

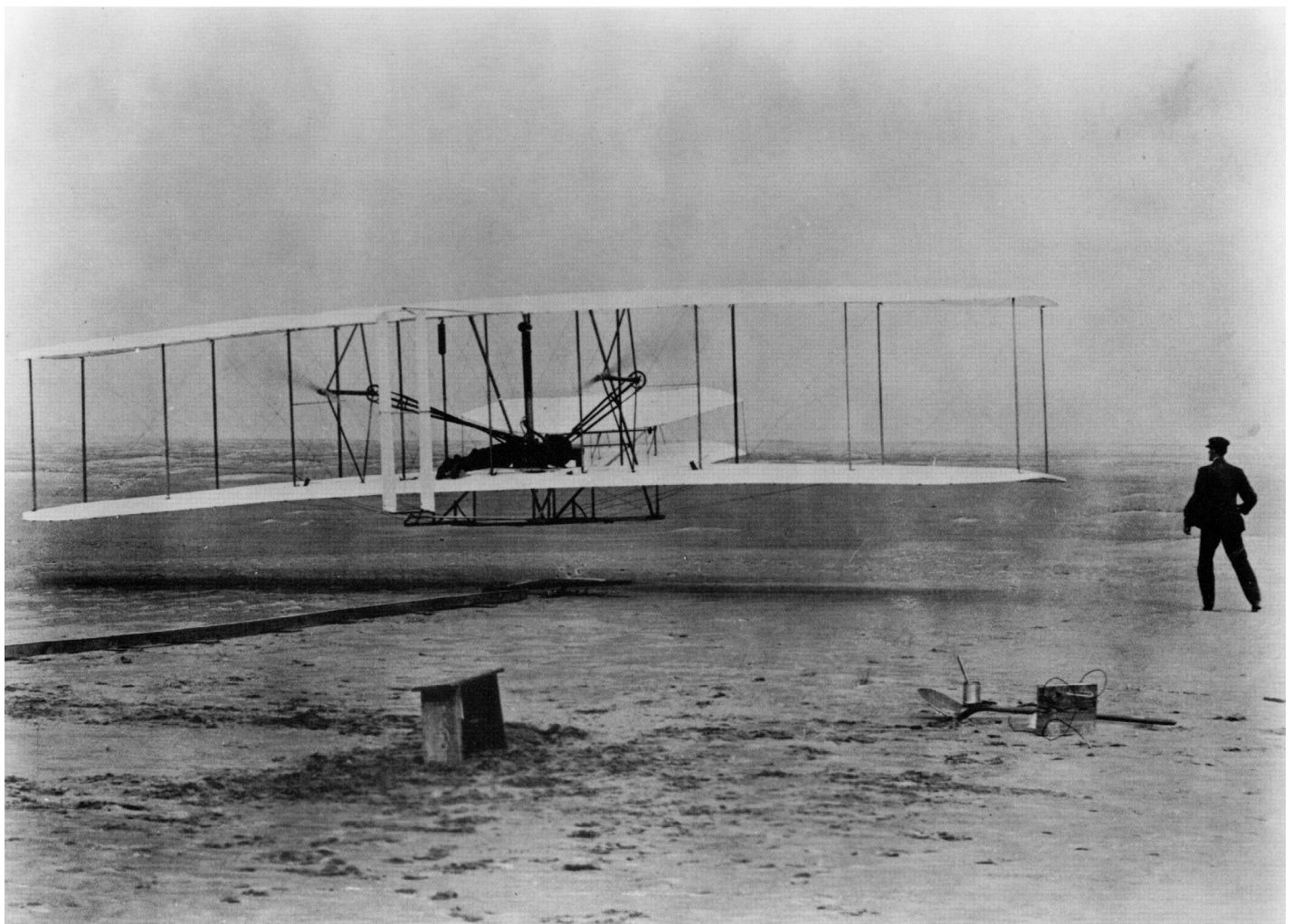
National Park Service
U.S. Department of the Interior

Wright Brothers National Memorial
North Carolina



Wright Brothers National Memorial

Long-Range Interpretive Plan



Cover Photo: First Flight, December 17, 1903, Kitty Hawk, North Carolina

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Wright Brothers National Memorial

Long-Range Interpretive Plan

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November 2010

National Park Service
U.S. Department of the Interior

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Wright Brothers National Memorial



INTRODUCTION

The National Park Service (NPS) has adopted a unified planning approach for interpretation and education. This approach combines planning for interpretive media, personal interpretive services, and education programs. The Comprehensive Interpretive Plan (CIP) is the basic planning document for interpretation and was formally adopted as part of NPS guidelines in 1995. Responsibility for creating the CIP lies with each park's superintendent.

The CIP process helps parks make choices. It provides guidance to park staff by clarifying objectives, identifying audiences, and recommending the best mix of media and personal services to use to convey park themes.

Although the CIP as defined in Director's Order No. 6 is composed of specific elements, good planning is customized to meet each park's needs and situation. The CIP is not a recipe. Rather, it is a guide to effective, goal-driven planning. While it considers past interpretive programming, it is primarily a forward-looking document that concentrates on actions needed to create or sustain a vigorous and effective interpretive program for the future. All CIPs have three components: the Long Range Interpretive Plan (LRIP), a series of Annual Implementation Plans (AIPs), and an Interpretive Database.

The heart of the CIP is the Long Range Interpretive Plan (LRIP).

The LRIP defines the overall vision and long-term (7-10 year) interpretive goals of the park. The process that develops the LRIP defines realistic strategies and actions that work toward achievement of the interpretive goals.

The LRIP consists of two parts. The Foundation for Planning articulates the conceptual framework for interpretation. It addresses site significance, primary interpretive themes, desired visitor experiences, and target audiences, and describes existing conditions at the site.

The second part of the LRIP addresses recommendations and implementation. It is developed after the Foundation for Planning and Existing Conditions section have been reviewed and accepted by site planners and stakeholders. Together, these elements make up the final Long Range Interpretive Plan.

The completed LRIP is a critical part of the CIP, but it does not stand alone. Actions in the LRIP are divided into annual, achievable steps and reproduced in the AIP, the second component of the CIP. Creating a series of these AIPs that implement the actions outlined in the LRIP simplifies the park's annual planning process. The third component of the CIP is the Interpretive Database, an ongoing compilation of information, reports, bibliographies, plans, and inventories that provide background information and document the process of developing the LRIP.

The baseline for this plan is FY2009.

EXECUTIVE SUMMARY

Wright Brothers National Memorial is located in Kill Devil Hills, North Carolina. It is administered by the National Park Service Outer Banks Group, which also includes Cape Hatteras National Seashore and Fort Raleigh National Historic Site. The Memorial is the site of the world's first successful, controlled, manned, heavier-than-air, powered flight, made by Wilbur and Orville Wright on December 17, 1903. The mission of the park is to commemorate the Wrights' success on that day and to interpret the continuing worldwide significance of their dream, vision and achievement.

This LRIP provides a vision for the future of interpretation at the park. The LRIP was created through a collaborative, goal-driven process that describes desired visitor experiences and recommends appropriate means to achieve them while protecting and preserving the park's cultural and natural resources.

The LRIP's first section confirms the foundations of the park: its purpose, significance, interpretive themes, visitor profiles, visitor experience goals, issues and influences, and existing conditions. The LRIP's second section recommends actions to be taken over the next five to seven years to improve the park's interpretive services and media, and provides an achievable implementation strategy.

The following short sections and bulleted phrases summarize this LRIP's Future Interpretive Program:

Personal Services

- Focus interpreter-led programming.
- Enhance training in certain areas.
- Re-evaluate presentation of special events.
- Develop "Pilots in Residence" program.
- Expand community outreach.

Educational Services

- Develop educational strategy.
- Continue Teacher-Ranger-Teacher Program.
- Parks as Classroom.
- Strengthen partnership with NCCAT.
- Develop offsite offerings.
- Partner with others.

Non-Personal Services

Interpretive Facilities Improvements

- Continue to maintain and interpret from existing facilities
- Need for new interpretive and administrative/office space.

Exhibits

- Support the Discovery of Flight Foundation so that they can reach their fundraising goal and donate The Wright Experience: Six Challenges of Flight interactive exhibit to the park.
- Continue to use current interpretive venues for exhibits.
- When appropriate, re-evaluate

exhibit program in light of plans for visitor center annex, and the condition of the pavilion.

Audiovisual/Electronic Media

- Hire Media/Visual Information Specialist.
- Develop park-wide Media Plan.
- Develop all media presentations with strategic consideration of future visitor usage and relevancy.

Park Website/Social Media

- Repurpose existing media (i.e., print, images, collection information, etc.) for website presentation.
- Partner with Dayton Aviation Heritage National Historical Park (and possibly Wright University) to create a Wright brothers interpretive website that would combine related resources.
- Encourage National Park Service to create an Aviation Heritage Program, similar to existing Civil War, Maritime, and Underground Railroad initiatives, under which all aviation-related sites in the National Park Service would share a National Park Service-sponsored website.
- Develop a series of web-based interpretive features/resources and social media that will keep the park relevant both nationally and locally.

Wayside Exhibits

- Create new wayside exhibits near the Monument to address

commemoration, global impact and the changing landscape.

Publications

- Continue production of *In The Park* park newspaper.
- Create two new site bulletins: changes to Kitty Hawk and natural resources.

Partnerships

- Continue to work with existing partners and formalize new partnerships to develop interpretive services.
- Work with Dayton Aviation Heritage National Historical Park to create a joint website and other interpretive and educational resources.

Research Needs

- Resources needed to document Kitty Hawk life in the Wright brothers' time.

Staffing

The following staff additions are recommended for Wright Brothers National Memorial:

- Group Volunteer-in-Parks Coordinator.
- Group Media/Visual Information Specialist.
- District Interpreter (Supervisory Park Ranger for Wright Brothers National Memorial and Fort Raleigh National Historic Site).
- Two Park Ranger (Interpretation) positions.
- Education Specialist.
- Summer seasonal Park Rangers.
- Teacher-Ranger-Teachers.

