate First Flight concession structure. The new structure would be located nearby and provide sanitary facilities and some shelter from the sun and rain. Enhanced signing along the circular road would direct visitors to this location. The vacated site would be cleared, grubbed, and replanted with native vegetation.

Several structures serve or have served as employee housing over the years. The Cape Hatteras Group superintendent occupied a 1930s-brick structure located on the south portion of the memorial, off Colington Road, near the maintenance area. A structural assessment of the building questions whether it could be restored or adapted for commercial or another use cost-effectively. Rather than keeping this structure in a decrepit state on the landscape, the National Park Service would remove the building, obliterate the surrounding impervious surfaces (roads and walkways), and restore the vacant land with native vegetation.

In similar fashion, the need to provide employee housing at the memorial has waned. The community offers sufficient numbers of adequate housing. Currently, several employees occupy trailers located in a housing compound on the west side of the memorial off Colington Road. The National Park Service would phase out employee housing, remove the structures and associated development, and replant the area with native vegetation or consider this site for the location of a new maintenance area.

In an effort to remove non-visitor related structures from the memorial's landscape and reduce the disruption to the park's natural and cultural resources, the National Park Service would relocate its maintenance facility from its current location (off Colington Road and south of Kill Devil Hill). The physical facilities are barely adequate to serve the park and have been constructed in a piecemeal manner. The National Park Service would also remove the asphalt road linking the superintendent's house and the maintenance area with the circular drive and Colington Road. The disturbed area would be grubbed and stabilized with native vegetation. Maintenance vehicles could enter the park from Colington Road via the First Flight Airstrip road.

Three possible locations, all within the park's boundaries but away from the visitor, would qualify to lodge the new maintenance area. Site A currently is the site for employee housing which would be removed. Site B, located across the road from the housing compound, served as the location for a Civilian Conservation Corps camp in the 1930s. Site C, located west of the "emergency clear zone," is another disturbed area. All three sites have been disturbed within the past 50 to 60 years. Selection of a preferred site would take the following criteria into consideration: 1) remote location, away from visitor experience areas; 2) minimal disturbance to prime cultural and natural resources; 3) sufficient area, approximately two acres; 4) safe road entrance; and 5) to minimize costs, take advantage of existing infrastructure.

The town of Kill Devil Hills has constructed on park property a portion of a bikeway to connect several residential subdivisions with the First Flight Middle School. Under this alternative, the National Park Service would permit the town to complete this project.

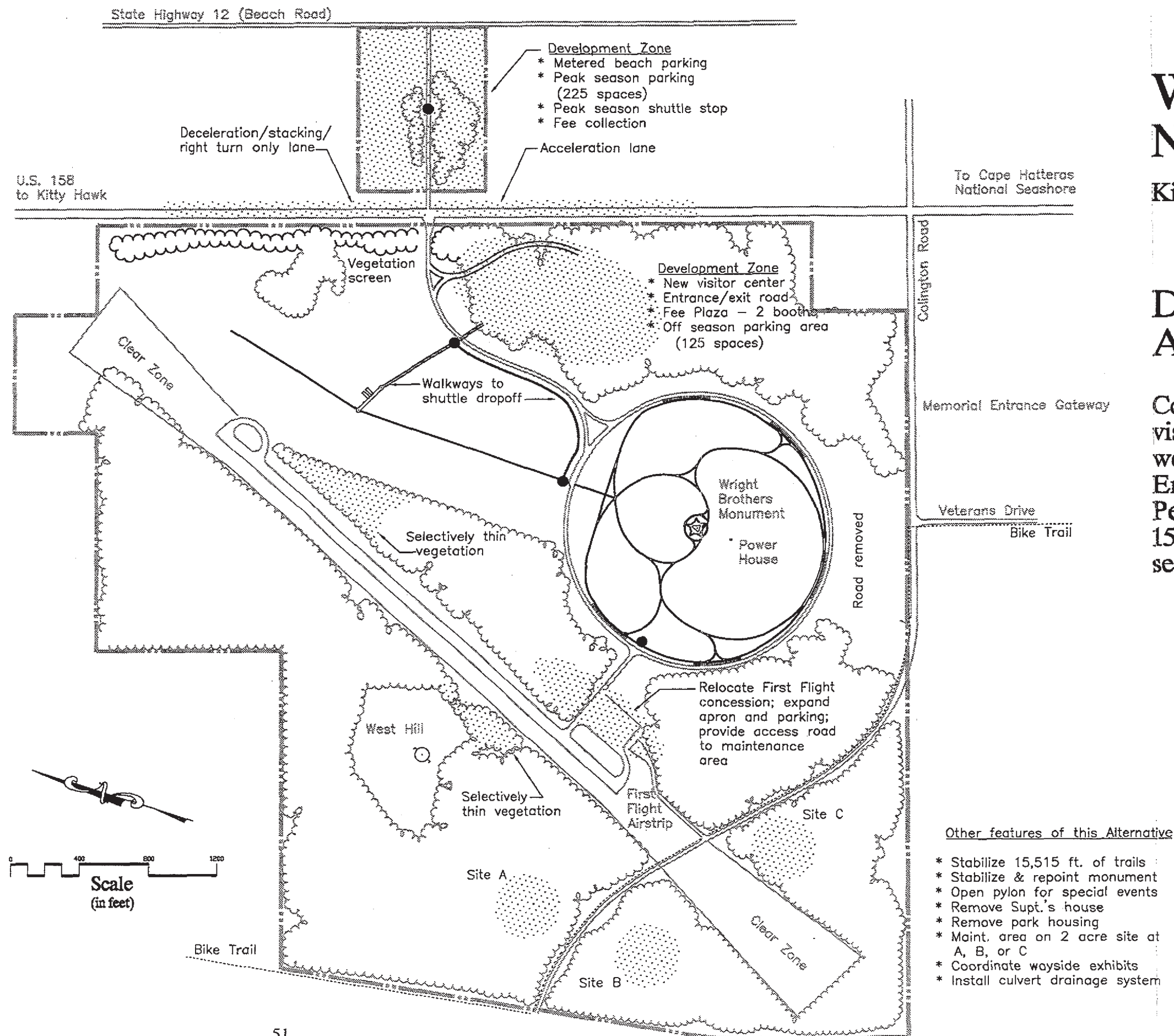
Park personnel, deliveries, and other official business would use the First Flight Airstrip road off Colington Road to enter the park during the peak use season. Shuttles and emergency vehicles only would be permitted to use the U.S. 158 entrance.

Costs and Staffing

Completing the developments outlined under Alternative 2C would cost \$27,227,600. Improvements associated with U.S. 158 including deceleration and acceleration lanes and the enhanced traffic signal system are not included. The town's beach parking is also not included. Local or State agencies would be responsible for these improvements. This alternative would require the services of a projectionist and a person skilled to maintain the high tech interpretive equipment. The park would consider adding staff members or contracting for these services.

³An abbreviated Comprehensive Interpretive Plan will accompany the final General Management Plan. It will outline, in detail, the use and placement of interpretive media and staff including museum exhibits, personal services, waysides, publications, audiovisual media, historic furnishings, and architectural and interior design elements. It will also outline a process for developing the various interpretive media plans.

Figure 7.



Wright Brothers National Memorial

Kill Devil Hills, North Carolina

DRAFT Alternative 2C

Construct a new visitor/administrative facility west of U.S. 158
Entrance off U.S. 158
Peak use season parking on 15.69-acre tract with a peak use season shuttle service

Legend

- Property line
- Trees/shrubs
- Possible area for development
- Shuttle stop

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ON MICROFILM

ALTERNATIVE 3A: CONSTRUCT A NEW VISITOR/ADMINISTRATIVE FACILITY WEST OF U.S. 158/ ENTRANCE AND EXIT OFF COLINGTON ROAD

Concept

The construction of a new visitor/administrative facility designed to inspire park visitors highlights this alternative (Figure 8). Reminiscent of the 1930s' design, visitors would again enter and exit the park from Colington Road. Thus visitors first impression of the park would be the view of Kill Devil Hill and the pylon. Visitors would encounter a parklike experience on their journey to the Visitor Center.

In Alternative 3A, the National Park Service would prepare for the events culminating with the centennial of flight on December 17, 1903. In order to meet the demands associated with this international event and to accommodate the needs of resource protection and visitor services of the 21st Century, the National Park Service would embark on an ambitious program. This ambitious program would, to a large extent, depend upon the assistance of the town of Kill Devil Hills, the State of North Carolina's First Flight Centennial Commission, and the North Carolina Department of Transportation; and the support of many organizations, such as the Dare County Tourist Bureau, the Outer Banks Chamber of Commerce, and the First Flight Society.

As the Wright brothers represented the forefront of technological progress at the turn of the 20th Century, so too would the National Park Service employ "state-of-the-art" advances to address, in part, fee collection, interpretation, and visitor circulation. Because the prospect of adding personnel to the memorial's staff would be slim, efforts would go forward to provide alternatives to labor-intensive services. The National Park Service would augment its Volunteer-in-the-Park

program to supplement personal services to the public. In addition, any new construction would be subject to standards of sustainable design to accommodate unanticipated changes in function and use.

Entrance and Parking

Visitors travelling southbound on U.S. 158 would turn right onto Colington Road; northbound vehicles would turn left. To ease visitor entrance into the memorial the National Park Service would coordinate with the North Carolina Department of Transportation to construct a deceleration lane along westbound Colington Road. Signs and warnings would caution visitors to slow down and use the deceleration lane to prepare to enter the memorial. The length of the lane would allow adequate room for many vehicles to decelerate and wait (or stack) to enter the memorial. Construction of the deceleration lane would necessitate the relocation of utilities, the ditch line, and culverts. The National Park Service would also cooperate with the North Carolina Department of Transportation and the town of Kill Devil Hills to enhance the traffic signals and intersection at: 1) U.S. 158 and Colington Road and 2) Colington Road and Veterans Drive (across from the new park entrance). The traffic signal at the intersection of U.S. 158 and Prospect Avenue would be removed to facilitate vehicle flow.

After entering the park and passing through the fee collection plaza, vehicles would park in the one of the 225 slots in the area accompanying the new visitor/administrative facility. Approximately ten per cent of the spaces would be dedicated to oversized vehicles and busses. To improve traffic flow during extreme weather conditions and because of the increased numbers of senior visitors, the parking area would feature a designated drop-off and pick up area. The parking area would be nestled between the Visitor Center and U.S. 158; a vegetative barrier would be maintained to screen the parking area and Visitor Center from U.S. 158. Vehicles would exit the park onto Colington Road after circling Kill Devil Hill. A portion of the

memorial's road system linking the U.S. 158 entrance with the road around Kill Devil Hill would be removed and the area grubbed and revegetated.

Fee Collection

The National Park Service would work closely with the local community and organizations to publicize the fee system at the memorial. Visitors would be made aware of the collection system prior to entering the park. Nevertheless, strategically placed signs would remind visitors of the fee collection system.

Under Alternative 3A, the deceleration (or stacking) lane would permit the National Park Service to collect fees as vehicles entered the park. Traffic signals would be calibrated and sufficient stacking space allotted to prevent congestion between westbound and eastbound entering vehicles (few vehicles would enter the park travelling eastbound on Colington Road). A fee collection plaza (3 lanes) consisting of 3 booths would hasten visitor entrance into the memorial and would accommodate all sizes and types of vehicles. A vegetative barrier would screen the fee collection plaza from the Visitor Center and the rest of the park.

The National Park Service, by instituting an automated fee collection system that uses bank/credit cards, may eliminate the need to use currency to enter the park. Most transactions would be bank/credit card based and automated. Two booths would collect automated transactions, while the third booth would accommodate oversized vehicles and the small number of memorial visitors requiring a cash transaction.

Visitor Use

To accommodate the demands generated by the centennial of flight and of the 21st Century, the National Park Service in cooperation with the North Carolina First Flight Commission would construct a new visitor/administrative facility. The facility would be designed to provide information and inspiration about the achieve-

ments of the Wright brothers. Various media would be employed to convey the story of Wilbur and Orville Wright. The Visitor Center would serve as the backdrop to encourage visitors to learn more about the achievements of the Wright brothers, to venture out to the area where man first successfully lifted into the sky, and to ascend the hill where Wilbur and Orville conducted many glider experiments and where the country memorialized the brothers. The existing Visitor Center and parking area would be removed, the area grubbed and revegetated. Utilities would be upgraded and directed to the new facility. The removal of the Visitor Center and the construction of a new facility would also necessitate an examination of the park's drainage system.

To take advantage of the resources on site, the National Park Service would locate this facility at a point approximately equidistant from the First Flight area and the pylon. Here, visitors would be able to contemplate the site where man first successfully ascended skyward in a heavier-than-air, controlled, powered flight, and the triangular-shaped monument erected in honor of the brothers. The Visitor Center would sit at the vertex of the equidistant triangle.

The visitor area of the facility would consist of 12,000 to 15,000 square feet. Interpretive zones would include an audiovisual area featuring a 20 to 22-minute state-of-the-art production to inspire visitors and a series of 8 to 10-minute specialized features; a First Flight auditorium that would house the replica Wright Flyer and serve as the venue for the ranger talk; exhibit areas to house static information about the Wright brothers triumphs; high tech exhibit areas employing the latest in high technology interactive media catering to group activities; a glider room featuring one or more Wright gliders; an information and orientation area; a sales area; and rest rooms.

Transition areas would define the visitors introduction to and exit from the Visitor Center. From the parking area to the door of the Visitor Center, visitors would encounter symbols of

flight, identified by historical milestones and images. Once in the structure, images of the Wright brothers would accompany visitors to the core of the building. Following their journey through the facility, visitors could stop at the third transition area, a trailhead, located inside or outdoors. Here visitors would decide where to go next: to the First Flight site, to the pylon, to the sales area, return to an exhibit, or perhaps depart the site. Information in this area would assist visitors make an informed decision.

Visitors emerging from the second transition area would encounter an orientation area. Here, National Park Service personnel and volunteers would provide information to visitors; monitors, touch screens, and printed material would inform visitors to the amenities and events at the site.

To ensure that visitors receive a reasonable opportunity to experience the audiovisual production or the First Flight room presentation, visitors would be advised to reserve a space for these attractions. The National Park Service would work with the Dare County Tourist Bureau and Chamber of Commerce to establish a reservation system so that visitors could plan their trip. Information about the memorial's policy would be included in a number of sources at the local, State, and national levels.

Reservations could be made off premises or at the park. Requiring a reservation or "ticket" to these attractions would also limit crowding and reduce the potential for placing a strain on the facilities and the park's cultural and natural resources.