FOUNDATION FOR PLANNING

LEGISLATIVE BACKGROUND

The idea for Wright Brothers National Memorial came into being at a time of strengthening global leadership for the United States in the wake of World War I. The Wright brothers' world-altering invention symbolized, in a spectacular manner, American confidence, competence, and power. By calling attention to the brothers' feat at the Kill Devil Hills, not only would a memorial honor American vigor and ingenuity, but it offered the potential for local economic development. The beauty and value of the Outer Banks was clear at the time, but the area boasted few roads, no electricity, and no bridges to the mainland. Prompted by local and national interests, North Carolina's U.S. Representative Lindsay Carter Warren began to develop his vision of an aviation memorial at Kitty Hawk.

The Kill Devil Hill Monument National Memorial and its legislative foundation were established by an Act of Congress on March 2, 1927, remarkably, just 24 years after the brothers' first flight:

"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 ..."

Via Executive Order 6166, issued June 10, 1933, responsibility for administration of the site was transferred from the War Department to the National Park Service. The site was redesignated as "Wright Brothers National Memorial" in 1953.

Please note that throughout this LRIP, Wright Brothers National Memorial may be referred to as Wright Brothers NMEM, the Memorial, or the site.

PURPOSE

As defined by the park's current strategic plan, the purpose of Wright Brothers NMEM is to commemorate the first successful controlled powered flight, at the site where it occurred, and to interpret the continuing worldwide significance of the Wright brothers' dream, vision, and achievement.

SIGNIFICANCE

Statements of significance clearly define the importance or distinctiveness of the park's resources. Many park LRIPs cite a number of statements of significance. However, few parks are so significant that events there literally changed the world.

Wright Brothers NMEM is such a park. It is significant because:

- The Wright brothers' realization of humanity's age-old dream of powered, controlled, heavier-than-air flight at this site permanently transformed our perception of space and time, and changed the world forever.
- The idea of creating a monument to the Wright brothers on this site, initiated by local citizens and the subsequent efforts that brought it to fruition, marked the beginnings of economic development of the Outer Banks.
- The park, as a unit of the National Park System, is an active educational resource offering unique opportunities for visitors and educational groups to learn about the Wright's achievement, cultural stewardship, and preservation of natural and cultural resources.
- The park was listed on the National Register of Historic Places on October 16, 1966. Contributing elements include:
 - Wright Brothers Monument, Significance level of National
 - First Flight Marker, Significance level of Contributing
 - Wright Brothers

Monument Powerhouse,
Significance level of
Contributing
•Monument Curving
Trail and Circular Road,
Significance level of
Contributing.

The Wright Brothers National Memorial Visitor Center was listed as a National Historic Landmark with a Significance level of National, on January 3, 2001. The structure is significant under the National Historic Landmark Theme III (Expressing Cultural Values) and Subtheme 5 (Architecture, Landscape Architecture, and Urban Design). The building is a significant representation of Modernist architecture and has significant associations with the National Park Service "Mission 66" development initiative.



The Wright Brothers National Memorial Visitor Center

INTERPRETIVE THEMES

Interpretive themes embody the most important ideas or concepts communicated to the public about a park. They convey the significance of the resource and highlight the links between tangible elements, intangible meanings, and universal concepts that are inherent in the park's resources. The themes connect resources to larger processes, systems, ideas, and values. They define the core content of the educational messages the park offers and serve as the building blocks upon which interpretive services and educational programs are based.

Tangible/Intangible Concepts

The purpose of interpretation is to make intellectual and emotional connections between the park resources and visitors' experiences so that visitors will understand, appreciate, and help preserve the site. Park staff developed a list (although not all-inclusive) of tangible resources and intangible meanings; these pairings appear below as a starting point for developing the park's interpretive theme statements.

Tangibles (Resources): Intangibles (Meanings):

1903 Flyer: research, experimentation, discovery,

determination, perseverance, revelation, victory, dream, vision
1902 Glider: adaptation, discovery, research, experimentation, determination, perseverance, revelation, hope, dream, vision

1960 Visitor Center: history, reflection, innovation

2003 Pavilion: change, technology, achievement, challenge

Wright Monument and Busts: honor, remembrance, commemoration

2003 First Flight Statue: cooperation, honor, commemoration

First Flight Boulder: commemoration, honor, achievement, success, change

Landing Markers: achievement, success, change

First Flight Flight-Line: inspiration, reflection, excitement, joy

1903 Camp Buildings: home, work, friendships, frustrations, challenge

Kill Devil Hill: discovery, determination, patience, change, challenge

Apollo 7 Wright Flyer cloth: respect, honor, advancement, progress, exploration, adventure

Wright Artifacts: technology, discovery, dedication, preservation

First Flight Shrine: innovation, progress, dedication

Tates' Sewing Machine: trust, friendship, hospitality

Soaring Society Plaque: honor, commemoration, advancement

Commemorative Landscape: change, connections, discovery, reflection

AOPA Pilot's Booth: brotherhood (of pilots), honor, safety

First Flight Airstrip: progress, adventure, change, transportation

Generator Building: power, technology, change

West Hill: change, discovery, nature

Superintendent's House: family, growth, change

Old Park Entrance Pillars: change, progress

Flora and Fauna: nature, harmony, change

Wilbur and Orville Wright: family, loyalty, curiosity, dedication, adventurous, discovery, perseverance, cooperation

Wright Family: love, tradition, consistency, respect, discipline,

curiosity, self-reliance, family
Lifesaving Service: endurance, courage, dedication, friendship

Outer Banks Families/Witnesses: wonder, awe, joy, camaraderie, fellowship, encouragement, hospitality, respect

Descendents of the Witnesses: tradition, connection, family

Insects: nature, annoyance, frustration, discouragement

Geology/Sand: nature, timelessness, enduring, change

Weather/Wind: nature, freedom, power, exhilaration, liberation

Airplanes Flying over the Park: progress, wonder, inspiration

December 17th Anniversary event: admiration, appreciation, co-operation, team work, honor

Theme Statements

The Wright Brothers of Dayton

“From the time we were little children, my brother Orville and myself lived together, played together, worked together and, in fact, thought together. We . . . talked over our thoughts and aspirations so that nearly everything that was done in our lives has been the result of conversations, suggestions and discussions between us.” – Wilbur Wright, April 3, 1912

The Wright brothers’ extraordinary accomplishments were made possible by a unique combination of factors, including problem-solving, ingenuity, intellectual tenacity, discipline, conviction, and perseverance, that continues to offer perspective and inspiration today, and to invite reflection on the characteristics that lead to the achievement of success.

Story Elements

- The era of the Wright brothers was one of great social change and astonishing scientific developments, notably in transportation technology: automobiles, motorcycles, bicycles, dirigibles, and trains.
- At the time, Dayton, Ohio was the center of invention and industrial development, and offered the technological resources that the Wrights needed to move their dreams and ideas to fruition.

- Milton and Susan Wright provided their children with an environment that encouraged discipline, self-reliance, and intellectual tenacity, and fostered an atmosphere of curiosity and learning.
- The turn of the 20th century was a time of discovery, progress, and increased national confidence that inspired many, like the Wrights, to challenge the unattainable.
- The print and bicycle shops operated by the Wrights are indicative of the entrepreneurial spirit which helped them pursue their ambitions.
- Katherine Wright, the only college graduate in the family, provided emotional backing, encouragement, and logistical support that were essential to her brothers’ successes.
- The Wright brothers were not the first to experiment in powered human flight. Scientific research dates back several hundred years before the brothers began their work. Notable aeronautical precursors include Cayley, Lilienthal, Langley, and Chanute, as well as “spiritual” flight dreamers from Icarus to Jules Verne.



The Wright Cycle Co. shop in Dayton, Ohio

Why Kitty Hawk?

"We came down here for the wind and sand, and we have got them."

- Orville Wright, in a letter to his sister Katherine, October 18, 1900

The human and geographic advantages of Kitty Hawk combined to make this the ideal site for the Wright brothers' experiments, reminding us of the ways that physical and cultural geography shapes human events.

Story Elements

- Kitty Hawk offered key features that the Wrights were searching for in a location to test their flight experiments: wind, sand, high dunes, open space, and isolation.
- The Outer Bankers provided the Wrights hospitality, labor, friendship, and goods/materials – all of which played an important role in the Wrights' success and was fundamental in their decision to return to the Outer Banks for future experimentation.
- Their time on the Outer Banks was not all work – Wilbur and Orville enjoyed their visits here, taking advantage of the recreational opportunity the area offered (including hunting, fishing, and ornithology), stating that "Kitty Hawk cured all ills."

Achieving Flight

"I am afflicted with the belief that flight is possible to man." - Wilbur Wright in a letter to Octave Chanute, May 13, 1900

"Isn't astonishing that all these secrets have been preserved for so many years just so we could discover them!!" - Orville Wright to George A. Spratt, Dayton, June 17, 1903

By methodical research, a deliberate engineering approach, and years of experimentation, the Wright brothers discovered the fundamental principles of powered flight, ushering in an era of technological development that broke mankind's bonds to earth.

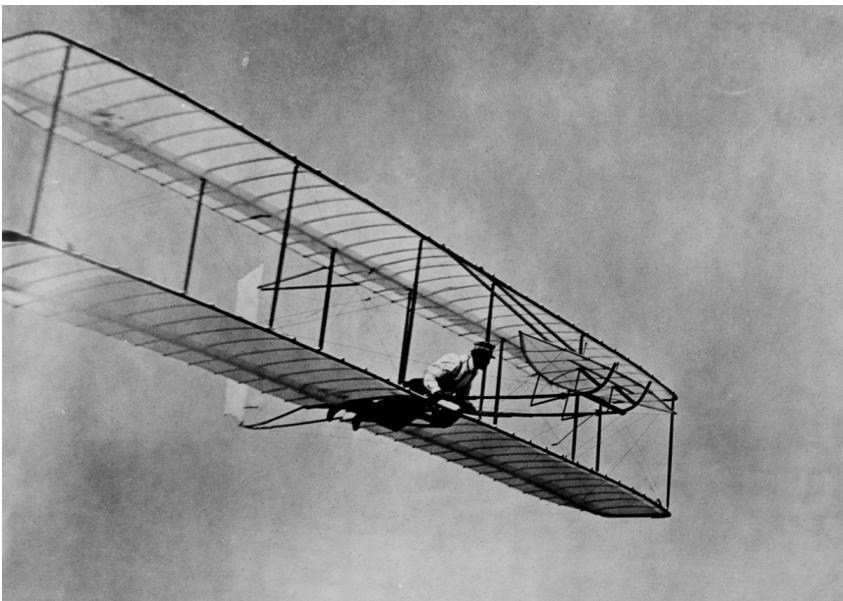
Story Elements

- The desire for flight has been part of the human dream since the earliest times of civilization, demonstrated by tales and myths going back for millennia.
- The young Wrights' interest in flight was first piqued by a flying toy given to them by their father in 1878.
- The soaring exploits of Otto Lilienthal fascinated the Wrights, and his death in 1896 inspired them to study and research human flight.
- The Wrights' rigorous engineering efforts and scientific research led to flight control, including aeronautic discoveries and improvements in: flight stability and control (roll, pitch, and yaw), lift (wing warping and the refinement of wing design/lift calculations), power (engine design and construction), and thrust (propeller design).
- In 1899, Wilbur discovered

what was to become the key to successful human flight in the twisting of a long pasteboard box (wing warping), propelling the Wrights to start their own flight experimentations.

- Although the flight experiments at Kitty Hawk in 1900 and 1901 were frustrating for the Wrights as they did not achieve the results they had expected, these experiments were also key learning experiences, showcasing the Wrights' ability to learn from their mistakes and problems.
- While in Dayton during the fall of 1901, suspecting that Lilienthal's lift calculations were in error, the Wrights discarded Lilienthal's data and replaced it with their own obtained through wind tunnel experiments designed to identify the most efficient air foils and wing platforms.

- The Wrights achieved controlled flight (roll, pitch, and yaw) with their 1902 Glider, a machine with an efficient wing design developed from their wind tunnel experiments. The basic principles of flight control established by the Wright brothers remain true today.
- In 1903, using the 1901 wind tunnel calculations, the Wrights developed the world's first genuinely efficient airplane propeller to provide thrust for powered aircraft.
- In 1903, forced to design an engine that was light and powerful enough to power their aircraft, the Wrights advanced engine technology through the use of an aluminum block water-cooled engine built by Charles Taylor based on the Wrights' rough sketches.
- On December 17, 1903, the Wright brothers achieved the world's first controlled, powered, and sustained heavier-than-air flight in history.
- The Wrights had no government or corporate money to back them. They used only the basic tools, abilities, and resources available to them to build their aircraft and create the specialized test equipment they needed to uncover the basic engineering principles that made their flights possible.
- The Wrights' post-1903 trips to Kitty Hawk in 1908 and 1911 were important milestones in their continuing efforts toward development of an aviation industry.



The Wrights' experimental glider, flown here by Wilbur Wright on October 10, 1902, helped establish the fundamental principles of controlled flight.

Commemorating the Wrights

“In commemoration of the conquest of the air by the brothers Wilbur and Orville Wright, conceived by genius, achieved by dauntless resolution and unconquerable faith.” - Inscription on the Wright Monument

Wright Brothers NMEM commemorates the inaugural flights made by Wilbur and Orville Wright on December 17, 1903 after of years of hard work and scientific research – a tenacious process of invention that inspires continuing global achievement in flight technology and celebration of the power of human achievement.

Story Elements

- Wright Brothers NMEM (formerly Kill Devil Hill Monument National Memorial) was established in 1927.
- The First Flight Boulder unveiling and the laying of the cornerstone of the Wright Monument took place on December 17, 1928 (the first anniversary event to take place at the park site). This event was attended by Orville Wright, Clarence Chamberlain, and Amelia Earhart.
- The Wright Brothers Monument was dedicated on November 19, 1932. This event was attended by Orville Wright and members of the Wright family. The Wright Monument is the largest monument dedicated to a living person.
- The December 17th annual

anniversary event started in the 1930s and continues today with significant celebrations occurring at the mark of the 50th, 75th, and 100th anniversaries.

- The First Flight Sculpture was dedicated on December 16, 2003.
- The First Flight Shrine, initiated by the First Flight Society in 1966, celebrates the Wrights and other aviation pioneers.
- The descendants of the witnesses of the First Flight play an active role in commemorating the roles of their ancestors in helping the Wrights in the achievement of flight.

The Global Impact

“It is not really necessary to look too far into the future; we see enough already to be certain that it will be magnificent.” - Wilbur Wright to the Aero Club of France, Paris, November 5, 1908

The Wright brothers’ invention of powered flight fundamentally affected the evolution of world civilization. (This theme is taken from the Dayton Aviation Heritage National Historical Park LRIP).

Story Elements

- The story of the Wrights does not end in 1903, but includes their founding of the aviation industry and introduction of the airplane to the world.
- The creation of practical air



The Monument’s inscription pays tribute

transportation changed our perceptions of space and time.

- It has facilitated trade and communication and led to the creation of new industries.
- Aviation revolutionized society, culture, and warfare in the 20th century.
- Aviation and aerospace advances starting with the 1903 Wright Flyer have broken us from the bonds of the earth and taken us to the edge of space and beyond.

Changing the Outer Banks

“There shall be erected on Kill Devil Hill, at Kitty Hawk, in the State of North Carolina, a monument . . .”

- From the 1927 legislation establishing Wright Brothers National Memorial

The local grassroots effort to honor the Wright brothers’ achievements at Kitty Hawk demonstrates the strength and impact of citizens working together to achieve dreams. The effort fundamentally changed the community in ways that continue to have an impact today.

Story Elements

- A group of local citizens successfully lobbied to establish the park in 1927. These citizens simultaneously created the Kill Devil Hill Memorial Association to support this effort.
- The Big Kill Devil Hill sand dune was stabilized by the Quartermasters Corps to allow for the construction of the

Wright Brothers Monument in 1929.

- Establishment and development of the park helped to increase tourism to the Outer Banks and usher in an era of economic development.
- The Wright Memorial Bridge was planned by a group of Elizabeth City investors and completed in 1930. It insured the construction of new roads past the Memorial and opened up the Outer Banks to easier vehicular access.
- The global nature of the Wright brothers’ story draws visitors from across the nation and internationally to the Outer Banks.
- The Wrights’ achievement is labeled and marketed by the State of North Carolina – “First in Flight” -- and the Outer Banks Visitors Bureau.

Preservation and Stewardship

“ . . . to preserve unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations.” - National Park Service Mission

Preservation and stewardship of Wright Brothers NMEM’s natural and cultural resources is critical so that future generations can access, enjoy, value, and learn from these valued resources.

Story Elements

- The park’s special resources require preservation and

stewardship by the park, its partners, and the local community.

- Preservation and stewardship are accomplished through wise management practices, dedicated park staff, cooperating partnerships, and park neighbors who instill appreciation, pride, and responsibility in today's visitors for the park's resources.
- The public is encouraged to support stewardship by becoming educated about the park's natural and cultural resources and informed on park issues as well as by providing comment during park planning processes.
- Commemorative events at the park are complemented by partner and public involvement.
- All people, especially those in the local community, can be stewards and help make a positive impact on the park.
- The park is a unit of the National Park System, which preserves and protects our nation's cultural and natural heritage and special places.
- Wright Brothers NMEM has five historic structures listed on the National Register of Historic Places:
 - Wright Brothers Monument, Significance level of National
 - First Flight Marker, Significance level of Contributing
 - Wright Brothers Monument Powerhouse, Significance level of Contributing
 - Monument Curving Trail and Circular Road, Significance level of Contributing.
- The Wright Brothers National Memorial Visitor Center is listed as a National Historic Landmark, Significance level of National.
- The park has one archeological site and three documented sub-sites. These are associated with the park's historic structures. The archaeological site is associated with the monument, and the sub-sites are associated with the visitor center, the reconstructed buildings, and the monument powerhouse.
- The acreage covered by the various vegetation communities offer refuge to wildlife native to the coastal plains North Carolina, including the hundreds of thousands of birds resting and feeding along the Atlantic flyway.
- Rare natural vegetation communities throughout the park support state-listed rare plants and animals, including woolly beach heather, Virginia pinweed, and the giant swallowtail butterfly. The NPS and North Carolina Natural Heritage Program plan to register these rare vegetation communities within a North Carolina Significant Natural Heritage Area.

MANAGEMENT GOALS

The Government Performance and Results Act (GPRA) of 1993 and the National Parks Omnibus Management Act of 1998 guided the Wright Brothers NMEM in drafting a five-year Strategic Plan in 2007, stating the park's management goals through 2012. Within this plan, the following goals address recreation, interpretation, and visitor experiences:

Mission Goal IIa: Visitors safely enjoy and are satisfied with the availability, accessibility, diversity and quality of park facilities, services, and appropriate recreational opportunities.
Long-term Goal: By September 30, 2012, 95% of visitors to Wright Brothers NMEM are satisfied with appropriate park facilities, services, and recreational opportunities.

Mission Goal IIb: Park visitors and the general public understand and appreciate the preservation of parks and their resources for future generations.
Long-term Goal: By September 30, 2012, 94% of visitors will understand the significance of the park and 96% of visitors are satisfied with park-facilitated programs.

Mission Goal IVb: The NPS increases its managerial resources through initiatives and

support from other agencies, organizations, and individuals.
Long-term Goal: By September 30, 2012, Wright Brothers NMEM's visitor attendance at facilitated programs will increase to 902,000.

GPRA Goal Measurements

The outcomes (i.e., how well the park is achieving its visitor-related GPRA goals) of these efforts are measured each year at every unit of the National Park System through survey forms that are distributed to visitors at each NPS unit. Visitors send their completed survey forms to the University of Idaho, where the data is collected and compiled. The survey results reflect visitor opinion about each park's facilities, services, and recreational opportunities, as well as measuring visitor understanding and appreciation of each NPS unit's significance.

Data from the GPRA Visitor Survey – 2009

Each summer, Wright Brothers NMEM distributes Visitor Survey cards to selected visitors for one week. The data is compiled by the University of Idaho as a report to satisfy GPRA requirements. Each year's survey reflects visitor opinion about park facilities, services, and recreational opportunities. At Wright Brothers NMEM, the 2009 card survey obtained a response rate of 19%. In brief, the 2009 survey yielded an overall satisfaction measure from respondents of 99% (74% very good; 25% good), based on answers from 72 respondents. Of the specific park facilities surveyed, the two lowest-ranked facilities were picnic areas (56% very good) and restrooms (64% very good).