The audiovisual area would feature a film (perhaps a mini-IMAX) of approximately 20 to 22 minutes in length to complement the ranger talk in the First Flight auditorium. Specialized features (8 to 10 minutes in length) on various aspects of the Wright brothers story would also be available in this area. This space would accommodate approximately 200 visitors.

Continuing a long-established tradition, the First Flight auditorium talk would feature the inspirational story of triumph and achievement of the Wright brothers. Visitors would be able to talk with park staff with the replica Wright flyer as the backdrop. To promote maximum contact and comprehension at this presentation, the audience would be limited to 200 visitors. Consideration would be given to shortening the talk to approximately 20 minutes.

As Wilbur and Orville Wright successfully explored the limits of technology in the early 20th Century, the National Park Service, in one area of the Visitor Center, would employ high tech methods to relate the Wright brothers story. Monitors, computers, and other types of interactive or audiovisual media would draw various age groups to this area. In order to avoid having an individual monopolize the various stations and exhibits, most stations would be designed to accommodate group activities. The majority of visitors would have the opportunity to experience these exhibits and circulate throughout the Visitor Center. The National Park Service would solicit the expertise of software and hardware manufacturers to assist in the development and support of the technology for these exhibits.

The National Park Service would complement its high tech exhibits with areas devoted to artifacts, story boards, panels, dioramas, or photographs. These exhibits would explain dramatically and accurately the saga of the Wright brothers achievements and be designed to inform visitors representing many age and interest levels.⁴

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Visitors would follow stabilized paths from the Visitor Center to the commemorative area where they would learn more about the Wright brothers experiences leading to the seminal flights in December 1903. The stabilized surface of the trails would allow strollers, carriages, and wheelchairs to maneuver easily. Culverts would replace sections of the drainage ditch on the east side of the memorial to allow the National Park

Service to construct connector trails from the Visitor Center to the commemorative area.

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Turning back southwest, some visitors would begin their journey from the First Flight area to the base of Kill Devil Hill, again along a user-friendly stabilized trail. This path follows a wide road which was part of memorial's design in the late 1920s and early 1930s.

From the base of the hill, visitors would contemplate whether they would want to ascend to the pylon perched approximately 90 feet from the hill's base. A series of paths wind up the hill, gradually reaching the base of the pylon. From here visitors would gain a perspective of the surrounding landscape while contemplating the achievements of Wilbur and Orville Wright. Following their descent from the hill, visitors would follow another path to the Visitor Center or perhaps descend to the west and take in an airplane ride at the First Flight Airstrip.

Returning to the Visitor Center visitors would be faced with a variety of choices including: 1) completing their visit and leaving; 2) reentering the facility and obtaining or purchasing additional information; or 3) driving their vehicles around Kill Devil Hill—and stopping at one of the parking areas along the road or taking a ride in the concessionaire-operated airplane—and exiting the park.

Pylon

Visitors would be encouraged to climb Kill Devil Hill to the base of the pylon, however access to the structure would be limited to the ground floor. The National Park Service would install gates across the stairways to prohibit visitor access up the stairs. Only on special occasions would park personnel lead a limited number of visitors up the narrow, twisting stairs to the top.

Material deterioration and mechanical problems have beset the pylon over the past several years. Water has seeped through the structure and the electrical system is outmoded. An Historic Resource Study undertaken by the National Park Service would recommend specific actions to overcome these problems. However, to restore the pylon to its stature of a bygone era, the beacon atop the structure would be reilluminated.

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Visitors looking toward and beyond the First Flight area notice single-engine aircraft taking-off and landing on a regular basis. Because the vegetative line separating the memorial's open area from the First Flight Airstrip is so thick, visitors seldom observe more than the touch down or takeoff. Thinning or removing some of

this vegetation adjacent to the airstrip (see drawing Alternative 3A) would enable visitors to glimpse longer the small aircraft, thus, perhaps, broadening their interest and understanding of the story of flight. After experiencing the First Flight auditorium talk and observing the exhibits, visitors would welcome a clear view of these aircraft soaring into or descending from the sky.

Another type of visitor experience would be enhanced by selective removal of vegetation. The illuminated pylon serves a handsome monument to the Wright brothers, especially during nighttime hours. Vehicles travelling north and south along U.S. 158, in most instances, gain a clear view of the pylon. However, some vegetation has grown so high on park property along the highway to obscure this view. The National Park Service would periodically thin or trim this vegetation and work with other property owners along U.S. 158 to ensure that this view would be maintained.

On the other hand, some selective planting of vegetative screens would help seal visitors within the confines of the memorial and reduce the impact of adjacent development on the visitor's experience. This situation is apparent at fee collection plaza and the park's entrance. Although adjacent land uses could not entirely be screened from visitors, the addition of vegetation at this location would help soften distracting sights and sounds and focus visitors attention on the Wright brothers story. Maintaining the vegetation along U.S. 158 in the area of the Visitor Center would also shelter visitors from the noise and traffic generated by the busy thoroughfare.

Vegetation management guidelines would also be based on reducing staff-hours required for mowing, trimming, and maintenance. Specific action would include prescribed mowing times or seasons, the use of herbicides that release or that are selective for desirable plant species, and altering perceptions of what the site should look like (for example taller grasses and less understory).

Additional Facility Development or Removal

Anticipating increases in small plane use of the First Flight Airstrip, the National Park Service would expand the capacity of the vehicle and plane parking areas serving the airstrip. The plane parking area would expand by a factor of 1.25, while the vehicle parking area would expand two to two-and-one-half times its present size. These actions would entail the removal of a small amount of vegetation.

The National Park Service would replace and relocate the inadequate First Flight concession structure. The new structure would be located nearby and provide sanitary facilities and some shelter from the sun and rain. Enhanced signing along the circular road would direct visitors to this location. The vacated site would be cleared, grubbed, and replanted with native vegetation.

Several structures serve or have served as employee housing over the years. The Cape Hatteras Group superintendent occupied a 1930s-brick structure located on the south portion of the memorial, off Colington Road, near the maintenance area. A structural assessment of the building questions whether it could be restored or adapted for commercial or another use cost-effectively. Rather than keeping this structure in a decrepit state on the landscape, the National Park Service would remove the building, obliterate the surrounding impervious surfaces (roads and walkways), and restore the vacant land with native vegetation. Portions of the road near this structure no longer needed for park purposes would be removed and the area grubbed and replanted with native vegetation.

In similar fashion, the need to provide employee housing at the memorial has waned. The community offers sufficient numbers of adequate housing. Currently, several employees occupy trailers located in a housing compound on the west side of the memorial off Colington Road. The National Park Service would phase out employee housing, remove the structures and associated development, and replant the area

with native vegetation or consider this site for the location of a new maintenance area.

In an effort to remove non-visitor related structures from the memorial's landscape and reduce the disruption to the park's natural and cultural resources, the National Park Service would relocate its maintenance facility from its current location (off Colington Road and south of Kill Devil Hill). The physical facilities are barely adequate to serve the park and have been constructed in a piecemeal manner. Three possible locations, all within the park's boundaries but away from the visitor, would qualify to lodge the new maintenance area. Site A currently is the site for employee housing which would be removed. Site B, located across the road from the housing compound, served as the location for a Civilian Conservation Corps camp in the 1930s. Site C, located west of the "emergency clear zone," is another disturbed area. All three sites have been disturbed within the past 50 to 60 years. Selection of a preferred site would take the following criteria into consideration: 1) remote location, away from visitor experience areas; 2) minimal disturbance to prime cultural and natural resources; 3) sufficient area, approximately 2 acres; 4) safe road entrance; and 5) minimize costs, take advantage of existing infrastructure.

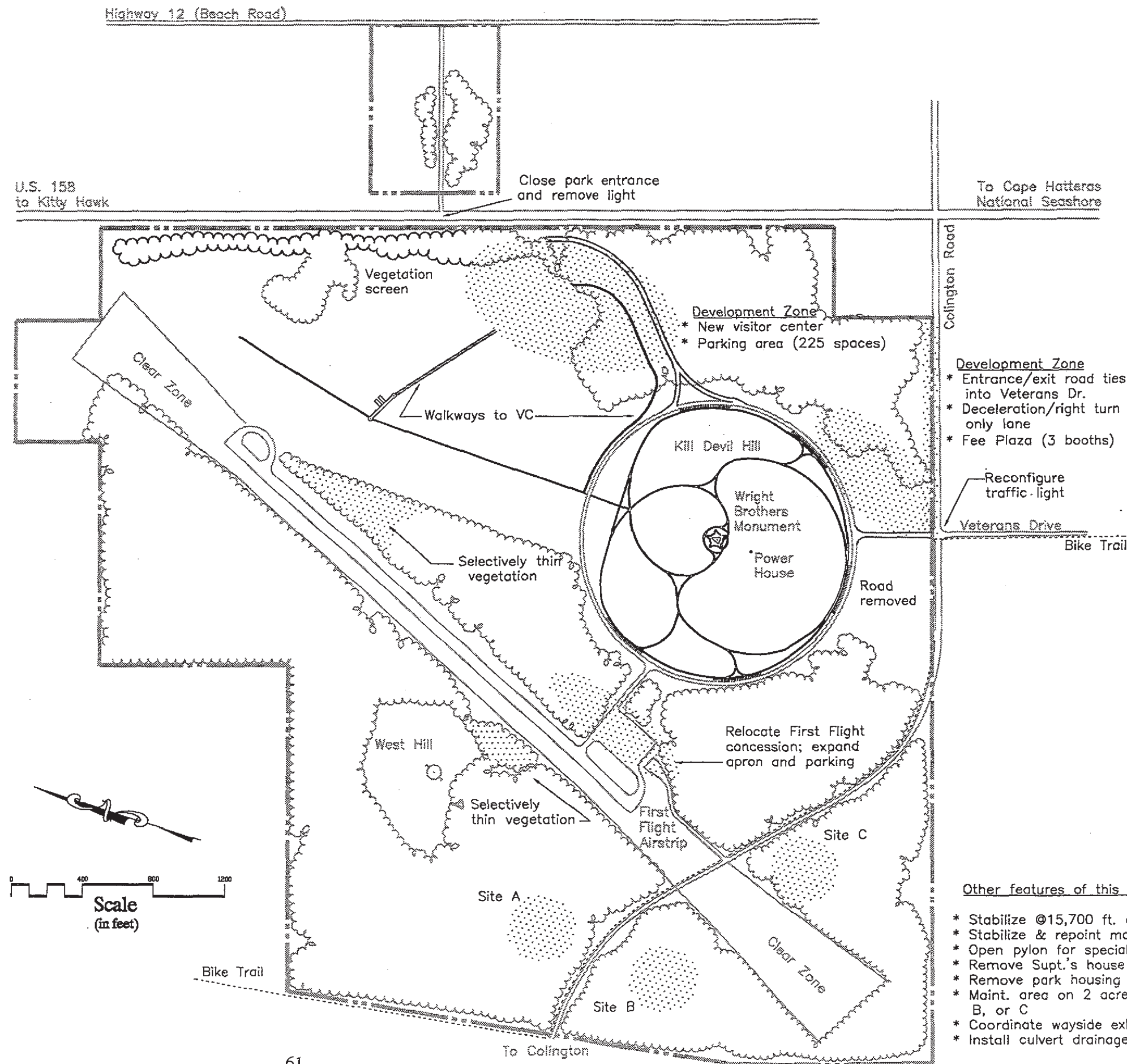
The town of Kill Devil Hills has constructed on park property a portion of a bikeway to connect several residential subdivisions with the First Flight Middle School. Under this alternative, the National Park Service would permit the town to complete this project.

Costs and Staffing

Completing the developments outlined under Alternative 3A would cost \$33,364,200. Improvements associated with U.S. 158 and Colington including deceleration and acceleration lanes and the enhanced traffic signal system are not included. The town's beach parking is also not included. Local or State agencies would be responsible for these improvements. This alternative would require the services of a projectionist and a person skilled to maintain the high tech interpretive equipment. The park would consider adding staff members or contracting for these services.

⁴An abbreviated Comprehensive Interpretive Plan will accompany the final General Management Plan. It will outline, in detail, the use and placement of interpretive media and staff including museum exhibits, personal services, waysides, publications, audiovisual media, historic furnishings, and architectural and interior design elements. It will also outline a process for developing the various interpretive media plans.

Figure 8.



Wright Brothers National Memorial

Kill Devil Hills, North Carolina

DRAFT Alternative 3A

Construct a new visitor/administrative facility west of U.S. 158
Entrance and exit off Colington Road

Legend

- Property line
- Trees/shrubs
- Possible area for development

Other features of this Alternative

- * Stabilize @15,700 ft. of trails
- * Stabilize & repoint monument
- * Open pylon for special events
- * Remove Supt.'s house
- * Remove park housing
- * Maint. area on 2 acre site at A, B, or C
- * Coordinate wayside exhibits
- * Install culvert drainage system

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July 1996	SEFA

ON MICROFILM

ALTERNATIVE 3B: CONSTRUCT A NEW VISITOR/ADMINISTRATIVE FACILITY WEST OF U.S. 158/ENTRANCE OFF COLINGTON ROAD/PEAK USE SEASON PARKING OFF VETERANS DRIVE WITH A PEAK USE SEASON SHUTTLE SERVICE

Concept

A new visitor/administrative facility would be designed to inspire park visitors and relate the story of the Wright brothers (Figure 9). It would be located west of U.S. 158. During the peak use season (June through Labor Day) visitors would board a shuttle at a remote parking area located off Veterans Drive, cross Colington Road, and ride to the Visitor Center. During the rest of the year, vehicles would enter the park from Colington Road and proceed to the Visitor Center.

In Alternative 3B, the National Park Service would prepare for the events culminating with the centennial of flight on December 17, 1903. In order to meet the demands associated with this international event and to accommodate the needs of resource protection and visitor services of the 21st Century, the National Park Service would embark on an ambitious program. This program would, to a large extent, depend upon the assistance of the town of Kill Devil Hills, the State of North Carolina's First Flight Centennial Commission, and the North Carolina Department of Transportation; and the support of many organizations, such as the Dare County Tourist Bureau, the Outer Banks Chamber of Commerce, and the First Flight Society.

As the Wright brothers represented the forefront of technological progress at the turn of the 20th Century, so too would the National Park Service

employ "state-of-the-art" advances to address, in part, fee collection, interpretation, and visitor circulation. Because the prospect of adding personnel to the memorial's staff would be slim, efforts would go forward to provide alternatives to labor-intensive services and activities. The National Park Service would augment its Volunteer-in-the-Park (VIP) program to supplement personal services to the public. In addition, any new construction would be subject to standards of sustainable design to accommodate unanticipated changes in function and use.