Addition results of the 2009 GPRA Visitor Survey are summarized below:

2009 Overall quality of facilities, services, and recreational opportunities

Very good: 74%
 Good: 25% (99% satisfaction: combined Very Good and Good)
 Average: 3%
 Poor: 0%
 Very Poor: 0%

2009 Specific ratings of facilities, services, & recreational opportunities

Category

Approval Ratings

Park Facilities	Very Good	Good	Average	Poor	Very Poor
Visitor Center	81%	18%	1%	0%	0%
Exhibits	78%	19%	3%	0%	0%
Restrooms	64%	26%	8%	2%	0%
Walkways, Trails, Roads	72%	17%	6%	3%	1%
Camp/Picnic Areas	56%	13%	19%	13%	0%
Combined Facilities	73%	20%	5%	2%	0%

Visitor Services	Very Good	Good	Average	Poor	Very Poor
Employee Assistance	85%	15%	0%	0%	0%
Interpretive Programs	87%	13%	0%	0%	0%
Park Map or Brochure	77%	23%	0%	0%	0%
Commercial Services	N/A				
Combined Visitor Services	79%	19%	3%	0%	0%

Recreational Opportunities	Very Good	Good	Average	Poor	Very Poor
Learning/nature, culture, history	75%	22%	3%	0%	0%
Outdoor Recreation	67%	15%	19%	0%	0%
Combined Recreation Ops:	72%	20%	7%	0%	0%

Comments from GPRA Visitor Surveys

An upgrade to the displays in the visitor center would be nice.

The poor condition of the grounds detracted from the experience.

We think that the Jr. Ranger program is wonderful.

Toddler-size aviation exhibits are sought.

We really enjoyed the park. It was our first time and we had always dreamed of seeing it.

Excellent facility and programs.

Need a paved walkway from the new exhibits to the memorial on the hill.

Could use more handicap parking.

The park employees were exceptionally helpful and knowledgeable.

Additional picnic tables are needed near the main parking lot/museum.

Buy some lawnmowers – the grounds are a disgrace.

The people at the visitor center were very helpful.

Lawn care and landscaping should be a higher priority.

Monument needs to be accessible to wheelchair users.

Every employee we came in contact with was very friendly and helpful.

More parking.

Ranger presentation on the Wright brothers was excellent.

The rangers were so very nice.

My daughter participated in a ranger program and the rangers were very friendly, helpful, and knowledgeable.

VISITOR EXPERIENCE GOALS

These statements describe desired visitor experiences regarding information and orientation, interpretive services and programs, support facilities, and personal and recreational activities. They describe how the site's interpretation and education program facilitates intellectual, inspirational, emotional, and physical experiences for visitors. They describe what visitors to the park would like to learn, feel, do, or experience when visiting the park (either in person or remotely).

All visitors are seeking something of value for themselves. The visitor defines what that value is for him/herself. Visitor experience goals describe what experiences and opportunities should be available to the average visitor on an average day, whether or not the visitor chooses to experience them.

At Wright Brothers NMEM, visitors:

Want to see and walk the place where the Wright brothers' first flights took place – alone, if they so choose.

Want to see real Wright brothers' flying machines.

Want to learn about the lives of the Wright brothers.

Want to know who the Wright brothers were and “what made them tick.”

Want to know what it felt like to fly that first airplane -- via some kind of media-driven, multi-sensory, virtual experience.

Want to discover the secrets of flight uncovered by the Wright brothers.

Want interactive exhibits and hands-on experiences that tell parts of the story – especially for children.

Want to receive a schedule of events and a map of the site.

Want to understand life on the Outer Banks during the time of the Wright brothers through some sort of multi-sensory experience.

Want to relax in a natural, park-like environment.

Parkwide Goals for All Visitors

Programs and facilities throughout the park will provide visitors with information and interpretive opportunities. Before, during, or after their visit, visitors, including those from local communities, should be able to enhance their experience by:

- Receiving adequate orientation and hospitality service to gain an understanding of park and theme-related area opportunities, to receive safety and regulatory information, and to feel welcomed to the park.
- Using safe practices while at the park to ensure safe experiences, and receiving safe access and opportunities to experience the park.
- Gaining an appreciation and understanding of the park by learning about, interacting with, and developing personal meaning regarding the park's cultural resources, through the interpretation of park stories.
- Demonstrating stewardship by using park resources in a manner that protects the natural ecosystem and preserves cultural resources.
- Understanding the relevancy of the park on a personal, national, and international level.
- Understanding that certain issues (i.e. climate change, recycling, sea-level rise) that affect the National Park

System are also important issues to the nation and world.

- Understanding that Wright Brothers NMEM is a unit of the National Park System and the importance of the NPS stewardship role in our society.
- Enjoying a variety of recreational activities that are compatible with the protection of park resources and use of the park by other visitors.
- Finding opportunities for reflection, solitude, and personal discovery.
- Accessing the grounds, facilities, and programs given the full range of visitor abilities and disabilities.
- Understanding park management's decisions and policies for protecting and preserving the park's cultural and natural resources for present and future generations.
- Having the opportunity to purchase publications, maps, and other educational materials through Eastern National, the park's cooperating association.

Education Program Goals

In addition to park-wide Visitor Experience Goals, schools and other education groups should be able to enhance their knowledge and help preserve the park's resources by:

- Understanding relationships and concepts of the park's cultural resources.

- Having access to age-appropriate, hands-on materials and techniques for off-site presentations, pre-trip exercises, and on-site experiences.
- Creating research and internships to expand education.
- Having access to curriculum-based education programming.
- Encouraging education activities to be fun, safe, and economical.
- Experiencing educational opportunities locally, i.e., Dare and Hyde county schools, College of the Albemarle, University of North Carolina Coastal Studies Institute, and The North Carolina Center for the Advancement of Teaching.
- Incorporates student and teacher resources such as curriculum, activities, worksheets, and experiments.
- Includes a web-based Junior Flight Ranger.
- Includes a feature where visitors can ask questions and request park information.
- Makes use of enhanced web features (GPS, podcasts, etc) and social networking.
- Is consistent, accurate, and up-to-date.

Goals Related to Virtual Visitors

In addition to the park-wide Visitor Experience Goals, “virtual visitors” (web-based users) should be able to enhance their knowledge of the park by accessing a website that:

- Provides interpretive text as well as informational text.
- Provides harmony between text and visual components.
- Includes easy navigation and a uniform look.
- Includes a comprehensive site map.
- Links to local parks, partners, and other appropriate websites.

VISITOR PROFILES

Most visitors who come to Wright Brothers NMEM arrive by private automobile or bus. Private pilots view the park as a Mecca, and it is not uncommon for aviators to fly thousands of miles for the privilege of landing at the birthplace of aviation. A few visitors walk or bicycle to the park, mostly for recreational purposes or exercise. Most visitors travel to the site in family groups.

Visitation during the last ten years has averaged 490,000 annually. The centennial year 2003 saw the highest visitation to date: 712,181. Most visitors come to vacation on the Outer Banks during the months of June, July, and August (monthly average nearly 90,000 for the three months), but increasingly 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. Promotional efforts by the Outer Banks Chamber of Commerce and Outer Banks Visitors Bureau have brought more visitors to the Outer Banks during the shoulder seasons.

Virginia and North Carolina bring the largest percentage of visitors to the Outer Banks. Recent improvements to egress

roadways from the north and western part of the State have made travel to the Outer Banks considerably easier. Maryland, Pennsylvania, Ohio, New Jersey, West Virginia, and New York follow in the numbers of visitors. Wright Brothers NMEM also receives visitors from throughout the nation and many foreign countries. During holidays the park gets more diverse visitors.

The average length of a park visit is 3 hours, with the visitor taking advantage of the museum, bookstore, interpretive talk, first flight boulder area, first flight sculpture, and the Wright Monument. Approximately 90% of park visitors enter the visitor center, 75% visit the pavilion exhibits, 80% visit the First Flight Boulder and Flight-Line, 80% visit the Wright Monument, and 80% visit the First Flight Statue.

As many summer visitors to Wright Brothers NMEM combine their visit with a vacation on the Outer Banks, a consistent weekly visitation pattern has developed. Two-thirds of the park's visitation during the summer occurs on Tuesday, Wednesday, and Thursday. Rainy days receive very heavy visitation. During shoulder seasons, visitation decreases, with more visitors on weekends than is typical during the high season. Fall and spring visitation mainly consists of families with young children, retirees, single adults, and tour groups. The park

receives an overwhelming number of school groups from March to May.

Park Visitation Figures

The following annual and monthly visitation figures for Wright Brothers NMEM are based on computations by the NPS Public Use Statistics Office, which estimates visitation data based on counts at specific locations within the park.

Annual Visitation, 1985 – 2009

Year	Visitors
2009	476,291
2008	527,721
2007	494,331
2006	466,144
2005	458,948
2004	421,341
2003	712,181
2002	440,737
2001	438,548
2000	429,472
1999	375,681
1998	419,210
1997	425,132
1996	393,721
1995	434,671
1994	475,755
1993	477,362
1992	477,643
1991	461,494
1990	463,461
1989	472,894
1988	328,617
1987	315,957
1986	630,779
1985	448,677

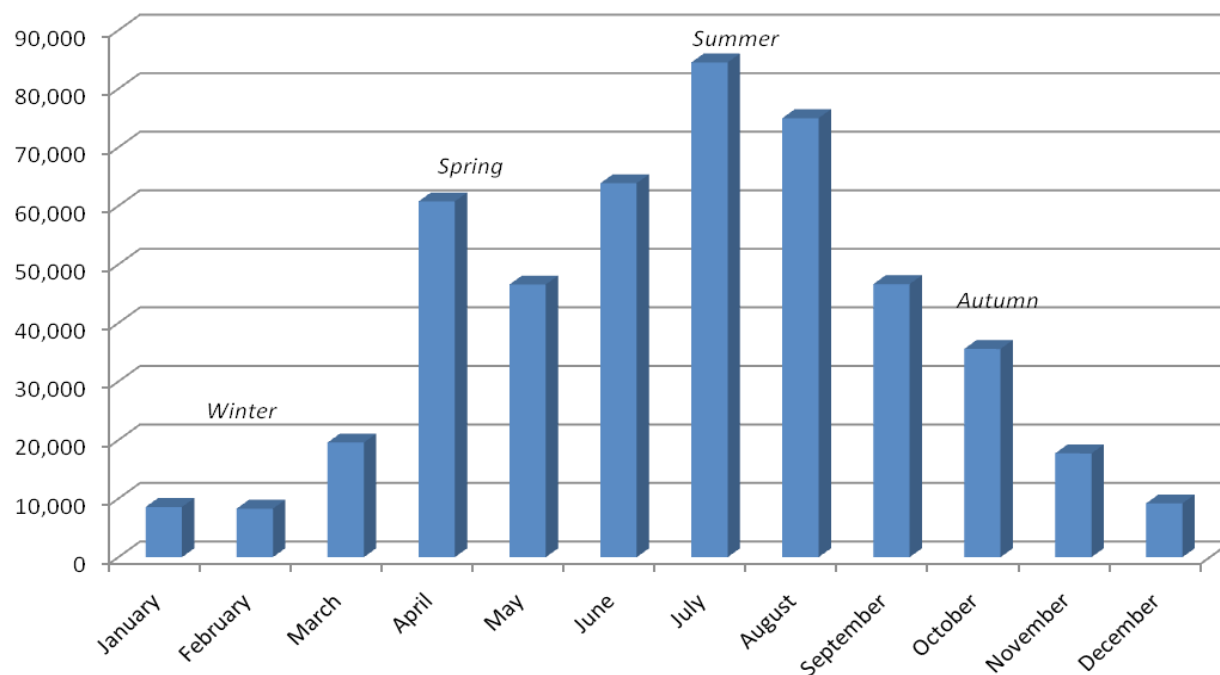
Monthly Visitation, 2009

January	8,583
February	8,287
March	19,585
April	60,766
May	46,573
June	63,876
July	84,511
August	74,989
September	46,633
October	35,571
November	17,728
December	9,189

Visitor Center Visitation, 2009

January	7,628
February	7,331
March	16,675
April	47,671
May	37,168
June	54,712
July	74,548
August	66,402
September	40,733
October	30,512
November	14,944
December	7,900

Monthly Visitation, 2009



NPS Visitor Services Project Data, 2002

A Wright Brothers NMEM Visitor Study performed in July 2002 (University of Idaho Park Studies Unit Report 136b, issued in December 2003) provides an overview of visitor opinions, activities, and expectations at Wright Brothers NMEM. The questionnaire for this visitor study was designed using the standard format that has been developed in previous Visitor Services Project studies. Interviews were conducted with, and questionnaires were distributed to, a sample of visitors who arrived at Wright Brothers NMEM during the period of July 12-18, 2002.

Of those completing the survey (a total of 224 respondents, for a response rate of 74.9%), 94% said they went to the visitor center; 77% used a park brochure or map; 81% walked to the Wright Brothers Monument and trails; and 77% viewed the First Flight Boulder.

Thirty-three percent of respondents said they participated in a ranger-led program. Of those, 66% ranked their ranger-led program as "extremely important."

Seventy-three percent of visitor groups were made up of family members, 13% were traveling with family and friends, 8% were with friends, and 5% were traveling

alone. None of the visitor groups were traveling with guided tour groups. Twenty-nine percent of the visitors tallied in response to this survey were 15 years old or younger.

No diversity data was gathered in this study and should be included in the next park Visitor Services Project.

Following are some tabulations from this visitor study:

Visitor Group Sizes

1 person	2%
2 people	22%
3 people	11%
4 people	22%
5 people	9%
6 to 10	22%
11 or more	10%

State of Residence

Pennsylvania	17%
North Carolina	13%
Virginia	13%
New York	7%
Maryland	6%
Ohio	5%
Florida	4%
New Jersey	3%
South Carolina	2%
Georgia	2%
California	2%
Washington, D.C.	2%
Illinois	2%
West Virginia	2%
Colorado	2%
Texas	2%
Indiana	2%
Tennessee	2%
Missouri	1%

Delaware	1%
Michigan	1%
Oregon	1%
Maine	1%
Kansas	1%
11 other states	5%
International	1%

Sources of Information used by Visitors

Friends/relatives/word of mouth	39%
Travel guide/tour book	38%
Previous visit(s)	36%
Other websites	17%
Received no information prior to visit	16%
Outer Banks Visitor's Bureau	12%
Rental property package material	11%
Outer Banks Chamber of Commerce	10%
Newspaper/magazine articles	10%
Cape Hatteras NS homepage	6%
Wright Brothers NMEM homepage	5%
Fort Raleigh NHS homepage	3%
Telephone, e-mail, or written inquiry to park	3%
Videos/telephones/radio	3%
Other	7%

Most Important Reasons for Visiting Wright Brothers NMEM

Historical significance	<i>Mentioned 106 times</i>
Educational purpose (to teach/ research)	<i>Mentioned 16 times</i>
Interest in flight/reverence for flight pioneers	<i>Mentioned 16 times</i>

Memorial/monument	<i>Mentioned 12 times</i>
General interest/to see it	<i>Mentioned 9 times</i>
For the children/grandchildren	<i>Mentioned 8 times</i>
To show family/friends	<i>Mentioned 7 times</i>
Live/visit nearby	<i>Mentioned 5 times</i>
Sightseeing	<i>Mentioned 4 times</i>
First time visited/seeing different area	<i>Mentioned 3 times</i>
Visit flight path	<i>Mentioned 3 times</i>
Enjoy the park	<i>Mentioned 2 times</i>
To see reproduction of Wright brothers' plane	<i>Mentioned 2 times</i>
Information	<i>Mentioned 2 times</i>
Location	<i>Mentioned 2 times</i>
Other comments	<i>Mentioned 14 times</i>

Visitor Activities on this visit to Wright Brothers NMEM

Visiting historic sites	90%
Walking	64%
Swimming/sunbathing	64%
Photography	54%
Enjoying solitude	41%
Attending ranger-led programs	30%
Nature study	20%
Beach driving	15%
Picnicking	14%
Bicycling	10%

Canoeing/kayaking	8%
Camping	7%
Surf fishing	7%
Surfing (wind/board/kite)	7%
Charter boat fishing	5%
Boat fishing	3%
Other	8%

Opinions about Crowding on this visit to Wright Brothers NMEM

Not crowded at all	35%
Somewhat crowded	42%
Crowded	18%
Very crowded	5%
Extremely crowded	0%

Preparation for Safety Issues while at Wright Brothers NMEM

Prepared? Yes	91%
Prepared? No	4%
Prepared? Not sure	5%

Safety Situations encountered at Wright Brothers NMEM

Sun	<i>Mentioned 10 times</i>
Heat	<i>Mentioned 10 times</i>
Cactus	<i>Mentioned 2 times</i>
Rain	<i>Mentioned 2 times</i>
Other Comments	<i>Mentioned 4 times</i>

Visitor Group Types

Family	73%
Family and friends	13%
Friends	8%
Alone	5%
Other	1%

Number of Visits

First Visit	73%
Second to fourth visit	23%
Fifth to eighth visit	3%
Nine or more visits	1%

Visitor Ages

10 & under	17%
11 to 15	12%
16 to 20	5%
21 to 25	3%
26 to 30	4%
31 to 35	5%
36 to 40	11%
41 to 45	12%
46 to 50	10%
51 to 55	7%
56 to 60	5%
61 to 65	4%
66 to 70	3%
71 to 75	2%
76 & older	1%

Outer Banks Visitors Bureau Visitor Research, Year-Long Visitor Profile 2005-2006

The Outer Banks Visitors Bureau as the primary marketing agency for the Outer Banks completes intensive research to adequately target audiences and provide for positive visitor experiences.

Key findings

- **Overall, beaches, accommodations, historic landmarks, and scenic areas or drives were primary motivators for visitation.** While the beaches were not the primary motivator among winter visitors, they were among spring visitors, who also rated interesting historic landmarks highly.

- **The majority of visitors came from Washington DC, Philadelphia PA, and Norfolk-Portsmouth-Newport News, VA.** In the spring, more visitors came from the Norfolk, Raleigh-Durham, and New York markets, while a notable drop in visitors from Washington, DC was recorded.

- **First-time visitors were more likely to visit the Outer Banks during the off-season.** This continues the trend seen in fall, as those who visit in the summer appear to be doing so over and over, while those visiting in the off-season are exploring the area for the first time.

- **The average Outer Banks visitor is white, affluent, married, and college educated.** Spring visitors are older than the average visitor; they earn slightly more; and tend to be better educated. In addition, spring visitors are far less likely to have children than summer visitors. The average trip was 6.3 nights in duration, however, the trips taken by spring visitors were the briefest. Dramatic differences are seen in those who travel with children under the age of 16. While 66% of summer visitors traveled with children, 32% of spring visitors traveled with their kids. Most visitors were from small towns and rural areas and did not tend to represent sophisticated households. Rather, they represented more traditional, heartland-type households from small towns and rural areas. Fall visitors were a bit older, with slightly lower levels of income and education.

Perhaps one of the biggest challenges for the Outer Banks will be generating repeat visitation. The competition is fierce and many people like to explore new places. The research shows that it is critical to meet or exceed expectations to generate any likelihood of return. Therefore, the area must focus on satisfaction and ways to make the destination appealing enough to generate repeat visitation.

Analysis of Visitor Group Types

Regional/National Vacationers

Characteristics: Park visitation consists of mainly vacationers from eastern states (Carolinas up to New England), as well as many visitors from the Midwest. Most come to the Outer Banks for a one-week or two-week vacation during summer. See demographic above.

Use of Wright Brothers NMEM: Experiencing the park for primary theme purposes.

Issues: Visitation is heavy during summer months at this small park. During the peak of the season there is not enough parking available for vehicles or seats available in the Flight Room Auditorium. The park needs to continue to develop children's and evening programming for summer months.

Education Groups

Characteristics: Organized school groups or other education groups, primarily during the autumn and spring months. The site hosts North Carolina Center for the Advancement of Teaching (NCCAT) teachers from around the state who come to learn about the Wright brothers and flight.

The site is involved in the Teacher-Ranger-Teacher program, having successfully hosted the park's first two Teacher-Rangers in 2009.

Use of Wright Brothers NMEM: Visiting school groups have little

impact on park resources other than use of facilities. However, they do impact park staff in terms of time required to present interpretive programs for the students. Teacher-Rangers serve as interpretive park rangers to learn about the park and NPS. Current NCCAT use of the park is minimal.

Issues: Other than a park orientation program, little is offered to visiting school groups beyond what general visitors experience. There is a need for teacher orientation, perhaps in-service training or professional development workshops and development of a more in-depth relationship with NCCAT. A potential partnership with Dare County schools might support teachers in developing online curriculum materials while the site pays for classroom substitute teachers and possibly for buses for field trips. Curriculum-based education programming needs to be developed. The park also needs to look at providing off-site education efforts, e.g. traveling trunks. The University of North Carolina Coastal Studies Institute is also an important education partner on the Outer Banks and this relationship needs to be more fully developed.