Entrance and Parking

During peak use season visitors travelling southbound on U.S. 158 would turn right onto Colington Road; northbound vehicles would turn left. To ease visitor entrance into the memorial the National Park Service would work with the North Carolina Department of Transportation to construct a designated turn lane at the intersection of Colington Road and Veterans Drive. Vehicles would then proceed to the remote parking area and board the shuttle.

From September through May vehicles would enter the park using a deceleration lane along westbound Colington Road. Signs and warnings would caution visitors to slow down and use the lane to prepare to enter the memorial. The length of the lane would allow adequate room for many vehicles to decelerate and wait (or stack) to enter the memorial. Construction of the deceleration lane would necessitate the relocation of utilities, the ditch line, and culverts. The National Park Service would also cooperate with the North Carolina Department of Transportation and the town of Kill Devil Hills to enhance the traffic signals and intersection at: 1) U.S. 158 and Colington Road and 2) Colington Road and Veterans Drive (across from the new park entrance). The traffic signal at the intersection of U.S. 158 and Prospect Avenue would be removed to facilitate vehicle flow.

After entering the park and passing through the fee collection plaza, vehicles would park in the one of the 125 slots in the area accompanying

the new visitor/administrative facility. Approximately ten per cent of the spaces would be dedicated to oversized vehicles and busses. To improve traffic flow during times of weather extremes and the increased numbers of seniors visitors, the parking area would feature a designated drop-off and pick up area. The parking area would be nestled between the Visitor Center and U.S. 158; a vegetative barrier would be maintained to screen the parking area and Visitor Center from U.S. 158. Vehicles would exit the park onto Colington Road after circling Kill Devil Hill. A portion of the memorial's road system linking the U.S. 158 entrance with the road around Kill Devil Hill would be removed and the area grubbed and revegetated.

In exchange for the remote parking area off Veterans Drive, the National Park Service would trade an equal valued-portion of the 15.69-acre tract east of U.S. 158 with the town of Kill Devil Hills. The town would use this land for a beach parking area. Legislation would be required to authorize this exchange.

Fee Collection

The National Park Service would work closely with the local community and organizations to publicize the fee system at the memorial. Visitors would be made aware of the collection system prior to entering the park. Nevertheless, strategically placed signs on U.S. 158 and Colington Road would remind visitors of the fee collection system.

During peak use season under Alternative 3B, visitors would pay their fees at the parking area off Veterans Drive. The National Park Service would install automated units to accept bank or credit cards or cash.

From September through May, the National Park Service would collect fees at the plaza located near the entrance of the park. The plaza would consist of 2 booths, one to accept automated transactions, the other designed to accommodate oversized vehicles and cash transactions. Space would be available to deal with disabled vehicles.

Visitor Use

To accommodate the demands generated by the centennial of flight and of the 21st Century, the National Park Service in cooperation with the North Carolina First Flight Commission would construct a new visitor/administrative facility. The facility would be designed to provide information and inspiration about the achievements of the Wright brothers. Various media would be employed to convey the story of Wilbur and Orville Wright. The Visitor Center would serve as the backdrop to encourage visitors to learn more about the achievements of the Wright brothers, to venture out to the area where man first successfully lifted into the sky, and to ascend the hill where Wilbur and Orville conducted many glider experiments. The existing Visitor Center and parking area would be removed, the area grubbed and revegetated. Utilities would be upgraded and directed to the new facility. The removal of the Visitor Center and the construction of a new facility would also necessitate an examination of the park's drainage system.

To take advantage of the resources on site, the National Park Service would locate this facility at a point approximately equidistant from the First Flight area and the pylon. Here, visitors would be able to contemplate the ground where man first successfully ascended skyward in a heavier-than-air, controlled, powered flight, and the triangular-shaped monument erected in honor of the brothers. The Visitor Center would sit at the vertex of the equidistant triangle.

The visitor area of the facility would consist of 12,000 to 15,000 square feet. Interpretive zones would include an audiovisual area featuring a 20 to 22-minute state-of-the-art production to inspire visitors and a series of 8 to 10-minute specialized features; a First Flight auditorium that would house the replica Wright Flyer and serve as the venue for the ranger talk; exhibit areas to house static information about the Wright brothers triumphs; high tech exhibit areas employing the latest in high technology interactive media catering to group activities; a

glider room featuring one or more Wright gliders; an information and orientation area; a sales area; and rest rooms.

Transition areas would define the visitors introduction to and exit from the Visitor Center. From the parking area to the door of the Visitor Center, visitors would encounter symbols of flight, identified by historical milestones and images. Once in the structure, images of the Wright brothers would accompany visitors to the core of the building. Following their journey through the facility, visitors could stop at the third transition area, a trailhead, located inside or outdoors. Here visitors would decide where to go and what to do next: to the First Flight site, to the pylon, to the sales area, return to an exhibit, or perhaps depart the site. Information in this area would assist visitors make an informed decision.

Visitors emerging from the second transition area would encounter an orientation area. Here, National Park Service personnel and volunteers would provide information to visitors; monitors, touch screens, and printed material would inform visitors to the amenities and events at the site. Fee collections other than by bank/credit card would be collected in this area.

To ensure that visitors receive a reasonable opportunity to experience the audiovisual production or the First Flight room presentation, the National Park Service would advise them to reserve a space for these attractions. The National Park Service would work with the Dare County Tourist Bureau and Chamber of Commerce to establish a reservation system so that visitors could plan their trip. Information about the memorial's policy would be included in a number of sources at the local, State, and national levels. Reservations could be made off premises or at the park. Requiring a reservation or "ticket" to these attractions would also limit crowding and reduce the potential for placing a strain on the facilities and the park's cultural and natural resources.

The audiovisual area would feature a film (perhaps a mini-IMAX) of approximately 20 to

22 minutes in length to complement the ranger talk in the First Flight auditorium. Specialized features (8 to 10 minutes in length) on various aspects of the Wright brothers story would also be available in this area. This space would accommodate approximately 200 visitors.

Continuing a long-established tradition, the First Flight auditorium talk would feature the inspirational story of triumph and achievement of the Wright brothers. Visitors would be able to interact with park staff with the replica Wright flyer as the backdrop. To promote maximum contact and comprehension at this presentation, the audience would be limited to 200 visitors. Consideration would be given to shortening the talk to approximately 20 minutes.

As Wilbur and Orville Wright successfully explored the limits of technology in the early 20th Century, the National Park Service, in one area of the Visitor Center, would employ high tech methods to relate the Wright brothers story. Monitors, computers, and other types of interactive or audiovisual media would draw various age groups to this area. In order to avoid having an individual monopolize the various stations and exhibits, most stations would be designed to accommodate group activities. The majority of visitors would have the opportunity to experience these exhibits and circulate throughout the Visitor Center. The National Park Service would solicit the expertise of software and hardware manufacturers to assist in the development and support of the technology for these exhibits.

The National Park Service would complement its high tech exhibits with areas devoted to artifacts, story boards, panels, dioramas, or photographs. These exhibits would explain dramatically and accurately the saga of the Wright brothers achievements and be designed to inform visitors representing many age and interest levels.⁵

The messages conveyed at Wright Brothers National Memorial culminate with the events of December 17, 1903, and the effects of the Wright achievements on humankind. The park

can relate only a portion of this inspirational story. Another National Park System unit, the Dayton Aviation Heritage National Historical Park, complements and broadens the story of the Wright brothers. To enhance the interpretive programs at both sites, the National Park Service would establish a video link between Kill Devil Hills and Dayton. The parks would cooperate with the local school districts to develop programs and educational materials to supplement the on-site and video visits. Special programs, such as First Flight auditorium talks or commemorative celebrations, would be linked to Dayton. Similar types of special events or Wright-related educational programs would be broadcast to Kill Devil Hills. Educational programs could be linked directly to the two sites or to schools in North Carolina and Ohio.

The Eastern National Park and Monument Association outlet would be located in an area near the facility's exit. This layout would tend to avoid crowding in the orientation area and promote a smooth flow of visitor movement through the facility.

By incorporating elements of sustainable design, the facility would accommodate changes in use. Movable interior walls to accommodate large numbers of visitors for commemorative events or special exhibitions, flexible mechanical systems (for example, the ability to move easily HVAC ducts and electrical conduits), alternative energy sources, and the flexibility to expand without compromising the integrity of the building would all be incorporated. Rest rooms would be located on the exterior of the building and incorporate sensible design ratios for male and female visitors. Rest rooms would be designed to be cleaned or a portion closed without disrupting the entire operation.

Because the Visitor Center would serve the interpretive and informational needs of the visitor, interpretive planning documents must guide the design of the facility. Media planners must work hand in hand with the architects to ensure that visitors enjoy a safe and enriching experience. This experience would link the Visitor Center with the memorial's landscape.

This facility would also lodge the administrative functions of the National Park Service and comprise nearly one-quarter of the total area (approximately 5,000 square feet). The space would be devoted to a number of functions including staff offices, a staff rest room, a staff break room, training and conference area, a storage area large enough to hold chairs used for commemorative events, an Eastern National Park and Monument Association office and storage area, and space for the mechanical systems.

In addition, the administrative area would house a First Flight Society plaza. Primarily for use by the park's cooperating association, the first Flight Society, the area would lodge an office, conference room, and a space to function as a library, reference room, and display area that available to the public. Scholars and students eager to conduct research on the Wright brothers would find this area particularly enriching. Portraits depicting recipients of the society's annual award would be displayed here.

Visitor Circulation

Although visitors would gain valuable insight into the Wright brothers achievements at the Visitor Center, the National Park Service would encourage visitors to explore the grounds which beheld the first flight. Much of the area has been manipulated in order to stabilize the landscape, but it is key to visit the site of the first powered controlled flights or scale the hill, the site of numerous glider experiments. This message would be introduced through brochures, films, videos, and exhibits and reinforced through personal communication during the First Flight auditorium talk and by park personnel.

During the peak use season, visitors would board the shuttle in the parking area, cross Colington Road, and enter the grounds of the memorial. Their first view would be that of the pylon and Kill Devil Hill. Slowly the shuttle would wind its way to the Visitor Center, offering the visitor a parklike experience during the short journey.

The National Park Service would design the shuttles to transport approximately 75 passengers per trip. Three shuttle units would be needed to accommodate the projected number of visitors which would be managed through the reservation system. Each shuttle would make about 3 trips per hour during the peak use season. The equipment could be owned by the National Park Service or a concessionaire. The shuttle would be stored at the park's maintenance facility.

Following their Visitor Center experience, visitors would reboard the shuttle and travel to the first designated stop, a point where they would have easy access to the First Flight area. Visitors may elect to disembark or continue riding along the memorial's roads. The second designated stop would be located at the intersection of the trail leading from the First Flight area with the road circling Kill Devil Hill. A third stop would allow easy access for visitors to the First Flight concessionaire and airstrip. The National Park Service would permit riders to embark or disembark the shuttle at any of the three locations before returning to the parking area. Some visitors may wish to explore the memorial on foot and avoid using the shuttle. Others would combine a walking tour with a ride on the shuttle. In all instances, visitors would ride the shuttle back to the parking area off Veterans Drive.

From September through May when the shuttle would not be operating, the National Park Service would permit vehicles to travel on the memorial's roads. Thus, visitors would tour the area by foot or in their vehicles. Often, weather dictates the choice of transportation and how far visitors venture on foot.

Visitors disembarking at the first shuttle stop would follow stabilized paths to the commemorative area where they would learn more about the Wright brothers experiences leading to the seminal flights in December 1903. The stabilized surface of the trail would allow strollers, carriages, and wheelchairs to maneuver easily. Culverts would replace sections of the drainage

ditch on the east side of the memorial to allow the National Park Service to construct connector trails from the commemorative area to the Visitor Center.

Visitors would arrive at the exhibits that represent the 1902-1903 quarters and the 1903 hangar. The Wright brothers lived, toiled, and argued over the principles of flight in the original buildings. The messages and lighting in those exhibits would be upgraded so that visitors would better understand the living and working conditions on the Outer Banks in the fall and early winter of 1903. Visitors would also visit the site where John T. Daniel photographed the remarkable scene of the first powered controlled flight. The National Park Service would prepare a Wayside Exhibit Plan to direct the interpretation of these exhibits and other key areas in the park.

From here visitors would venture along another stabilized trail that follows the path of the first flights of December 17, 1903, the extent of each flight signified by a boulder. A 60-foot long steel monorail, a replica of the starting rail which stabilized the flyer during takeoff, parallels this path. Referred to as the "Junction Railroad" by the Wright brothers, this rail originally consisted of four 15-foot two-by-fours.

Turning back southwest, visitors would continue their tour from the First Flight area to the base of Kill Devil Hill, again along a stabilized trail. This path follows a wide road which was part of memorial's design in the late 1920s and early 1930s.

From the base of the hill (the site of the second shuttle stop), visitors would decide whether they would want to ascend to the pylon perched approximately 90 feet above the hill's base. A series of paths wind up the hill, gradually reaching the base of the pylon. From here visitors would gain a perspective of the surrounding landscape while contemplating the achievements of Wilbur and Orville Wright. Following their descent from the hill, visitors

would follow another path to the Visitor Center or perhaps descend to the west (site of the third shuttle stop) and take in an airplane ride at the First Flight Airstrip.

Those visitors returning to the Visitor Center would encounter a variety of choices including: 1) completing their visit and leaving; 2) reentering the facility and obtaining or purchasing additional information; or 3) returning to the memorial and taking a ride in the concessionaire-operated airplane.

Pylon

Visitors would be encouraged to climb Kill Devil Hill to the base of the pylon, however access to the structure would be limited to the ground floor. The National Park Service would install gates across the stairways to prohibit visitor access up the stairs. Only on special occasions would park personnel lead a limited number of visitors up the narrow, twisting stairs to the top.

Material deterioration and mechanical problems have beset the pylon over the past several years. Water has seeped through the structure and the electrical system is outmoded. An Historic Resource Study undertaken by the National Park Service would recommend specific actions to correct these problems. However, to restore the pylon to its stature of a bygone era, the beacon atop the structure would be reilluminated.

Screening and Removal of Vegetation

In particular instances the visitor experience would be enhanced through the selective removal or addition of vegetation. By planting, thinning, or removing vegetation, the National Park Service would direct and enhance views within and outside the memorial.

Visitors looking toward and beyond the First Flight area glimpse single-engine aircraft taking-off and landing on a regular basis. Because the vegetative line separating the memorial's open area from the First Flight Airstrip is so thick,

visitors seldom see more than the touch down or takeoff. Thinning or removing some of this vegetation adjacent to the airstrip (see drawing Alternative 3B) would enable visitors to observe the small aircraft, thus, perhaps, broadening their interest and understanding of the story of flight. After experiencing the First Flight auditorium talk and observing the exhibits, visitors would welcome a clear view of these aircraft soaring into or descending from the sky.

Another type of visitor experience would be enhanced by selective removal of vegetation. The illuminated pylon serves a handsome monument to the Wright brothers, especially during nighttime hours. Vehicles travelling north and south along U.S. 158, in most instances, gain a clear view of the pylon. However, some vegetation has grown so high on park property along the highway to obscure this view. The National Park Service would periodically thin or trim this vegetation and work with other property owners along U.S. 158 to ensure that this view would be maintained.

On the other hand, some selective planting of vegetative screens would help seal visitors within the confines of the memorial and reduce the impact of adjacent development on the visitor's experience. This situation is apparent at the park's entrance and along the former entrance off U.S. 158. Although adjacent land uses could not entirely be screened from visitors, the addition of vegetation at these locations would help soften distracting sights and sounds and focus visitors attention on the Wright brothers story.

Vegetation management guidelines would also be based on reducing staff-hours required for mowing, trimming, and maintenance. Specific action would include prescribed mowing times or seasons, the use of herbicides that release or that are selective for desirable plant species, and altering perceptions of what the site should look like (for example taller grasses and less understory).

Additional Facility Development or Removal

Anticipating increases in small plane use of the First Flight Airstrip, the National Park Service would expand the capacity of the vehicle and plane parking areas serving the airstrip. The plane parking area would expand by a factor of 1.25, while the vehicle parking area would expand two to two-and-one-half times its present size. These actions would entail additional paving and the removal of a small amount of vegetation.

The National Park Service would replace and relocate the inadequate First Flight concession structure. The new structure would be located nearby and provide sanitary facilities and some shelter from the sun and rain. Enhanced signing along the circular road would direct visitors to this location. The vacated site would be cleared, grubbed, and replanted with native vegetation.

Several structures serve or have served as employee housing over the years. The Cape Hatteras Group superintendent occupied a 1930s-brick structure located on the south portion of the memorial, off Colington Road, near the maintenance area. A structural assessment of the building questions whether it could be restored or adapted for commercial or another use cost-effectively. Rather than keeping this structure in a decrepit state on the landscape, the National Park Service would remove the building, obliterate the surrounding impervious surfaces (roads and walkways), and restore the vacant land with native vegetation.

In similar fashion, the need to provide employee housing at the memorial has waned. The community offers sufficient numbers of adequate housing. Currently, several employees occupy trailers located in a housing compound on the west side of the memorial off Colington Road. Over time, the National Park Service would phase out employee housing, remove the trailers and associated development, and replant the area with native vegetation or consider this site for the location of a new maintenance area.

In an effort to remove non-visitor related structures from the memorial's landscape and reduce the disruption to the park's natural and cultural resources, the National Park Service would relocate its maintenance facility from its current location (off Colington Road and south of Kill Devil Hill). The physical facilities are barely adequate to serve the park and have been constructed in a piecemeal manner. Three possible locations, all within the park's boundaries but away from the visitor, would qualify to lodge the new maintenance area. Site A currently is the site for employee housing which would be removed. Site B, located across the road from the housing compound, served as the location for a Civilian Conservation Corps camp in the 1930s. Site C, located west of the "emergency clear zone," is another disturbed area. All three sites have been disturbed within the past 50 to 60 years. Selection of a preferred site would take the following criteria into consideration: 1) remote location, away from visitor experience areas; 2) minimal disturbance to prime cultural and natural resources; 3) sufficient area, approximately two acres; 4) safe road entrance; and 5) to minimize costs, take advantage of existing infrastructure.

The town of Kill Devil Hills has constructed on park property a portion of a bikeway to connect several residential subdivisions with the First Flight Middle School. Under this alternative, the National Park Service would permit the town to complete this project.

Costs and Staffing

Completing the developments outlined under Alternative 3B would cost \$27,414,050. Improvements associated with U.S. 158 and Colington Road including deceleration and acceleration lanes and the enhanced traffic signal system are not included. The town's beach parking is also not included. Local or State agencies would be responsible for these improvements. This alternative would require the services of a projectionist and a person skilled to maintain the high tech interpretive equipment. The park would consider adding staff members or contracting for these services.

⁵An abbreviated Comprehensive Interpretive Plan will accompany the final General Management Plan. It will outline, in detail, the use and placement of interpretive media and staff including museum exhibits, personal services, waysides, publications, audiovisual media, historic furnishings, and architectural and interior design elements. It will also outline a process for developing the various interpretive media plans.

ALTERNATIVES AND CONCEPTS CONSIDERED BUT CONSIDERED NOT FEASIBLE

Several alternatives and concepts were considered during the planning process. These included: 1) siting the visitor and administrative facility in a more centralized location on the memorial's grounds, nearer the First Flight Airstrip; 2) developing a separate administrative/visitor contact facility and a First Flight auditorium building; 3) rerouting Colington Road around the park; and 4) lengthening the airstrip to accommodate commercial traffic.

Centralized Location for Visitor and Administrative Facility: This action would have entailed siting the facility near the core of the commemorative landscape, several hundred feet north of the present location of the First Flight concession operation. Federal Aviation Administration regulations would have dictated constructing this building far into the core area of the memorial, far away from the edge of the airstrip. The facility would have intruded on the commemorative and interpretive scene.

Separate Facilities: A shuttle would have transported visitors from the visitor contact area, near Colington Road, to the First Flight auditorium building, within the commemorative area, east of the First Flight Airstrip. Several factors eliminated this alternative. Federal Aviation Administration regulations would have pushed the site far into the commemorative area, thus causing an intrusion. Also, the cost of separate facilities would have been prohibitive.

Rerouting Colington Road: This action would have consolidated the park, except for the 15.69-acre tract on the east side of U.S. 158. However, little or no advantage would have been gained in terms of natural or cultural resource protection nor would have visitors

benefited. This action would have lengthened, to a small extent, the commuting distance for many vehicles going to and coming from Colington.

Lengthening the Airstrip: The purpose of the Wright Brothers National Memorial is to commemorate the first powered flight and to interpret the continued worldwide significance of the brothers' dream, vision, and achievement. The airstrip serves aviators who wish to land and alight from their shrine, the birthplace of aviation. It also helps to interpret the Wright brothers story. Introducing regularly scheduled commercial flights to the memorial would denigrate from its commemorative and interpretive values.

Table 1. A summary comparison of the alternatives for the DRAFT Wright Brothers General Management Plan and how they address the issues.

ISSUES	Alternative 1	Alternative 2A	Alternative 2B
<i>Accommodate Local Use</i>	Complete bikeway	Beach parking; and Complete bikeway.	Complete bikeway.
<i>Visitor Entrance</i>	Off US 158; Southbound deceleration lane.	Off US 158; Southbound deceleration lane; Northbound jug handle turn; Enhance traffic signal.	Off US 158 into 15 acre tract; Northbound deceleration lane; Designated left turn lane; and Enhance traffic signal.
<i>Accommodate Park Visitor</i>	Renovated Visitor Center; Pick up/drop-off area.	New visitor center; New parking area; and Reservation system.	New visitor center; New parking area; Reservation system; and Shuttle.
<i>Ensure Quality Experience</i>	Protect cultural and natural resources; Enhance scenic/historic views; Relocate/improve concession facilities.	Protect cultural and natural resources; Enhance scenic/historic views; Relocate/improve concession facilities; Enhance interpretation; Reservation system; Relocate maintenance; and Remove superintendent's house.	Protect cultural and natural resources; Enhance scenic/historic views; Relocate/improve concession facilities; Enhance interpretation; Reservation system; Relocate maintenance; Remove superintendent's house; and Eliminate private vehicles.
<i>Fee Collection</i>	Automated bank/credit card at fee plaza as entering park.	Automated bank/credit card at fee plaza as entering park.	Automated bank/credit card at fee plaza as entering park.
<i>Prepare for 2003</i>	Renovate visitor center.	New visitor center, exhibits, and parking area.	New visitor center, exhibits, and parking area.
<i>Visitor Center Improvements</i>	Renovate (sales, roof, HVAC and entrance)	New visitor center, exhibits, and parking area.	New visitor center, exhibits, and parking area.
<i>Pylon</i>	Historic Structure Report to recommend specific actions (e.g. electrical, masonry, and beacon repair).	Historic Structure Report to recommend specific actions (e.g. electrical, masonry, and beacon repair).	Historic Structure Report to recommend specific actions (e.g. electrical, masonry, and beacon repair).

Alternative 2C	Alternative 3A	Alternative 3B
Complete bikeway; and Beach parking.	Complete bikeway.	Complete bikeway; and Beach parking.
Off US 158 into park on 15 acre tract; Deceleration lanes; Designated turn lanes; and Enhance traffic signal.	Off Colington Road; Deceleration lane; and Enhance traffic signal.	Off Colington Road; Deceleration lane; and Enhance traffic signal.
New visitor center; New parking area; and Reservation system.	New visitor center; New parking area; Reservation system; and Shuttle.	New visitor center; New parking area; Reservation system; and Shuttle.
Protect cultural and natural resources; Enhance scenic/historic views; Relocate/improve concession facilities; Enhance interpretation; Reservation system; Relocate maintenance; Remove superintendent's house; and Eliminate private vehicles (peak season).	Protect cultural and natural resources; Enhance scenic/historic views; Relocate/improve concession facilities; Enhance interpretation; Reservation system; Relocate maintenance; and Remove superintendent's house.	Protect cultural and natural resources; Enhance scenic/historic views; Relocate/improve concession facilities; Enhance interpretation; Reservation system; Relocate maintenance; Remove superintendent's house; and Eliminate private vehicles (peak season).
Automated bank/credit card at fee plaza as entering park.	Automated bank/credit card at fee plaza as entering park.	Automated bank/credit card at fee plaza as entering park.
New visitor center, exhibits, and parking area.	New visitor center, exhibits, and parking area.	New visitor center, exhibits, and parking area.
New visitor center, exhibits, and parking area.	New visitor center, exhibits, and parking area.	New visitor center, exhibits, and parking area.
Historic Structure Report to recommend specific actions (e.g. electrical, masonry, and beacon repair).	Historic Structure Report to recommend specific actions (e.g. electrical, masonry, and beacon repair).	Historic Structure Report to recommend specific actions (e.g. electrical, masonry, and beacon repair).

continued.

Table 1 (continued)

ISSUES	Alternative 1	Alternative 2A	Alternative 2B
<i>Adjacent Land Use & Vegetation Management</i>	Soften effect of adjacent land use and reveal internal views.	Soften effect of adjacent land use and reveal internal views.	Soften effect of adjacent land use and reveal internal views.
<i>Relationship with Dayton</i>	None.	Video link for programs; and Educational materials in North Carolina and Ohio.	Video link for programs; and Educational materials in North Carolina and Ohio.
<i>Maintenance Facility</i>	Retain and screen with vegetation.	Relocate.	Relocate.
<i>Limited Staff</i>	Supplement with automated fee collection.	Supplement with automated fee collection; Sustainable design; Reservation system; and Use of Volunteers In Parks.	Supplement with automated fee collection; Sustainable design; Reservation system; and Use of Volunteers In Parks.
<i>Visitor Circulation</i>	Designated stabilized trails.	Designated stabilized trails; Visitor center design; Transition areas; Enhanced information; and Portion of circular road closed.	Designated stabilized trails; Visitor center design; Transition areas; Enhanced information; and Shuttle system.

Alternative 2C	Alternative 3A	Alternative 3B
<p>Soften effect of adjacent land use and reveal internal views.</p> <p>Video link for programs; and Educational materials in North Carolina and Ohio.</p> <p>Relocate.</p> <p>Supplement with automated fee collection; Sustainable design; Reservation system; and Use of Volunteers In Parks.</p> <p>Designated stabilized trails; Visitor center design; Transition areas; and Enhanced information.</p>	<p>Soften effect of adjacent land use and reveal internal views.</p> <p>Video link for programs; and Educational materials in North Carolina and Ohio.</p> <p>Relocate.</p> <p>Supplement with automated fee collection; Sustainable design; Reservation system; and Use of Volunteers In Parks.</p> <p>Designated stabilized trails; Visitor center design; Transition areas; Enhanced information; and Shuttle system.</p>	<p>Soften effect of adjacent land use and reveal internal views.</p> <p>Video link for programs; and Educational materials in North Carolina and Ohio.</p> <p>Relocate.</p> <p>Supplement with automated fee collection; Sustainable design; Reservation system; and Use of Volunteers In Parks.</p> <p>Designated stabilized trails; Visitor center design; Transition areas; Enhanced information; and Shuttle system.</p>

Table 2. Associated costs of implementing the alternatives for the DRAFT General Management Plan for Wright Brothers National Memorial, Kill Devil Hills, North Carolina. July 1996.

Alternative 1: Continue and make minor modifications to current operations.

<u>Development Item</u>	<u>Gross Construction Costs</u>
• Entrance and parking:	\$50,450
Formal drop-off/pickup zone	
Paving	
Main entrance and directional/informational signs	
• Interpretive/commemorative circulation	\$159,950
Waysides and planning	
Surface stabilized trail (3240 lf)	
• Reconfigure fee collection	\$57,650
2-booth fee collection plaza	
• Reconfigure visitor center	\$655,200
Replace HVAC, electrical system, ceiling, carpet, exterior doors, windows, and roof	
Administrative building furnishings	
Hookup to sewer system	
• Stabilize monument**	\$115,300
• Vegetation screens and management	\$91,800
Along Highway 158	
Remove/thin vegetation between airstrip and West Hill	
Screen maintenance area	
• Remove park housing	\$21,750
Remove mobile homes, pads, and roads	
Land reclamation with native plants	
• Remove superintendent's house	\$38,750
Building and road removal	
Land reclamation with native plants	
• Relocate First Flight concession	\$80,700
Medium clear/grub	
Remove building	
Construct ranger station and sanitary facilities	
Paved parking	
Directional/informational sign	

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Table 2 continued

<u>Development Item</u>	<u>Gross Construction Costs</u>
Redesign visitor center entrance	\$367,500
VC landscaping, planting, and site work	\$73,500
<hr/>	
Subtotal Gross Construction Costs.....	\$1,712,550
Advance and Project Planning Costs.....	\$428,150
<hr/>	
Alternative A Total Project Costs	\$2,140,700

* Price based on 1991 Means Facilities Cost Data + 10% inflation

**To be determined by findings of CRS

Septic design for 3500 visitors and a peak of 5000/day

Alternative 2A: Construct a new visitor/administrative facility west of U.S. 158 while redesigning the U.S. 158 entrance to the park.