Special Event Attendees

Characteristics: Generally are local residents with some influx of regional, state, and national visitors, depending on the time of year. These visitors are generally

only in the park for the event, not to experience the park as a whole.

Use of Wright Brothers NMEM:

These groups visit the park to attend special events including park theme-related events (December 17 Anniversary, Wright birthdays, National Aviation Day, National Junior Ranger Day, Wright Kite Festival, centennial events, etc.) and non-theme-related events (Outer Banks Hospital Gala, marathons, public meetings, not-for-profit fundraising events, etc.) and are generally only in the park for the event, not to experience the park as a whole.

Issues: Due to the low level of park staffing, the multiple events held at the park can be overwhelming of staff time. Events that are thematically linked are important in fulfilling the park's commemorative mission as directed by Congress through the park's enabling legislation. Events that are not thematically linked need to be minimized by park management. Park staff needs to work closely with partners to find ways to meet the needs of the park and partners and respect long-standing event traditions.

Recreational Users

Characteristics: Mainly local visitors, year-round.

Use of Wright Brothers NMEM:

These individuals and groups use the park for walking, exercising their dogs, picnicking, bike riding, birding, nature study, etc.

Issues: Conflicts may develop among various user groups over

issues such as sanitation (dogs) and illegal activities. Many of these users are from the local community and have developed a connection with the park based on their recreational use. These visitors could potentially be engaged in volunteer projects to enhance park infrastructure. Currently, little to no interpretation is provided to these users.

Virtual Visitors

Characteristics: Local, national, and international visitors who "visit" through computers in their homes or offices via the park's website.

Use of Wright Brothers

NMEM: Although these visitors have no direct impact on the park's tangible resources, a great opportunity to develop stewardship and appreciation of the park's resources exists through the web. These visitors do impact park staff in the time required to create, update, and maintain the park's website.

Issues: The numbers of these "virtual" visitors are growing each year; as these numbers grow the importance of the park's website increases. There is a need for better interpretive services offered through the park website. Such services would present a way to tie the park to its partner site Dayton Aviation Heritage National Historical Park. The online social networking audience is particularly underserved. The education component of the

website for students and teachers needs development.

First Flight Airstrip Users

Characteristics: Local, national, and international visitors who enter the park with the sole purpose of landing or taking off at the First Flight Airstrip (those using the airstrip to visit the park are considered under the Regional/National Vacationers heading).

Use of Wright Brothers NMEM:

These groups have little impact on park resources other than use of the airstrip, airstrip parking, and pilots' booth.

Issues: Although these visitors are in the park for a relatively short period of time, they are connected to the park's main theme of aviation. These visitors could potentially be engaged in volunteer projects to enhance pilot infrastructure. Little to no park interpretation is provided for these visitors.

ISSUES AND INFLUENCES

This section includes influences and opportunities inside and outside Wright Brothers NMEM, resource-based issues, and internal issues that affect interpretation and education. Collectively, it reflects the perspectives of Wright Brothers NMEM management, as well as staff members and stakeholders.

Park-Wide Issues

Budget and Staffing

The most recent Business Plan for the Outer Banks Group was completed in 2001. The plan identified a significant gap between the current funding for the Outer Banks Group's operations and the funds necessary to fulfill the goals and mission of the Outer Banks Group and its three parks. Since then, staff levels within all divisions at Wright Brothers NMEM have remained basically the same. Some short-term relief has occurred due to temporary infusion of Centennial seasonal staffing funds. As a small park within the Outer Banks Group, Wright Brothers NMEM has to compete with the other parks in the group for resources, including staffing and funding.

Tourism and Visitation

The Outer Banks Visitors Bureau marketing helps significantly

to determine the demographics of, and visitation to, Wright Brothers NMEM. The park needs to continue, and further develop, its positive relationship with the Outer Banks Visitors Bureau. Additionally, visitation, as anything else, is impacted by the local and national economy.

Visitor Safety

Visitor safety issues within the park are generally limited to specific hazards associated with the infrastructure or a particular event. Cactus and prickly sand spurs are problematic for visitors on park grounds. During summer months the heat index can be extreme. Deer and geese pose a safety issue on the First Flight Airstrip, given the potential of a moving aircraft colliding with an animal. Ocean swimming safety messages (rip currents) are provided at the beginning of each interpretive program as nearly every visitor to this park is also a beach-goer.

General Management Plan

The park's current General Management Plan was developed in 1996 specifically to prepare the park for the upcoming 2003 First Flight Centennial event. The plan needs to be updated to reflect current park issues and needs.

World Heritage Nomination

The park is working with partners to develop a nomination for World Heritage site designation for the park as well as other Wright-related locations.

Information and Media Technology

Wright Brothers NMEM struggles to keep up with changes in information technology – both for staff computer needs and visitor interpretive media (only on two exhibits in the pavilion, none in the visitor center). Overall, the Outer Banks Group would benefit from having a visual information specialist on staff, or a partner to provide these services.

Special Park Uses

The park experiences a multitude of requests for special park uses that are, and are not, appropriate. Development of a pavilion use policy (underway) will assist in managing the decision-making on allowing events.

Community Connection

Descendents from families that are long-associated with the park want to have opportunities to enrich local awareness of the park history and community connection to that history. Many of these individuals are members of the First Flight Society.

Parking

Parking is inadequate in summer (and during some special events) in spite of the designation of overflow parking. This inadequacy is in part due to the extension of the time of visits to the park due to the addition of the pavilion. This parking inadequacy also mixes pedestrians with moving traffic

creating an unsafe situation.

Fundraising

The park is in the process of developing a partnership agreement with the First Flight Foundation to provide for construction of an annex to the visitor center with interpretive media to improve the visitor experience as well as to take the place of pavilion functions.

Signage

Way-finding signage needs to be improved to help visitors find their way around the park, i.e., without adequate signing, the two large facilities on the site are confusing and the visitor is not sure which facility they should enter first.

Natural Resource Management Issues

Vegetation Management

Vegetation management at Wright Brothers NMRM is an integral component of both the visitor experience and the conservation of North Carolina's natural coastal communities. Kill Devil Hill (originally a dune) and surrounding area were stabilized by planting vegetation, modifying natural dune dynamics.

Wright Brothers NMEM offers a diversity of vegetation communities including live oak scrub, pine-mixed hardwood forest, forested wetlands, open dunes, grasslands, and

marsh. Rare natural vegetation communities throughout the park support state-listed rare plants and animals, including woolly beach heather, Virginia pinweed, and the giant swallowtail butterfly. The NPS and North Carolina Natural Heritage Program plan to register these rare vegetation communities within a North Carolina Significant Natural Heritage Area. In comparison to the surrounding lands, the Memorial offers large areas of these vegetation communities.

The locations and types of vegetation communities contribute to protection of the night sky, soundscape, aesthetic values, and visitor experience of memorialization and solitude at the park.

Public safety concerns also factor into vegetation management at the park. These concerns include: high fire fuel loads along the park's boundary; management and operation of the First Flight Airstrip; wind damage to trees in areas of high visitor use; and presence of the native prickly-pear cactus in areas of high visitor use.



Wright Brothers NMEM protects natural as well as cultural resources.

Reducing exotic plant infestations and encouragement of native plant species, throughout the park and especially on Kill Devil Hill, presents a long-term maintenance challenge.

Wildlife Management

The acreage covered by the various vegetation communities offer refuge to wildlife native to the coastal plains North Carolina, including the hundreds of thousands of birds resting and feeding along the Atlantic flyway. The Memorial offers some of the last remaining natural habitats for non-migratory wildlife.

Public safety concerns also factor into wildlife management. Wildlife presence on and near the First Flight Airstrip (e.g., white-tailed deer and Canada geese) presents a potential safety hazard for Airstrip users. Evidence of resident Canada geese (e.g., individuals and their excrement) in areas of high visitor use presents a maintenance challenge and impacts the aesthetic value and visitor experience of the park.

Stormwater Management

The majority of Dare County is located within the 100-year floodplain and subject to periodic flooding resulting from a high water table, normal precipitation, and high energy weather events. The NPS is one of the land-owners facing the same stormwater management challenges as private land owners in the local community. Effective stormwater management and flooding within the park is a substantial concern, posing numerous threats to the long-term protection of the park and its nationally-, regionally-, and

locally-significant natural and cultural resources, as well as its scenic and aesthetic values and community relations.

Natural Resources Research Needs

- Develop a complete plant and animal species list.
- Develop a current vegetation map, with an emphasis on wetlands and non-native plant infestations.
- Develop management objectives for native and non-native species of management concern, including the abundance and distribution of rare plant communities, state-listed rare plant and animal species, and invasive animal species.
- Identify and monitor unique natural features, including rare species and communities.
- Reexamine fire fuel and hazard vegetation management objectives and strategies.
- Monitor night sky quality and develop management objectives.
- Participate in local community planning efforts to address stormwater drainage issues, potentially by development of a digital elevational model and acquisition of site-specific hydrological data.
- Develop a better understanding of the inundation risk faced by the park and the local community.

Cultural Resource Management Issues

Historic Structures

The park has five structures listed on the National Register of Historic Places:

- Wright Brothers Monument, Significance level of National .
- First Flight Marker, Significance level of Contributing.
- Wright Brothers Monument Powerhouse, Significance level of Contributing.
- Monument Curving Trail and Circular Road, Significance level of Contributing.

The Wright Brothers National Memorial Visitor Center is listed as a National Historic Landmark, Significance level of National.

The reconstructed camp buildings are listed as non-historic.

Wright Brothers Visitor Center

Continual exposure to the harsh marine environment of the Outer Banks has taken its toll on the park's flat-roofed, 40-year old, National Historic Landmark visitor center. The building has experienced continual roof leaks since it opened. Continual leaking presents structural concerns, impacts visitor use, and presents an environment which poses health and safety risks to employees and visitors alike.

Wright Brothers Monument

Restoration was done on the Monument and Power House in 1997 and 2008. However, the structure still has problems with drainage inside the structure.

Cyclic Preservation Maintenance

Cyclic preservation maintenance needs to be made a priority. Such maintenance should include: performing semi-annual inspection, water washing with detergents, waxing/oiling bronze and cast iron and painting cast iron, and routine graffiti removal, etc., as necessary on all historic structures in the park. Cyclic maintenance also needs to be completed on the none-historic reconstructed camp buildings.

Artifacts/Collections

The park has 68,540 artifacts (mostly archival items) catalogued and approximately 15,913 artifacts (mostly archival items) backlogged to be catalogued, the majority of which are stored in the Outer Banks Group museum building. A few artifacts are on display in the park's visitor center. Museum standards need to be met for all artifacts on display, and these artifacts should be regularly inspected by museum collection specialists for signs of deterioration and for security compliance.

Two projects have been put in for potential funding: Conduct Appraisal of Museum Property and Catalog 15,913 backlog

artifacts of Wright Brothers Museum Collections.

Maintenance Issues

Park maintenance staff has identified a variety of issues:

- The park's infrastructure does not support the number of visitors, causing an overloading of various systems, parking, septic, etc.
- The pavilion was slated to be removed five years after construction. That date is well past and these facilities are beginning to become a maintenance drain.
- There are continued problems with the Wright Monument such as water intrusion and humidity control that need to be addressed.
- There are structural issues with the current visitor center, especially with water intrusion that need to be addressed.
- There is a lack of maintenance personnel to maintain area on a day-to-day basis such as cleaning, trash removal and grounds maintenance. This will be compounded if a visitor center annex is completed. Special events tax the small maintenance staff.
- The access road that enters the park from Colington road leaves the maintenance shop vulnerable to theft.
- There are standing water issues on park grounds after heavy rains. This water floods parts of the pavilion, creating

- maintenance issues.
- The current maintenance facility is old and outdated, not meeting current needs.
- Coastal environs and barrier island dynamics (i.e. salt spray, high humidity) lead to continual maintenance needs and accelerated deterioration of park structures and equipment. Keeping park facilities and historic structures in safe and operable condition is a constant and significant workload difficult to keep up with current staffing levels.

Law Enforcement Issues

Law enforcement support (response and limited patrols) is provided by NPS rangers stationed at Bodie Island within Cape Hatteras National Seashore. Most incidents at the park involve visitor injuries, vandalism, and car clouting (break-ins). As the response time for NPS rangers can be up to an hour or more, there is great reliance on local law enforcement (Kill Devil Hills Police Department or Dare County Sheriff's Office) for assistance with incidents that require a 911 response. The park has general agreements for mutual-aid law enforcement response with these two law enforcement entities. The park has concurrent jurisdiction with the State of North Carolina.

Fire/Emergency Medical Services

The Kill Devil Hills Fire Department serves the park. Their station is located one mile north of the park entrance. The park has a cooperative agreement with this fire department for structural and wildland fire response at the park. Dare County Emergency Medical Service provides medical response. This agency is rated at the paramedic level/ advanced life support. EMS Station 1 serves the park and is located one mile north of the park entrance. Dare County EMS also utilizes a BK-117 helicopter for life flight operations within the county including the park.

Aviation Management

The law enforcement division is charged with managing the First Flight Airstrip. This involves close coordination with the North Carolina Department of Aviation.

Special Events

Law enforcement staff is often called upon to help staff/manage special events at the park. This pulls staff away from patrols at Cape Hatteras NS.

Fee Collection

The Law Enforcement division also supervises the fee collection operation at the park.

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Interpretation Issues

Interpretive Staffing

Long-term interpretive rangers at Wright Brothers NMEM have retired, or will retire soon. With this, the site is losing the institutional memory those individuals carry, their wisdom, and their ties to the local community.

Although there has been a reduction in permanent interpretive staff over the years, the park still has year-round staffing needs that are now filled by seasonal staff who work a maximum of six months per year. Due to the turnover of this seasonal staff, park must engage in almost constant training: seasonal staff is barely trained before their appointment ends. There is a strong need for this year-round seasonal staff to be replaced by permanent staff.

Interpretive Training

In recent years, great improvements have been made to seasonal interpretive training at the Outer Banks Group. Additionally, the availability of on-line Eppley Institute courses has made provision of basic interpretive training more manageable, given the constant turnover of seasonal staff. The park's permanent interpreters need to attend Local Interpretive Coach training so that they can more effectively coach seasonal staffers on their interpretive

programs and techniques and begin work towards certification. The permanent interpreters also need to work on Interpretive Development Plan certification.

Community/Outreach Interpretation

In 2007, the Outer Banks Group began a community education program series on the various parks' themes and resources titled *Know Your Park*. This series takes place during winter months. Although this program has been very successful at Cape Hatteras NS and Fort Raleigh NHS, it has not met with success at Wright Brothers NMEM. Park staff needs to analyze the reason for this and adapt the program. Outreach is done on an as-requested basis. Most of this outreach is for aviation-related events outside of the local area.

Education Programming

No formal education programming exists at the park. Educational programming, particularly within local school systems, has yet to be developed. Such programming would have long-term benefits for the park. Developing personal connections between area children/families and the park will help in the long-term understanding and protection of park resources. The Teacher-Ranger-Teacher program has substantially raised awareness of the Outer Banks Group parks and NPS mission and policies within local schools.

Interpretive Work/Storage Space

With staff members' former offices converted for use as a bookstore, the interpretive division works out of very crowded office space in a single-wide trailer that is in poor condition. This single-wide trailer also houses the interpretive library and a very small break room (shared with Eastern National). This space is much too small to serve the needs of the number of permanent, seasonal and Eastern National staff for office space, library/study space, project space, mailroom, copy/fax machines and break room. There are plans to replace the Eastern National warehouse in the maintenance compound. The new facility will have offices and storage space for both Eastern National and the NPS.

Visitor Confusion with the Monument

As the Wright Monument is the predominate feature of the park, a majority of visitors assume that the Monument marks the take-off point of the first flight. Another misconception is that the Wright brothers are buried underneath the monument. The park needs to find ways to emphasize the historic first flight area to make it more memorable for today's visitors.

Paul E. Garber First Flight Shrine

The park is in the process of engaging the First Flight Society in discussion and development of a cooperative agreement that fully outlines the responsibilities for display of the shrine and for restoration and insurance.

Dated Exhibits

Interpretive media at the site are largely limited to some very effective wayside signs, 1960s-style traditional exhibits in the visitor center, and "temporary"-styled exhibits in the pavilion. Without additional media choices for visitors, a great deal of responsibility for telling the Wright brothers' story falls to personal interpretation by staff members.

The officially-designated historical nature of the visitor center, including its traditional exhibits, requires very sensitive and thoughtful decisions about future use of the building. The visitor center exhibits are outdated and lack a clear storyline. Opportunities abound to tell this story more dynamically, and in ways that would appeal to younger audiences. New media options and hands-on experiences should be explored to provide more services to more visitors, and to ease the strain on the staff. These media should use real peoples' voices in order to bring the site to life. The park does not yet have an orientation film introducing the Wright brothers' story.

Interpretive Facility Issues

- Pavilion – the pavilion is nearing the terminus of its useful lifespan. Its loss will be significant to interpretive programming, special event execution, and community use.
- Visitor Center – continual leaking of the visitor center poses problems for visitor use and for protection of artifacts on display. At times, Flight Room Auditorium programs are standing-room-only, creating a negative experience for visitors who cannot find seats.
- Camp Buildings – the protective glass door of the camp buildings is reflective and visitors cannot see inside the building through the glass door.
- Pilot's Booth – park staff need to provide interpretative media at this park entrance for aviators.

Movie

The park has no orientation or feature film. Development of both would greatly enhance the visitor experience at this park.

Alternate/Evening Programs

The evening programs that were offered in 2009 were very popular. The park should look at ways of enhancing/continuing this experience. Additionally, the site provides an excellent venue for programs like the popular kite-flying program. Park staff should work towards providing such specialty programming that would be popular with visitors.

Website

The Wright Brothers NMEM website is under-developed, and could be enhanced with new media (for example, podcasts), social networking, and additional resources.



The site's popular kite-flying program

EXISTING CONDITIONS (2009)

GENERAL PARK INFORMATION

The park is located at Mile Post 7.5 on U.S. Highway 158, Kill Devil Hills, Dare County, North Carolina, on the Outer Banks barrier islands. It is part of the NPS Outer Banks Group, which also includes Fort Raleigh NHS and Cape Hatteras NS.

The Town of Kill Devil Hills is a part of the interlocking beach resort communities in the middle beaches of Dare County. It is the largest municipality in the county, with a year-round population of almost 7,000. The town was incorporated in 1953 – the first incorporated town on the Outer Banks.

U.S. Highway 158 forms the eastern boundary of the park, with the exception of a small buffer parcel of land between Highway 158 and North Carolina Route 12. Private property lines the west and north boundaries; and Colington Road effectively forms a south boundary, with the exception of a small parcel on the south side of Colington Road.

Vegetated areas surround the borders to the west and southwest, with more developed areas to the southeast, east, and north. (See map on page 3.)

Wright Brothers NMEM is open seven days a week, year-round, closed only on Christmas Day.

The park is open from 9 a.m. to 6 p.m. Memorial Day to Labor Day and 9 a.m. to 5 p.m. the rest of the year.

Most visitors arrive by car, though some also arrive by bicycle via an adjacent bike path. There are no public transit options in the area, but taxi service is available. The nearest commercial airport is in Norfolk, Virginia, about 100 miles to the north. There is a regional airport in Manteo, North Carolina, and during daylight hours air travelers may also use the First Flight Airstrip located in the park.

Coastal North Carolina, moderated by warm water from the Gulf Stream 50 miles offshore, has a temperate climate with mild winters and summers that are attractive to residents and tourists alike. Hurricane season generally lasts from early June to late November. Nor'easters are common during winter months and can bring days of unpleasant cold and windy weather.

INTERPRETIVE STAFFING

The interpretive staff is small, especially considering that personal interpretive services make up the bulk of the programs offered. In the summer of 2009, two local Teacher-Rangers and a Youth Partnership Program (YPP) diversity student hire were also on staff.

Volunteers are integral to the site's operations, with some volunteers having logged more than 6,000 hours, and one individual who has volunteered at the site for twenty years. In FY2009, 15 interpretive volunteers worked 4,662.5 hours at the park. This is equivalent of 2.24 year-round staff.