<u>Development Item</u>	<u>Gross Construction Costs</u>
<ul style="list-style-type: none">• Remove existing visitor center and parking area \$367,900 Building, parking lot and road removal Underground storage tank removal Land reclamation with native plants	
<ul style="list-style-type: none">• Entrance and parking \$897,900 Main entrance and roadway signs Clear vegetation Entrance road construction Parking area for 225 vehicles	
<ul style="list-style-type: none">• Fee collection plaza \$129,700 3 toll booths	
<ul style="list-style-type: none">• Interpretive/commemorative circulation \$9,567,250 Interpretative display planning and production Artifact conservation Waysides, planning, and production Interactive video and projection system Surface stabilized trail (16,250 lf) Corrugated metal pipe for ditch crossing	
<ul style="list-style-type: none">• New visitor center \$8,058,800 Site prep and new construction Administrative and visitor center furnishing Flagpole, landscaping, planting, and site work	
<ul style="list-style-type: none">• Stabilize monument** \$115,300	
<ul style="list-style-type: none">• Vegetation screens and management \$157,100 Along Highway 158 Remove/thin vegetation at airstrip/First Flight area Remove/thin vegetation between airstrip and West Hill Screen maintenance area	
<ul style="list-style-type: none">• Remove maintenance area \$109,900 Building, pad, and road removal Land reclamation with native plants	
<ul style="list-style-type: none">• Remove superintendent's house \$38,750 Building and road removal Land reclamation with native plants	

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Table 2 continued

<u>Development Item</u>	<u>Gross Construction Costs</u>
<ul style="list-style-type: none"> • Remove park housing 	\$21,750
Remove mobile homes, concrete pads, and road	
Land reclamation with native plants	
<ul style="list-style-type: none"> • Construct new maintenance area on 1.5-acre site and use existing infrastructure 	\$1,209,850
Site prep and new construction	
Administration building furnishing	
10 KW generator with shelter	
Flammable materials storage	
Storage building	
Chain link fence and gate	
Paved parking and parking lot lighting	
Directional/informational sign	
Relocate maintenance area to undeveloped 2-acre site (additional costs)	\$21,850
Entrance road construction	
<ul style="list-style-type: none"> • Relocate First Flight concession 	\$80,750
Medium clear/grub	
Remove building	
Construct ranger station and sanitary facility	
Paved parking	
Directional/informational sign	
Rework park's drainage system	\$475,500
Install 40" corrugated pipe	
<hr/>	
Subtotal Gross Construction Costs.....	\$21,252,350
Advance and Project Planning Costs.....	\$5,313,100
<hr/>	
Alternative 2A Total Project Costs	\$26,565,450

* Price based on 1991 Means Facilities Cost Data

**To be determined by findings of CRS

Septic design for 3500 visitors and a peak of 5000/day

Alternative 2B: Construct a new visitor/administrative facility east of U.S. 158 on the 15.69-acre tract & provide year round shuttle service.

<u>Development Item</u>	<u>Gross Construction Costs</u>
<ul style="list-style-type: none">• Remove existing visitor center and parking area \$322,500 Building and road removal Underground storage tank removal Land reclamation with native plants	
<ul style="list-style-type: none">• Entrance and parking \$843,700 Main entrance and roadway signs Clear vegetation Entrance road construction Parking area for 225 vehicles Beach parking for 50 cars	
<ul style="list-style-type: none">• Fee collection plaza \$129,700 3 toll booths	
<ul style="list-style-type: none">• Shuttle system** \$890,500 Power units (3) and trailer units (6) Shuttle storage shed	
<ul style="list-style-type: none">• New visitor center \$8,058,800 Site prep and new construction Administrative and visitor center furnishing Flagpole, VC landscaping, planting, and site work	
<ul style="list-style-type: none">• Interpretive/commemorative circulation \$9,536,400 Interpretative display planning and production Artifact conservation Wayside and planning Video planning, production, and projection Interactive video system Corrugated metal pipe for ditch crossing Surface stabilized trail (15,515 lf)	
<ul style="list-style-type: none">• Stabilize monument** \$115,300	
<ul style="list-style-type: none">• Vegetation screens and management \$136,200 Along Highway 158 Remove/thin vegetation at airstrip/First Flight area Remove/thin vegetation between airstrip and West Hill	
<ul style="list-style-type: none">• Remove maintenance area \$109,900 Building, pad, and road removal Land reclamation with native plants	

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Table 2 continued

<u>Development Item</u>	<u>Gross Construction Costs</u>
• Remove superintendent's house	\$38,750
Building and road removal	
Land reclamation with native plants	
• Remove park housing	\$21,750
Remove mobile homes, pads, and road	
Land reclamation with native plants	
• Construct new maintenance area.	
Relocate on 2-acre site and use existing infrastructure	\$1,218,700
Site prep and new construction	
Administration building furnishing	
10 KW generator with shelter	
Flammable materials stroage	
Storage building (unheated/wood)	
Chain link fence and gate	
Paved parking and parking lot lighting	
Directional/informational sign	
• Relocate maintenance area to undeveloped 2-acre site (additional costs)	\$21,850
Entrance road construction	
• Relocate First Flight concession	\$80,750
Medium clear/grub	
Remove building	
Construct ranger station and sanitary facility	
Paved parking	
Directional/informational sign	
Subtotal Gross Construction Costs	\$21,524,800
Advance and Project Planning Costs.....	\$5,381,200
Alternative 2B Total Project Costs	\$26,906,000

* Price based on 1991 Means Facilities Cost Data

**To be determined by findings of CRS

***Based on costs found in Zion Canyon 1994 DCP and NPS draft Alternative Transportation Modes Feasibility Study

Septic design for 3500 visitors and a peak of 5000/day

Wright Brothers National Memorial
THE ALTERNATIVES

Alternative 2C: Construct a new visitor/administrative facility west of U.S. 158.
Entrance off U.S. 158. Peak use season parking on 15.69-acre tract with a peak use
season shuttle service.

<u>Development Item</u>	<u>Gross Construction Costs</u>
• Remove existing visitor center and parking area	\$322,500
Building removal	
Underground storage tank removal	
Road obliteration	
Land reclamation with native plants	
• Entrance and parking	\$1,141,300
Main entrance and roadway signs	
Clear vegetation	
Entrance road construction	
Parking area (225 vehicles)	
Clear vegetation	
Off-season parking with 125 spaces	
• Fee collection plaza	\$86,500
2 toll booths	
• Shuttle system***	\$890,500
Power units (3)	
Trailer units (6)	
Shuttle storage shed	
• New visitor center	\$8,058,800
Site prep and new construction	
Administrative building furnishing	
Flagpole	
Visitor center furnishing	
VC landscaping, planting, and site work	
• Interpretive/commemorative circulation	\$9,539,300
Interpretative display planning and production	
Artifact conservation	
Waysides and planning	
Video planning, production, and projection	
Interactive video system	
Surface stabilized trail (15,515 lf)	
• Stabilize monument**	\$115,300
• Vegetation screens and management	\$136,200
Along Highway 158	
Remove/thin vegetation at airstrip/First Flight area	
Remove/thin vegetation between airstrip and West Hill	

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Table 2 continued

<u>Development Item</u>	<u>Gross Construction Costs</u>
• Remove maintenance area	\$109,900
Building and pad removal	
Road obliteration	
Land reclamation with native plants	
• Remove superintendent's house	\$38,750
Building and road removal	
Land reclamation with native plants	
• Remove park housing	\$21,750
Remove mobile homes, pads, and road	
Land reclamation with native plants	
• Construct new maintenance area.	
Relocate on 2-acre site and use existing infrastructure	\$1,218,700
Site prep and new construction	
Administration building furnishing	
10 KW generator with shelter	
Flammable materials stroage	
Storage building (unheated/wood)	
Chain link fence and gate	
Paved parking and parking lot lighting	
Directional/informational sign	
• Relocate maintenance area to undeveloped 2-acre site (additional costs)	\$21,850
Entrance road construction	
• Relocate First Flight concession	\$80,750
Medium clear/grub	
Remove building	
Construct ranger station and sanitary facility	
Paved parking	
Directional/informational sign	
Subtotal Gross Construction Costs	\$21,782,100
Advance and Project Planning Costs.....	\$5,445,500

Alternative 2C Total Project Costs **\$27,227,600**

**To be determined by findings of CRS

***Based on costs found in Zion Canyon 1994 DCP and NPS draft Alternative Transportation Modes
Feasibility Study

Septic design for 3500 visitors and a peak of 5000/day

Alternative 3A: Construct a new visitor/administrative facility west of U.S. 158. entrance and exit off Colington Road.

<u>Development Item</u>	<u>Gross Construction Costs</u>
<ul style="list-style-type: none">• Remove existing visitor center and parking area \$386,500<ul style="list-style-type: none">Building, parking lot, and road removalUnderground storage tank removalLand reclamation with native plants	
<ul style="list-style-type: none">• Entrance and parking \$825,800<ul style="list-style-type: none">Main entrance and roadway signsClear vegetationEntrance road constructionParking area for 225 vehicles	
<ul style="list-style-type: none">• Fee collection plaza \$129,700<ul style="list-style-type: none">3 toll booths	
<ul style="list-style-type: none">• New visitor center \$8,058,800<ul style="list-style-type: none">Site prepNew constructionAdministrative and visitor center furnishingFlagpole, VC landscaping, planting, and site work	
<ul style="list-style-type: none">• Interpretive/commemorative circulation \$9,547,300<ul style="list-style-type: none">Interpretative display planning and productionArtifact conservationWayside and production (5 porcelain enamel)Video planning, production, and projectionInteractive video systemSurface stabilized trail (15,700 lf)Corrugated metal pipe for ditch crossing	
<ul style="list-style-type: none">• Stabilize monument** \$115,300	
<ul style="list-style-type: none">• Vegetation screens and management \$136,200<ul style="list-style-type: none">Along Highway 158Remove/thin vegetation at airstrip/First Flight areaRemove/thin vegetation between airstrip and West Hill	
<ul style="list-style-type: none">• Remove maintenance area \$109,900<ul style="list-style-type: none">Building, pad, and road removalLand reclamation with native plants	
<ul style="list-style-type: none">• Remove superintendent's house \$38,750<ul style="list-style-type: none">Building and road removalLand reclamation with native plants	

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Table 2 continued

<u>Development Item</u>	<u>Gross Construction Costs</u>
<ul style="list-style-type: none"> • Remove park housing Remove mobile homes, pads, and road Land reclamation with native plants 	\$21,750
<ul style="list-style-type: none"> • Construct new maintenance area. Relocate on 2-acre site and use existing infrastructure Site prep and new construction Administration building furnishing 10 KW generator with shelter Flammable materials stroage Storage building (unheated/wood) Chain link fence and gate Paved parking and parking lot lighting Directional/informational sign 	\$1,218,700
<ul style="list-style-type: none"> • Relocate maintenance area to undeveloped 2-acre site (additional costs) Entrance road construction 	\$21,850
<ul style="list-style-type: none"> • Relocate First Flight concession Medium clear/grub Remove building Construct ranger station and sanitary facility Paved parking Directional/informational sign 	\$80,750
Subtotal Gross Construction Costs.....	\$26,691,350
Advance and Project Planning Costs.....	\$6,672,850
Alternative 3A Total Project Costs	\$33,364,200

* Price based on 1991 Means Facilities Cost Data

**To be determined by findings of CRS

Septic design for 3500 visitors and a peak of 5000/day

Alternative 3B: Construct a new visitor/administrative facility west of U.S. 158. Entrance off Colington Road. Peak use season parking on Veterans Drive with a peak use season shuttle service.

<u>Development Item</u>	<u>Gross Construction Costs</u>
<ul style="list-style-type: none">• Remove existing visitor center and parking area Building, parking lot, and road removal Underground storage tank removal Land reclamation with native plants	\$347,800
<ul style="list-style-type: none">• Entrance and parking Main entrance and roadway signs Clear vegetation Entrance road construction Parking area for 225 vehicles Clear vegetation Off-season parking with 125 spaces	\$1,265,100
<ul style="list-style-type: none">• Fee collection plaza 3 toll booths	\$86,500
<ul style="list-style-type: none">• Shuttle system*** Power unit s (3) Trailer units (6) Shuttle storage shed	\$890,500
<ul style="list-style-type: none">• New visitor center Site prep and new construction Administrative and visitor center furnishing Flagpole, VC landscaping, planting, and site work	\$8,058,800
<ul style="list-style-type: none">• Interpretive/commemorative circulation Interpretative display planning and production Artifact conservation Wayside planning and production (5 porcelain enamel) Video planning, production, and projection Interactive video system Surface stabilized trail (15,500 lf)	\$9,539,300
<ul style="list-style-type: none">• Stabilize monument **	\$115,300
<ul style="list-style-type: none">• Vegetation screens and management Along Highway 158 Remove/thin vegetation at airstrip/First Flight area Remove/thin vegetation between airstrip and West Hill	\$136,200
<ul style="list-style-type: none">• Remove maintenance area Building, pad, and road removal Land reclamation with native plants	\$109,900

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Table 2 continued

<u>Development Item</u>	<u>Gross Construction Costs</u>
<ul style="list-style-type: none"> • Remove superintendent's house \$38,750 Building and road removal Land reclamation with native plants 	
<ul style="list-style-type: none"> • Remove park housing \$21,750 Remove mobile homes, pads, and road Land reclamation with native plants 	
<ul style="list-style-type: none"> • Construct new maintenance area. Relocate on 2-acre site and use existing infrastructure \$1,218,750 Site prep and new construction Administration building furnishing 10 KW generator w/shelter Flammable materials stroage Storage building (unheated/wood) Chain link fence and gate Paved parking and parking lot lighting Directional/informational sign 	
<ul style="list-style-type: none"> • Relocate maintenance area to undeveloped 2-acre site (additional costs) \$21,850 Entrance road construction 	
<ul style="list-style-type: none"> • Relocate First Flight concession \$80,750 Medium clear/grub Remove building Construct ranger station and sanitary facility Paved parking Directional/informational sign 	
<hr/>	
Subtotal Gross Construction Costs.....	\$21,931,250
Advance and Project Planning Costs	\$5,482,800
<hr/>	
Alternative 3B Total Project Costs	\$27,414,050
<p>* Price based on 1991 Means Facilities Cost Data</p> <p>** To be determined by findings of CRS</p> <p>*** Based on costs found in Zion Canyon 1994 DCP and NPS draft Alternative Transportation Modes Feasibility Study</p> <p>Septic design for 3500 visitors and a peak of 5000/day</p>	

ENVIRONMENTAL ASSESSMENT

Introduction

This section evaluates the impacts of implementing any of the proposed alternatives. Each alternative is discussed; the effect on the park of each alternative's development is also presented. Impacts to visitors, natural resources, cultural resources, aesthetic and scenic resources, and staffing are discussed.

ALTERNATIVE ONE: CONTINUE CURRENT OPERATIONS

Alternative 1 would continue and make minor modifications to the current operations of the National Park Service at Wright Brothers National Memorial. Several changes prompted by the insufficiencies of the visitor/administrative facility, fee collection, traffic flow, and the condition of the pylon would occur. Operations at the memorial would not continue, nor sustain slight increases in visitation, without some basic modifications.

Impacts on Cultural Resources

Increased numbers of visitors to the park associated with the centennial would have a minimal effect of the park's cultural resources. Visitor traffic would be channelled on the park's road and trail system. Vehicles continuing to drive around the park would continue to emit particulate matter and have some effect on and possibly cause some long-term harm to the park's monuments. As vehicle exhaust standards increase the resultant long-term effects could ameliorate. Storage of Wright brother-related artifacts at Fort Raleigh National Historic Site would provide adequate protection. Actions recommended by the Historic Resource Study would repair damage to the pylon caused by the harsh coastal

climate. The Southeast Archeological Center of the National Park Service has assured that activities proposed under this alternative would cause no harm to any archeological resources.

Impacts on Natural Resources

Vegetation and wildlife

Selective thinning or removal of vegetation would decrease some habitat for wildlife, however selective plantings of native vegetation would provide additional habitat. Reverting the area of the superintendent's house and the employee housing compound to native vegetation would increase wildlife habitat.

Although completing the bicycle trail would result in some disturbance of wildlife habitat and loss of vegetation, increased bicycle use would bring about a slight reduction of vehicle exhaust and particulate matter on the west side of the park.

Floodplains

Under this alternative, there would be no development in the 100-year floodplain. Thus, no impacts on floodplains would occur.

Wetlands

Under, this alternative, there would be no development in wetlands.

Prime and Unique Farmlands

No effects would occur on prime and unique farmlands.

Impacts on Socioeconomic Conditions

The overall numbers of visitors coming to the park would continue to grow steadily. Directional signs along highways would lure visitors who might otherwise not be aware of the park's existence.

Impacts on Visitor Circulation

Visitor movement within the park would be enhanced. Stabilizing and adding trails would permit visitors of all ages and abilities to reach many of the park's important resources. Visitors could still choose to drive around a portion of the park and elect to view the park by air. The drop-off/pick up area adjacent to the Visitor Center would facilitate visitor movement during inclement weather or for those with limited physical abilities.

Entry into and exiting from the park would be enhanced significantly with the implementation of several traffic control devices (deceleration lane, dedicated exit lane) and fee collection system. Activities and spaces in the Visitor Center would be redesigned to facilitate visitor circulation, however crowding during the peak use season and the centennial period would be anticipated. The visitors' experience would be only slightly improved with the renovation of the Visitor Center.

Impacts on Aesthetic Resources and Scenic Resources

Visitor transition from busy U.S. 158 into the park would continue to be abrupt. This sharp transition would be somewhat softened by the introduction of a vegetative screen in the fee collection plaza area. Vegetative screens would also help focus the visitors attention within the park rather than being distracted by vehicles whizzing by along U.S. 158 or modern developments near the park boundaries. Vegetative screens would also conceal the maintenance complex from the visitors view. Appropriate trimming or removal of some vegetation along U.S. 158 would ensure that vehicles would have a clear view of an illuminated pylon. Selective removal or trimming of vegetation along the airstrip would enhance the visitors view of the airplanes taking off and landing.

Retaining the Visitor Center and parking area in the same location prolongs an intrusion on the landscape. The Visitor Center is located too

close to the First Flight area, a primary historic resource, and too far away from Big Kill Devil Hill and the pylon. The memorial landscape is further compromised by the continued presence of private vehicular traffic.

Impacts on Staffing

No increases in staff are anticipated under this alternative.

ALTERNATIVE 2A: CONSTRUCT A NEW VISITOR/ADMINISTRATIVE FACILITY WEST OF U.S. 158 WHILE REDESIGNING THE U.S. 158 ENTRANCE TO THE PARK

Concept

The construction of a new visitor/administrative facility designed to inspire park visitors highlights this alternative. Although visitors would continue to enter the park from U.S. 158, a redesigned intersection would alleviate vehicle entrance and egress.

Impacts on Cultural Resources

Increased numbers of visitors to the park associated with the 100-year centennial would have a moderate effect on the park's cultural resources. Visitor traffic would be channelled on the park's road and trail system. Vehicles continuing to drive around the park would continue to emit particulate matter and have some effect on and possibly cause some long-term harm to the park's monuments. As vehicle exhaust standards increase the resultant long-term effects could ameliorate. Storage of Wright brother-related artifacts at Fort Raleigh National Historic Site would provide adequate protection. The Southeast Archeological Center of the National Park Service has assured

that activities proposed under this alternative would cause no harm to any archeological resources.

The deceleration/stacking lanes combined with the fee collection plaza would reduce the amount of vehicle exhaust in the park. Actions recommended by the Historic Resource Study would repair damage to the pylon from the harsh coastal climate.

Impacts on Natural Resources

Vegetation and Wildlife

Selective thinning or removal of vegetation would decrease some habitat for wildlife, however selective plantings of native vegetation would provide additional habitat. Reverting the area of the superintendent's house and the employee housing compound to native vegetation would increase wildlife habitat. Removing and revegetating the area containing the 1960s' Visitor Center and parking and replacing them with a larger structure and approximately twice the number of parking slots would result in a net decrease of approximately two-and-one-half acres of vegetation and loss of habitat. Road, maintenance area, and concession complex removal and replacement would result in some short-term disturbance of vegetation and wildlife habitat.

Although completing the bicycle trail would result in some disturbance of wildlife habitat and loss of vegetation, increased bicycle use would bring about a slight reduction of vehicle exhaust and particulate matter on the west side of the park.

Floodplains

Under this alternative, there would be no development in the 100-year floodplain. Thus, no impacts on floodplains would occur.

Wetlands

Under, this alternative, there would be no development in wetlands.

Prime and Unique Farmlands

No effects would occur on prime and unique farmlands.

Impacts on Socioeconomic Conditions

As the centennial of flight approaches, the overall numbers of visitors coming to and being accommodated by the park would continue to grow steadily. During the centennial year, the park would become a major destination. The park would serve an increasingly diversified audience. As shoulder season visitation to the Outer Banks increases, the park would expect a similar rise in the number of non-peak use season visitors.

The increased visitation generated by the interest in the centennial of flight would engender a positive effect of the area's economy. Commercial services on the Outer Banks (hotels, restaurants, book stores) would benefit significantly.

By constructing deceleration lanes and the jug handle turn and installing an enhanced signal system, traffic would flow fairly smoothly along U.S. 158. The signal light at the park's entrance would inhibit an unimpeded flow of traffic.

Impacts on Visitor Circulation

Visitor movement within the park would be enhanced. Stabilizing and adding trails would permit visitors of all ages and abilities to reach many of the park's important resources. Visitors could still choose to drive around a portion of the park and elect to view the park by air. The drop-off/pick up area adjacent to the Visitor Center would facilitate visitor movement during inclement weather or for those with limited physical abilities. The configuration of the road system and the management of vehicular traffic would minimize to a great extent possible conflicts between pedestrians and vehicles.

Entry into and exiting from the park would be enhanced significantly with the implementation of several traffic control devices (deceleration lane,

dedicated exit lane, jug handle turn) and fee collection and reservation systems. Activities and spaces in the Visitor Center would be designed to facilitate visitor circulation; the reservation system employed with the First Flight room talk and mini-IMAX theater would help limit crowding.

Impacts on Aesthetic Resources and Scenic Resources

Visitor transition from busy U.S. 158 into the park would continue to be abrupt. This sharp transition would be somewhat softened by the introduction of a vegetative screen in the fee collection plaza area. Vegetative screens would also help focus the visitors attention within the park rather than being distracted by vehicles whizzing by along U.S. 158 or modern developments near the park boundaries. Appropriate trimming or removal of some vegetation along U.S. 158 would ensure that vehicles would have a clear view of an illuminated pylon. Selective removal or trimming of vegetation along the airstrip would enhance the visitors view of the airplanes taking off and landing. By removing intrusions such as the superintendent's house and the maintenance complex, visitor appreciation and focus of the Wright brothers story would be improved.

The parking area, located between the Visitor Center and U.S. 158, would be excluded from the visitors' view while they toured the memorial's grounds. Because the Visitor Center would be located approximately equidistant from the First Flight area and the pylon, visitors would gain a clear panoramic view of these key resources. Relocating the road from the entrance to the circular drive would eliminate vehicle traffic between the Visitor Center and the First Flight area. This view would be unobstructed by vehicles. During peak use season the intrusion of vehicles onto the commemorative landscape would be kept to a minimum. However, at other times, vehicles would still intrude upon the landscape by circling Big Kill Devil Hill.

Impacts on Staffing

An additional staff member (projectionist) would be needed under this alternative unless this service would be contracted. Adjustments in ranger hours would occur.

ALTERNATIVE 2B: CONSTRUCT A NEW VISITOR/ADMINISTRATIVE FACILITY EAST OF U.S. 158 ON THE 15.69-ACRE TRACT/PROVIDE YEAR ROUND SHUTTLE SERVICE

Concept

A new visitor/administrative facility would be designed to inspire park visitors and relate the story of the Wright brothers. It would be located on the vacant 15.69-acre tract between U.S. 158 and the beach road (North Carolina 12). Year-round, visitors would board a shuttle at the Visitor Center, cross U.S. 158, and enter the park.

Impacts on Cultural Resources

Increased numbers of visitors to the park associated with the 100-year centennial would have a minimal effect on the park's cultural resources. A shuttle would bring visitors into the park thus greatly reducing the exposure of cultural resources to vehicle exhaust and particulates. Visitor traffic would be channelled on the park's road and trail system. Privately-owned vehicles would be confined to the parking area on the 15.69-acre tract.

Storage of Wright brother-related artifacts at Fort Raleigh National Historic Site would provide adequate protection. The Southeast Archeological Center of the National Park Service has assured that activities proposed under this alternative would cause no harm to any archeological resources.

The deceleration/stacking lanes combined with the fee collection plaza would reduce the amount of vehicle exhaust in the Visitor Center area. Actions recommended by the Historic Resource Study would repair damage to the pylon from the harsh coastal climate.

Impacts on Natural Resources

Vegetation and Wildlife

Selective thinning or removal of vegetation would decrease some habitat for wildlife, however selective plantings of native vegetation would provide additional habitat. Reverting the area of the superintendent's house and the employee housing compound to native vegetation would increase wildlife habitat. Removing and revegetating the area containing the 1960s' Visitor Center and parking and replacing them with a larger structure and approximately twice the number of parking slots would result in a net increase of two-and-one-half acres of vegetation removal and loss of habitat. Adding beach parking on the 15.69-acre tract would disturb another acre of vegetation. Road, maintenance area, and concession complex removal and replacement would result in some short-term disturbance of vegetation and wildlife habitat.

Although completing the bicycle trail would result in some disturbance of wildlife habitat and loss of vegetation, increased bicycle use would bring about a slight reduction of vehicle exhaust and particulate matter on the west side of the park.

Floodplains

Under this alternative, there would be no development in the 100-year floodplain. Thus, no impacts on floodplains would occur.

Wetlands

Under, this alternative, there would be no development in wetlands.

Prime and Unique Farmlands

No effects would occur on prime and unique farmlands.

Impacts on Socioeconomic Conditions

As the centennial of flight approaches, the overall numbers of visitors coming to and being accommodated by the park would continue to grow steadily. During the centennial year, the park would become a major destination. The park would serve an increasingly diversified audience. As shoulder season visitation to the Outer Banks increases, the park would expect a similar rise in the number of non-peak use season visitors.

The increased visitation generated by the interest in the centennial of flight would engender a positive effect of the area's economy. Commercial services on the Outer Banks (hotels, restaurants, book stores) would benefit significantly.

Providing an area for the town to develop public beach parking would ease the strain on visitors and residents finding a safe place to leave their vehicles.

Traffic flow along U.S. 158 in front of the park would be enhanced by the deceleration lanes and signal system. The traffic signal, however, would interrupt a completely free flow.

Impacts on Visitor Circulation/Experience

Visitor movement within the park would be enhanced. Stabilizing and adding trails would permit visitors of all ages and abilities to reach many of the park's important resources. Visitors would no longer have the option of driving their private vehicles around the park. Shuttles would provide the only means of ground, motorized transportation, thus ensuring that during the peak use season private vehicles would not interfere with the visitors' experience. Regular shuttle service would assure that visitors easily and efficiently traversed the memorial and returned to the Visitor Center. The concession-operated air service would supplement visitor circulation. The drop-off/pick up area

adjacent to the Visitor Center would facilitate visitor movement during inclement weather or for those with limited physical abilities.

Entry into and exiting from the park would be enhanced significantly with the implementation of several traffic control devices (deceleration lane, dedicated exit lane, traffic signal) and fee collection and reservation systems. Activities and spaces in the Visitor Center would be designed to facilitate visitor circulation; the reservation system employed with the First Flight auditorium talk and mini-IMAX theater would help limit crowding.

Impacts on Aesthetic Resources and Scenic Resources

Visitor transition from busy U.S. 158 into the park would continue to be abrupt. This sharp transition would be somewhat softened by the introduction of a vegetative screen along U.S. 158. Vegetative screens would also help focus the visitors attention within the park rather than being distracted by vehicles whizzing by along U.S. 158 or modern developments near the park boundaries. Appropriate trimming or removal of some vegetation along U.S. 158 would ensure that vehicles would have a clear view of an illuminated pylon. Selective removal or trimming of vegetation along the airstrip would enhance the visitors view of the airplanes taking off and landing. By removing intrusions such as the superintendent's house and the maintenance complex, visitor appreciation and focus of the Wright brothers story would be strengthened.

Because the Visitor Center would be separated from the memorial's grounds by U.S. 158, the visitor's attention to the Wright brothers story would be interrupted. Instead of stepping out of the Visitor Center and peering across at the First Flight area and the pylon, the visitor would board a shuttle, cross U.S. 158, and then enter the memorial. From this point the views and experience would be unobstructed, subject only to other visitors, the occasional shuttle, or planes taking off and landing. However, vehicles would still intrude upon the landscape by circling Big Kill Devil Hill.

Impacts on Staffing

An additional staff member (projectionist) would be needed under this alternative unless this service would be contracted. Adjustments in ranger hours would occur.

ALTERNATIVE 2C: CONSTRUCT A NEW VISITOR/ADMINISTRATIVE FACILITY WEST OF U.S. 158/ENTRANCE OFF U.S. 158/PEAK USE SEASON PARKING ON 15.69-ACRE TRACT WITH A PEAK USE SEASON SHUTTLE SERVICE

Concept

A new visitor/administrative facility would be designed to inspire park visitors and relate the story of the Wright brothers. It would be located on the west of U.S. 158. During the peak use season (June through Labor Day) visitors would board a shuttle at the parking area located on the 15.69-acre tract, cross U.S. 158, and ride to the Visitor Center. During the rest of the year, visitors would park in the parking area adjacent to the Visitor Center.

Impacts on Cultural Resources

Increased numbers of visitors to the park associated with the 100-year centennial would have a minimal effect on the park's cultural resources. From June through early September, a shuttle would bring visitors into the park thus greatly reducing the exposure of cultural resources to vehicle exhaust and particulates. Privately-owned vehicles would be confined to the parking area on the 15.69-acre tract. During the remainder of the year, visitor traffic would be channelled on the park's road and trail system.

Storage of Wright brother-related artifacts at Fort Raleigh National Historic Site would provide adequate protection. The Southeast Archeological Center of the National Park Service has assured that activities proposed under this alternative would cause no harm to any archeological resources.

The deceleration/stacking lanes combined with fee collection plaza would reduce the amount of vehicle exhaust in the Visitor Center area. Actions recommended by the Historic Resource Study would repair damage to the pylon from the harsh coastal climate.

Impacts on Natural Resources

Vegetation and Wildlife

Selective thinning or removal of vegetation would decrease some habitat for wildlife, however selective plantings of native vegetation would provide additional habitat. Reverting the area of the superintendent's house and the employee housing compound to native vegetation would increase wildlife habitat. Removing and revegetating the area containing the 1960s' Visitor Center and parking and replacing them with a larger structure and the same number of parking slots would result in a net increase of one acre of vegetation removal and loss of habitat. Adding beach parking on the 15.69-acre tract would disturb another acre of vegetation. Road, maintenance area, and concession complex removal and replacement would result in some short-term disturbance of vegetation and wildlife habitat.

Although completing the bicycle trail would result in some disturbance of wildlife habitat and loss of vegetation, increased bicycle use would bring about a slight reduction of vehicle exhaust and particulate matter on the west side of the park.

Floodplains

Under this alternative, there would be no development in the 100-year floodplain. Thus, no impacts on floodplains would occur.

Wetlands

Under, this alternative, there would be no development in wetlands.

Prime and Unique Farmlands

No effects would occur on prime and unique farmlands.

Impacts on Socioeconomic Conditions

As the centennial of flight approaches, the overall numbers of visitors coming to and being accommodated by the park would continue to grow steadily. During the centennial year, the park would become a major destination. The park would serve an increasingly diversified audience. As shoulder season visitation to the Outer Banks increases, the park would expect a similar rise in the number of non-peak use season visitors.

The increased visitation generated by the interest in the centennial of flight would engender a positive effect of the area's economy. Commercial services on the Outer Banks (hotels, restaurants, book stores) would benefit significantly. Providing an area for the town to develop public beach parking would ease the strain on visitors and residents finding a safe place to leave their vehicles.

Traffic flow along U.S. 158 in front of the park would be enhanced by the deceleration lanes and signal system. The traffic signal, however, would interrupt a completely free flow.

Impacts on Visitor Circulation/Experience

Visitor movement within the park would be enhanced. Stabilizing and adding trails would permit visitors of all ages and abilities to reach many of the park's important resources. Visitors would no longer have the option of driving their private vehicles around the park. Shuttles would provide the only means of ground, motorized transportation, thus ensuring that during the peak use season private vehicles would not interfere with the visitors' experience. Regular shuttle service would

assure that visitors easily and efficiently traversed the memorial and returned to the Visitor Center. The concession-operated air service would supplement visitor circulation. The drop-off/pick up area adjacent to the Visitor Center would facilitate visitor movement during inclement weather or for those with limited physical abilities.

Entry into and exiting from the park would be enhanced significantly with the implementation of several traffic control devices (deceleration lane, dedicated exit lane, traffic signal) and fee collection and reservation systems. Activities and spaces in the Visitor Center would be designed to facilitate visitor circulation; the reservation system employed with the First Flight auditorium talk and mini-IMAX theater would help limit crowding.

Impacts on Aesthetic Resources and Scenic Resources

Visitor transition from busy U.S. 158 into the park would continue to be abrupt. This sharp transition would be somewhat softened by the introduction of a vegetative screen in the fee collection plaza area. Vegetative screens would also help focus the visitors attention within the park rather than being distracted by vehicles whizzing by along U.S. 158 or modern developments near the park boundaries. Appropriate trimming or removal of some vegetation along U.S. 158 would ensure that vehicles would have a clear view of an illuminated pylon. Selective removal or trimming of vegetation along the airstrip would enhance the visitors view of the airplanes taking off and landing. By removing intrusions such as the superintendent's house and the maintenance complex, visitor appreciation and focus of the Wright brothers story would be improved.

From September through May, the parking area, located between the Visitor Center and U.S. 158, would be excluded from the visitors' view while they toured the memorial's grounds. Because the Visitor Center would be located approximately equidistant from the First Flight area and the pylon, visitors would gain a clear panoramic view of these key resources. Redirecting vehicles from the road between the entrance and the circular drive

would eliminate vehicles obstructing the view from the Visitor Center to the First Flight area. However, vehicles would still intrude upon the landscape by circling Big Kill Devil Hill. During peak use season visitors would encounter pedestrians and the occasional shuttle during their tours. The negative effects would be minor.

Impacts on Staffing

An additional staff member (projectionist) would be needed under this alternative unless this service would be contracted. Adjustments in ranger hours would occur.

ALTERNATIVE 3A: CONSTRUCT A NEW VISITOR/ADMINISTRATIVE FACILITY WEST OF U.S. 158/ ENTRANCE AND EXIT OFF COLINGTON ROAD

Concept

The construction of a new visitor/administrative facility designed to inspire park visitors highlights this alternative. Reminiscent of the 1930s' design, visitors would again enter and exit the park from Colington Road. Thus visitors first impression of the park would be the view of Big Kill Devil Hill and the pylon. Visitors would encounter a park-like experience on their journey to the Visitor Center.

Impacts on Cultural Resources

Increased numbers of visitors to the park associated with the 100-year centennial would have a moderate effect on the park's cultural resources. Visitor traffic would be channelled on the park's road and trail system. Visitors driving around the park would continue to emit particulate matter and have some effect on and possibly cause some long-term harm to the park's monuments. As vehicle exhaust standards increase the resultant long-term

effects could ameliorate. Storage of Wright brother-related artifacts at Fort Raleigh National Historic Site would provide adequate protection. The Southeast Archeological Center of the National Park Service has assured that activities proposed under this alternative would cause no harm to any archeological resources.

The deceleration/stacking lanes combined with the fee collection plaza would reduce the amount of vehicle exhaust in the park. Actions recommended by the Historic Resource Study would repair damage to the pylon from the harsh coastal climate.

Impacts on Natural Resources

Vegetation and Wildlife

Selective thinning or removal of vegetation would decrease some habitat for wildlife, however selective plantings of native vegetation would provide additional habitat. Reverting the area of the superintendent's house and the employee housing compound to native vegetation would increase wildlife habitat. Removing and revegetating the area containing the 1960s' Visitor Center and parking and replacing them with a larger structure and approximately twice the number of parking slots would result in a net decrease of approximately two-and-one-half acres of vegetation and loss of habitat. Road, maintenance area, and concession complex removal and replacement would result in some short-term disturbance of vegetation and wildlife habitat.

Although completing the bicycle trail would result in some disturbance of wildlife habitat and loss of vegetation, increased bicycle use would bring about a slight reduction of vehicle exhaust and particulate matter on the west side of the park.

Floodplains

Under this alternative, there would be no development in the 100-year floodplain. Thus, no impacts on floodplains would occur.

Wetlands

Under, this alternative, there would be no development in wetlands.

Prime and Unique Farmlands

No effects would occur on prime and unique farmlands.

Impacts on Socioeconomic Conditions

As the centennial of flight approaches, the overall numbers of visitors coming to and being accommodated by the park would continue to grow steadily. During the centennial year, the park would become a major destination. The park would serve an increasingly diversified audience. As shoulder season visitation to the Outer Banks increases, the park would expect a similar rise in the number of non-peak use season visitors.

The increased visitation generated by the interest in the centennial of flight would engender a positive effect of the area's economy. Commercial services on the Outer Banks (hotels, restaurants, book stores) would benefit significantly.

Providing an area for the town to develop public beach parking would ease the strain of visitors and residents finding a safe place to leave their vehicles.

As a result of installing the park's entrance off Colington Road, traffic along U.S. 158 in front of the park would flow smoothly, not impeded by a traffic signal. The intersections of Colington Road/U.S. 158 and Colington Road/Veterans Drive would experience some increases in congestion which would be managed by an enhanced traffic signal system and road improvements. Some congestion could occur between park traffic and school/municipal traffic from Veterans Drive.

Impacts on Visitor Circulation/Experience

Visitor movement within the park would be enhanced. Stabilizing and adding trails would permit visitors of all ages and abilities to reach many

of the park's important resources. Visitors could still choose to drive around a portion of the park and elect to view the park by air. The drop-off/pick up area adjacent to the Visitor Center would facilitate visitor movement during inclement weather or for those with limited physical abilities. The configuration of the road system would minimize possible conflicts between pedestrians and vehicles.

Entry into and exiting from the park would be enhanced significantly with the implementation of several traffic control devices (deceleration lane, traffic signals) and fee collection and reservation systems. Entry into the park would be a more pleasant experience as visitors would leave busy U.S. 158 and turn onto Colington Road. Once in the park, visitors would be greeted by Big Kill Devil Hill and the pylon before driving a short way to the Visitor Center. Activities and spaces in the Visitor Center would be designed to facilitate visitor circulation; the reservation system employed with the First Flight auditorium talk and mini-IMAX theater would help limit crowding.

Impacts on Aesthetic Resources and Scenic Resources

Visitor transition from busy U.S. 158 and Colington Road into the park would be softened. Vegetative screening along the park's boundary and in the fee collection plaza area would ease the visitor into a parklike setting. This transition would be further enhanced by having the visitor encounter Big Kill Devil Hill before stopping at the fee collection area. Vegetative screens would also help focus the visitors attention within the park rather than being distracted by vehicles whizzing by along U.S. 158 or modern developments near the park boundaries. Appropriate trimming or removal of some vegetation along U.S. 158 would ensure that vehicles would have a clear view of an illuminated pylon. Selective removal or trimming of vegetation along the airstrip would enhance the visitors view of the airplanes taking off and landing. By removing intrusions such as the superintendent's house and the maintenance complex, visitor appreciation and focus of the Wright brothers story would be improved.

The parking area, located between the Visitor Center and U.S. 158, would be excluded from the visitors' view while they toured the memorial's grounds. Because the Visitor Center would be located approximately equidistant from the First Flight area and the pylon, visitors would gain a clear panoramic view of these key resources. Relocating the road that ran between the entrance and the circular drive would eliminate vehicles obstructing the view from the Visitor Center to the First Flight area. However, vehicles would still intrude upon the landscape by circling Big Kill Devil Hill.

Impacts on Staffing

An additional staff member (projectionist) would be needed under this alternative unless this service would be contracted. Adjustments in ranger hours would occur.

ALTERNATIVE 3B: CONSTRUCT A NEW VISITOR/ADMINISTRATIVE FACILITY WEST OF U.S. 158/ENTRANCE OFF COLINGTON ROAD/PEAK USE SEASON PARKING OFF VETERANS DRIVE WITH A PEAK USE SEASON SHUTTLE SERVICE

Concept

A new visitor/administrative facility would be designed to inspire park visitors and relate the story of the Wright brothers. It would be located west of U.S. 158. During the peak use season (June through Labor Day) visitors would board a shuttle at a remote parking area located off Veterans Drive, cross Colington Road, and ride to the Visitor Center. During the rest of the year, vehicles would enter the park from Colington Road and proceed to the Visitor Center.

Impacts on Cultural Resources

Increased numbers of visitors to the park associated with the 100-year centennial would have a minimal effect on the park's cultural resources. From June through early September, a shuttle would bring visitors into the park thus greatly reducing the exposure of cultural resources to vehicle exhaust and particulates. Privately-owned vehicles would be confined to the parking area off Veterans Drive. During the remainder of the year, visitor traffic would be channelled on the park's road and trail system.

Storage of Wright brother-related artifacts at Fort Raleigh National Historic Site would provide adequate protection. The Southeast Archeological Center of the National Park Service has assured that activities proposed under this alternative would cause no harm to any archeological resources.

The deceleration/stacking lanes combined with the fee collection plaza would lessen the amount of vehicle exhaust in the Visitor Center area. Actions recommended by the Historic Resource Study would repair damage to the pylon from the harsh coastal climate.

Impacts on Natural Resources

Vegetation and Wildlife

Selective thinning or removal of vegetation would decrease some habitat for wildlife, however selective plantings of native vegetation would provide additional habitat. Reverting the area of the superintendent's house and the employee housing compound to native vegetation would increase wildlife habitat. Removing and revegetating the area containing the 1960s' Visitor Center and parking and replacing them with a larger structure and the same number of parking slots would result in a net increase of one acre of vegetation removal and loss of habitat. Constructing the parking/shuttle staging area off Veterans Drive would result in removal of approximately two acres of vegetation and loss of wildlife habitat. Adding beach parking on the 15.69-acre tract would disturb an-

other acre of vegetation. Road, maintenance area, and concession complex removal and replacement would result in some short-term disturbance of vegetation and wildlife habitat.

Although completing the bicycle trail would result in some disturbance of wildlife habitat and loss of vegetation, increased bicycle use would bring about a slight reduction of vehicle exhaust and particulate matter on the west side of the park.

Floodplains

Under this alternative, there would be no development in the 100-year floodplain. Thus, no impacts on floodplains would occur.

Wetlands

Under, this alternative, there would be no development in wetlands.

Prime and Unique Farmlands

No effects would occur on prime and unique farmlands.

Impacts on Socioeconomic Conditions

As the centennial of flight approaches, the overall numbers of visitors coming to and being accommodated by the park would continue to grow steadily. During the centennial year, the park would become a major destination. The park would serve an increasingly diversified audience. As shoulder season visitation to the Outer Banks increases, the park would expect a similar rise in the number of non-peak use season visitors.

The increased visitation generated by the interest in the centennial of flight would engender a positive effect of the area's economy. Commercial services on the Outer Banks (hotels, restaurants, book stores) would benefit significantly. Providing an area for the town to develop public beach parking would ease the strain on visitors and residents finding a safe place to leave their vehicles.

As a result of installing the park's entrance off Colington Road, traffic along U.S. 158 in front of

the park would flow smoothly, not impeded by a traffic signal. The intersections of Colington Road/U.S. 158 and Colington Road/Veterans Drive would experience some increases in congestion which would be managed by an enhanced traffic signal system and road improvements. Some congestion could occur between park traffic and school/municipal traffic from Veterans Drive.

Impacts on Visitor Circulation/ Experience

Visitor movement within the park would be enhanced. Stabilizing and adding trails would permit visitors of all ages and abilities to reach many of the park's important resources. During the peak use season, visitors would no longer have the option of driving their private vehicles around the park. Shuttles would provide the only means of ground, motorized transportation, thus ensuring that during the peak use season private vehicles would not interfere with the visitors' experience. Regular shuttle service would assure that visitors easily and efficiently traversed the memorial and returned to the Visitor Center. The concession-operated air service would supplement visitor circulation. The drop-off/pick up area adjacent to the Visitor Center would facilitate visitor movement during inclement weather or for those with limited physical abilities.

Entry into and exiting from the park and remote parking area would be enhanced significantly with the implementation of several traffic control devices (deceleration lane, traffic signal) and fee collection and reservation systems. Entry into the park would be a more pleasant experience as visitors would leave busy U.S. 158 and turn onto Colington Road. Once in the park, visitors would be greeted by Big Kill Devil Hill and the pylon before driving a short way to the Visitor Center. Activities and spaces in the Visitor Center would be designed to facilitate visitor circulation; the reservation system employed with the First Flight room talk and mini-IMAX theater would help limit crowding in the Visitor Center.

Impacts on Aesthetic Resources and Scenic Resources

Visitor transition from busy U.S. 158 and Colington Road into the park would be softened. Vegetative screening along the park's boundary and in the fee collection plaza area would ease the visitor into a parklike setting. This transition would be further enhanced by having the visitor encounter Big Kill Devil Hill before stopping at the fee collection area. Vegetative screens would also help focus the visitors attention within the park rather than being distracted by vehicles whizzing by along U.S. 158 or modern developments near the park boundaries. Appropriate trimming or removal of some vegetation along U.S. 158 would ensure that vehicles would have a clear view of an illuminated pylon. Selective removal or trimming of vegetation along the airstrip would enhance the visitors view of the airplanes taking off and landing. By removing intrusions such as the superintendent's house and the maintenance complex, visitor appreciation and focus of the Wright brothers story would be improved.

From September through May, the parking area, located between the Visitor Center and U.S. 158, would be excluded from the visitors' view while they toured the memorial's grounds. Because the Visitor Center would be located approximately equidistant from the First Flight area and the pylon, visitors would gain a clear panoramic view of these key resources. Redirecting vehicles from the road between the entrance and the circular drive would eliminate vehicles obstructing the view from the Visitor Center to the First Flight area. However, vehicles would still intrude upon the landscape by circling Big Kill Devil Hill. During peak use season visitors would encounter pedestrians and the occasional shuttle during their tours. The negative effects would be minor.

Impacts on Staffing

An additional staff member (projectionist) would be needed under this alternative unless this service would be contracted. Adjustments in ranger hours would occur.

COMPLIANCE WITH FEDERAL AND STATE LAWS, EXECUTIVE ORDERS, AND REGULATIONS

In implementing the Wright Brothers National Memorial General Management Plan, the National Park Service would comply with all applicable laws and executive orders, including those listed below. Informal consultation with appropriate Federal, State, and local agencies has been done to prepare this document.

NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (NEPA)

The Draft General Management Plan-Environmental Assessment provides public disclosure for the planning and decision making process and the potential environmental consequences of actions and alternatives, as required by NEPA. Agency and public comments will be considered. The draft plan and environmental analysis will be reviewed in light of the comments. A final plan and environmental document will be published and will respond, either individually or through summaries, to all substantive comments. After publication of the final plan and environmental assessment, a record of decision will be published to document the final decision and the alternative considered, to identify the environmentally preferable alternative, and to describe whether all practicable means of avoiding environmental harm as a result of implementing the selected action have been adopted. At that time, the actions the final plan will be implemented.

SECTION 7 OF THE ENDANGERED SPECIES ACT OF 1973, AS AMENDED (16 USC 1531 ET SEQ.)

Section 7 requires all Federal agencies to consult with the U.S. Fish and Wildlife Service to ensure that any Federal action does not adversely affect the continued existence of listed species or

critical habitat. Consultation with Fish and Wildlife Service has revealed that there are no federally listed threatened or endangered species in the park. Thus, none of the alternatives identified in this general management plan would jeopardize any listed species or critical habitat. Further consultation would be carried out before construction to ensure that no newly listed species have been found on any of the sites.

EXECUTIVE ORDER 11988, "FLOODPLAIN MANAGEMENT"

All Federal agencies are required to avoid building in the 100-year floodplain unless no other practical alternative exists. No actions proposed in this plan would have an effect or would be affected by the 100-year floodplain.

EXECUTIVE ORDER 11990, "PROTECTION OF WETLANDS"

This order requires all Federal agencies to avoid, where possible, impacts on wetlands. No action proposed in this plan would have an effect on wetlands.

IMPACTS ON PRIME AND UNIQUE AGRICULTURAL LANDS IN IMPLEMENTING THE NATIONAL ENVIRONMENTAL POLICY ACT (45 FR 59189)

Federal agencies are required to analyze the impacts of Federal actions on agricultural lands, in accordance with the National Environmental Policy Act. No action proposed in this plan would have an effect on prime or unique agricultural lands.

CLEAN AIR ACT, AS AMENDED (42 USC 7401 ET SEQ.)

The Clean Air Act requires all Federal facilities to comply with existing Federal, State, and local air pollution control laws and regulations. All in-park activities would be in compliance with the State Air Quality Implementation Plan.

COASTAL ZONE MANAGEMENT ACT

Requires that Federal agencies having direct or indirect jurisdiction over action take into account the effect of those actions on areas in the coastal zone and allow the North Carolina Division of Coastal Management an opportunity to comment. These actions must be done in accord with the In compliance with the programmatic agreement, this document will be sent to the North Carolina Division of Coastal Management for comment. The National Park Service contacted the division early in the planning process who indicated that the plan's proposed actions would be in compliance with coastal management policies and regulations.

The National Park Service is mandated to preserve and protect its cultural resources through the Act of August 25, 1961, and through specific legislation such as the Antiquities Act of 1906, the National Environmental Policy Act of 1969, and the National Historic Preservation Act. Cultural resources at Wright Brothers National Memorial would be managed in accordance with these acts and in accordance with Chapter V of the National Park Service Management Policies, the Cultural Resources Management Guideline (NPS-28), and other relevant policy directives. In addition to following these directives, the planning team consulted with cultural resource staff of the National Park Service, the Southeast Archeological Center, the State of North Carolina Department of Cultural Resources, and others to evaluate the proposed actions while supporting the protection and preservation of the identified cultural resources.

ARCHITECTURAL BARRIERS ACT OF 1968 (42 USC 4151 ET SEQ.); AND, AS APPROPRIATE, AMERICANS WITH DISABILITIES ACT OF 1990 (PUBLIC LAW 101-336, 104 STAT. 327)

These acts require all facilities and programs developed to be accessible to disabled visitors.

SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT OF 1966, AS AMENDED (16 USC 470, ET SEQ.)

Section 106 requires that Federal agencies having direct or indirect jurisdiction over actions take into account the effect of those actions on National Register properties and allow the Advisory Council on Historic Preservation an opportunity to comment. These actions must be done in accord with the programmatic agreement completed by the National Park Service, the National Conference of Historic Preservation Offices, and the Advisory Council on Historic Preservation. In compliance with the programmatic agreement, this document will be sent to the North Carolina State Historic Preservation Office for comment. The National Park Service met with the State Historic Preservation Officer early in the planning process.

APPENDIX A

AGENCIES CONSULTED DURING PLAN PREPARATION

Federal

Federal Aviation Administration
Federal Highway Administration
Smithsonian Institution
U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service

State of New Jersey

Department of Transportation

State of North Carolina

Department of Cultural Resources, State Historic Preservation Office
Department of Transportation, Division of Aviation
Department of Transportation, Division Office, Elizabeth City
Division of Coastal Management, Elizabeth City

Local

Dare County Planning Office
Town of Kill Devil Hills

Organizations

Dare County Chamber of Commerce
Dare County Tourist Bureau
First Flight Society
North Carolina Power Company

APPENDIX B

STUDY TEAM

Russ Berry, Superintendent, Cape Hatteras Group

Mary Collier, Assistant Superintendent, Cape Hatteras Group

Bob Woody, Chief of Interpretation and Visitor Services, Cape Hatteras Group

Steve Harrison, Curator, Cape Hatteras Group

Rich Schneider, Chief of Maintenance, Cape Hatteras Group

Warren Wren, Concessions Specialist, Cape Hatteras Group

Mary Doll, District Interpreter, Wright Brothers National Memorial

Darrel Collins, Historian, Wright Brothers National Memorial

Fent Davis, Interpreter, Wright Brothers National Memorial

Richard H. Sussman, Park Planner, Atlantic Coast System Support Office, National Park Service (Team Captain)

Chris Furqueron, Landscape Architect, Appalachian System Support Office, National Park Service

John Beck, Interpretive Specialist, Gulf Coast System Support Office, National Park Service

Valuable Assistance was provided to the study team by:

- Dr. Tom Crouch, Chairman, Department of Aeronautics, National Air and Space Museum, Smithsonian Institution

- Al Jones, Joe Hardman, and the members of the First Flight Society

- North Carolina Power Company

- Rick Jones, Richmond, Virginia

- Simon-Tran-M-Trung, General Engineer, Gulf Coast System Support Office, National Park Service

- Steve Sherwood, Mechanical Engineer, Atlantic System Support Office, National Park Service

- Walt Graham, Civil Engineer, Appalachian System Support Office, National Park Service

- Lucy Lawliss, Cultural Landscape Architect, Gulf Coast System Support Office, National Park Service

- Bill Sturgeon, Fee Specialist, Gulf Coast Cluster, National Park Service

- Elmer Hernandez, Transportation Specialist, Denver Service Center, National Park Service

- Don Falvey, Superintendent, Zion National Park

- Southeast Archeological Center, National Park Service

- State of North Carolina, Department of Transportation, District Office, Elizabeth City

- Town of Kill Devil Hills, Planning and Development

APPENDIX C

LEGISLATION

The following are highlights of the Park's legislation:

Act of March 2, 1927

Section 1, March 2, 1927:

There shall be erected on Kill Devil Hill, at Kitty Hawk, in the state of North Carolina, a monument in commemoration of the first successful human attempt in all history at power-driven airplane flight, achieved by Orville Wright on December 17, 1903; and a commission to be composed of the Secretary of War, the Secretary of the Navy, and the Secretary of Commerce is hereby created to carry out the purpose of this Act.

Section 2:

It shall be the duty of the said commission to select a suitable location for said monument, which shall be as near as possible to the actual site of said flight; to acquire the necessary land therefor; to superintend the erection of the said monument; and to make all necessary and appropriate arrangements for the unveiling and dedication of the same when it shall have been completed.

Section 3:

Sum or sums as Congress may hereafter appropriate for the purpose of this Act are hereby authorized to be appropriate.

Section 4:

The design and plans for the monument shall be subject to the approval of the Commission of Fine Arts and Joint Committee on the Library.

Act of June 23, 1959

In furtherance of the Act of March 2, 1927, the following described lands are hereby added to the Wright Brothers National Memorial in the State of North Carolina: Tract and Tract 2.

Section 2

Lands added to the memorial pursuant to section 1 hereof shall be subject to all the laws, rules, and regulations applicable to said memorial.

Executive Order of March 3, 1933

Section 2--National Parks, Buildings, and Reservations:

All functions of administration of public buildings, reservations, national parks, national monuments, and national cemeteries are consolidated in an Office of National Parks, Buildings, and Reservations in the Department of the Interior, headed by a Director of National Parks, Buildings, and Reservations. This transfer and consolidation of functions shall include, among others, those of the National Park Service of the Department of the Interior and the National Cemeteries and Parks of the War Department which are located within the continental limits of the United States.

Section 19--General Provisions

Each agency, all the functions of which are transferred to or consolidated with another agency, is abolished.

The property, facilities, equipment, and supplies employed in the work of an abolished agency or the exercise of a function disposed of, disposition of which is not elsewhere herein provided for, shall, to the extent required, be transferred to the successor agency.

Executive Order No. 6166 dated June 10, 1933:

All functions of administration of public buildings, reservation, national parks, national monuments, and national cemeteries are consolidated in an office of National Parks, Buildings, and Reservations in the Department of the Interior, at the head of which shall be a Director of National Parks, Buildings, and Reservations. This transfer and consolidation of functions shall include, among others, those of the National Park Service of the Department of the Interior and the National Cemeteries and Parks of the War Department which are located within the continental limits of the United States.

Kill Devil Hill Monument, Kitty Hawk, North Carolina is transferred from the War Department to the Interior Department.

OTHER PERTINENT LEGISLATION

1916 National Park Service Organic Act:

To promote and regulate the use of the federal areas known as national parks, monuments, and reservation...by such means and measures as conform to the fundamental purpose of said parks, monuments, and reservation, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

1966 National Historic Preservation Act (as amended):

Section 110:

The heads of all Federal agencies shall assume responsibility for the preservation of historic properties which are owned or controlled by such agency. Each agency shall undertake, consistent with the preservation of such properties and the mission of the agency and the professional standards established pursuant to section 101 (g), any preservation, as may be necessary to carry out this section.

1970 General Authorities Act:

These areas, though distinct in character, are united through their interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage; that, individually and collectively, these areas derive increased national dignity and recognition of their superb environmental quality through their inclusion jointly with each other in one national park system preserved and managed for the benefit and inspiration of all the people...;and that it is the purpose of this Act to include all such areas in the System and to clarify the authorities applicable to the system.

APPENDIX D

REFERENCES

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As the nation's principal conservation agency, the Department of the Interior has the responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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