FTE = Full-Time Equivalency (one work-year: 2080 hours)

FT = Full time (5 days per week)

PT = Part time (2 days per week)

Park Base Funded

Position Title	Status	Grade	FTE	Incumbent
<u>Headquarters</u>				
Outer Banks Group Chief of Interpretation	Permanent FT	GS-12	1.0	Mary Doll
Outer Banks Group Interpretive Administrative Assistant	Permanent FT	GS-06	1.0	Collette Johnson (FY 2010)
<u>Wright Brothers NMEM</u>				
Year-Round Park Ranger	Permanent FT	GS-09	1.0	Fent Davis (retired 2010 this position will be replaced by at GS-11 Supervisory Park Ranger for Wright Brothers NMEM and Fort Raleigh NHS)
Year-Round Park Ranger	Permanent FT	GS-09	1.0	Darrell Collins
Summer Park Ranger	Seasonal FT	GS-05	0.5	
Summer Park Ranger	Seasonal FT	GS-05	0.5	
Summer Park Ranger	Seasonal FT	GS-05	0.3	
Winter Park Guide	Seasonal FT	GS-05	0.5	
Winter Park Guide	Seasonal FT	GS-05	0.5	

Project (one-year, non-recurring) Funded

Position Title	Status	Grade	FTE
Centennial Summer Park Ranger	Seasonal FT	GS-05	0.2 (shoulder seasons)
Centennial Summer Park Ranger	Seasonal FT	GS-05	0.5
Centennial Summer Park Ranger	Seasonal FT	GS-05	0.5
YPP Summer Park Guide	Temporary FT	GS-04	0.2
Teacher-Ranger	Temporary FT	N/A	0.02
Teacher-Ranger	Temporary FT	N/A	0.02
Centennial Winter Park Guide (this position was a Wright Brothers NHS visitor center 2 days/week)	Seasonal FT	GS-05	0.5

2009 Staffing Chart

Park Base Funded

Project Funded

Staff Position	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Permanent FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT
Permanent FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT
Summer Ranger				FT	FT	FT	FT	FT	FT	FT		
Summer Ranger				FT	FT	FT	FT	FT	FT	FT		
Summer Ranger FT				FT	FT	FT	FT	FT	FT			
Summer Ranger FT				FT	FT	FT	FT	FT	FT			
Summer Ranger FT				FT	FT	FT	FT	FT	FT			
Summer Guide FT YPP						FT	FT	FT				
Summer Teacher-Ranger						FT	FT	FT				
Summer Teacher-Ranger						FT	FT	FT				
Winter Guide FT	FT	FT	FT	FT						FT	FT	FT
Winter Guide FT	FT	FT	FT	FT						FT	FT	FT
Winter Guide FT	FT	FT	FT	FT						FT	FT	FT

INTERPRETIVE FACILITIES

The Wright Brothers Visitor Center

The 9,938 square foot visitor center (1960), a National Historic Landmark, is an early design of architect Romaldo Giurgola (who later became internationally renowned) and represents a classic visitor center of NPS Mission 66 development. The visitor center has been restored to its 1960s appearance, including refurbished period exhibit elements. The visitor center houses an information/orientation area (52.7 feet x 22.10 feet, 1164 SF), the Flight Room Auditorium (59.11 feet x 59.11 feet, 3494 SF), an exhibit space (59.11 feet x 26.3 feet, 1554 SF), an Eastern National bookstore (660 SF), Eastern National offices/storage, and public restrooms. The Flight Room Auditorium seats approximately 115 visitors and houses a flyable 2003 replica of the 1903 Flyer, a 1902 Glider replica, and the Paul E. Garber First Flight Shrine.

The park staff offices and break room are located in an aged single-wide trailer (520 SF) stationed outside of the visitor center next to its north exterior wall.

The rear plaza of the visitor center serves as a gathering site for various interpretive programs.

Next to the plaza is a plaque dedicated to the Wrights' soaring achievements.

The visitor center is open 9 a.m. to 6 p.m. daily the Friday of Memorial Day weekend through Labor Day and from 9 a.m. to 5 p.m. daily the rest of the year (closed Christmas).

The Centennial Pavilion

The Centennial Pavilion is a "temporary" building (19,207 SF) erected for the 2003 First Flight Centennial celebration. Although the pavilion was intended to be temporary, it provides valuable interpretive media and programming space. The vinyl-clad, steel frame structure's five-year warranty has expired. The temporary nature of the structure means that ongoing operating and repair costs are rising significantly as the structure's useful life span is coming to an end.

The northern section of the pavilion (6,976 SF) is filled with a variety of exhibits provided by various partners/sponsors. There is also a small gift shop (294 SF), run by Eastern National under a concession contract. Free literature including the park brochure, newspaper, publications, safety information, and orientation are available at the information desk.

The southern half of the pavilion (9,730 SF) is an auditorium used for presentation of activity/



Pavilion interior

children's programs and the presentation of various videos. This space is used by the park to host most of its special events, and is also made available to the community for meetings and non-theme related events. This space contains a simple elevated 2.5 feet high stage, a large screen (12 feet x 8.5 feet), and a professional transportable sound system. The stage is made of sixteen 4 foot x 8 foot sections. When the 16 sections are combined in a square, the total area is 32 feet x 16 feet. The south side of this room contains an airplane hangar-sized door that is opened on special events.

A connecting hallway between the exhibit and the auditorium has restrooms, sponsor recognition board, and a bottled water vending machine.

Camp Buildings: Living Quarters and Hangar

Located near the visitor center, the Wright brothers' living quarters and hangar are reconstructed at the original locations. The living quarters is furnished with items similar to those that the Wrights used from 1901 to 1903 and the hangar replicates the building where the Wrights stored their 1903 Flyer. Visitor access to the living quarters is limited to viewing the interior through a Plexiglas door. Designed to protect the structure, this visual barrier limits the quarters experience considerably. Life at Kitty Hawk interpretive programs are offered here. This is a popular location for informal interpretive contacts -- during these times the building is open for the public to enter.



Visitors explore the reconstructed Wright brothers' living quarters.

Historic Landscape, Markers and Monuments

Flight Line: First Flight Boulder and Markers

Visitors encounter the true power of the site just a few steps outside the visitor center, when they approach the actual spot from which the flying machine took off on four separate flights on December 17, 1903. A large granite boulder commemorates the take-off point for those first successful powered, controlled flights. This boulder was dedicated on December 17, 1928, with Orville Wright as the guest of honor. The location of the first flight lift-off was confirmed by Orville. Four smaller granite markers designate the landing points of the four flights on that first day of human flight.

Historic Landscape

The park has achieved significance as an example of a designated commemorative landscape that has evolved over time. The commemorative landscape is defined as a grassed mall 2,852 feet long by 750 feet wide running north to south between the Wright Brothers Monument and the fourth landing site marker and bounded on the east and the west by drainage ditches dug in the 1930s. Distinctive commemorative features of the mall include the Wright Brothers Monument, the First Flight Marker, the Kill



First Flight Boulder

Devil Hill curvilinear paths, the circular road, and the unimpeded spatial relationship between the monument and marker. Certain landscape features immediately around the visitor center are also defined as within the National Historic Landscape boundaries.

The Wright Brothers Monument

The most prominent feature of the site, visible for miles, is the 60-ft. Wright Brothers Monument atop Kill Devil Hill. Dedicated in 1932, the monument is inscribed with a tribute to the genius and perseverance of the brothers and features busts of each of the brothers. Designed by the New York architecture firm Rodgers and Poor, it is designed in an Art Deco style with wings on either side symbolizing flight. From the inside of the structure, a series of narrow winding stairs leads to a very small observation nook at the top. Visitors do not have access to the interior. In 2009, it was open two times per week for a scheduled summer interpretive program (by reservation only). The monument is not ADA accessible (walkways leading up the hill are too steep). The program was discontinued in 2010 due to water issues. The monument experiences continued structural issues, especially with water condensation and leaking.

A small granite building at the south-side foot of the hill formerly housed the generator needed to

provide electricity for the rotating beacon. It is a great reminder that no place on the Outer Banks was yet wired for electricity at that time.

The First Flight Sculpture

Located south of the monument, the sculpture commemorates the December 17, 1903, first flight scene with life-size representations of the plane and the individuals who were present at that historic moment. Based on the famous photograph of the first flight, and designed by Stephen Smith, the sculpture is made of 10,000 pounds of bronze and stainless steel and was designed to be a hands-on piece of art. A gift from the State of North Carolina in 2003, the sculpture is a popular attraction and photo opportunity for visitors, who can climb on board the first airplane. It is an appropriate site for roving and informal interpretation by park staff.

Other Visitor Use Facilities

First Flight Airstrip and AOPA Pilots' Building

The First Flight Airstrip, constructed in 1963, is a logical feature of the site. Private pilots fly in and out of this active airstrip, and can tie down their aircraft at the field for up to 24 hours and a total of 48 hours in any 30-day period at no cost. It features a 3,000 foot x 60 foot paved runway. The runway is unlighted, and

night operations are absolutely forbidden. A small parking apron is at the south end of the field, with firm grass areas available for parking if the apron is full (as it often is). No fuel or services are available.

A pilots' facility built by the Aircraft Owners and Pilots Association (AOPA) and donated to the park in 2003 is a 900-square-foot building adjacent to First Flight Airstrip that offers a pilots' room with internet access for checking weather and flight conditions. The facility also includes restrooms as well as a small vacant room (approximately 14 feet by 19 feet) that provides potential interpretive or education space.

Little to no interpretation is provided at these locations.

PARK MUSEUM COLLECTIONS AND STUDIES

Objects and archival materials relating to the Wright brothers' early aeronautical experiments include original tools and airplane parts, and several pieces of the 1903 Wright Flyer; reproductions of the Wright brothers' 1902 glider and the 1903 powered airplane on exhibit. The park has 68,540 artifacts (mostly archival items) catalogued and approximately 15,913 artifacts



Wright Brothers Monument



The First Flight Sculpture



AOPA Pilots' Building

(mostly archival items) backlogged to be catalogued, the majority of which are stored in the Outer Banks Group museum building. A few artifacts are on display in the park's visitor center. Museum standards need to be met for all artifacts on display, and these artifacts should be regularly inspected by museum collection specialists for signs of deterioration and for security compliance.

The following studies have been completed:

- Wright Brothers National Memorial Visitors Center Historic Structure Report (2002)
- Wright Brothers National Memorial: An Administrative History (1967)
- Historic Resource Study (1997)
- Wright Brothers National Memorial Cultural Landscape Report (2002).

MEDIA CONDITIONS

Media Inventory Database (MIDS)/Facility Management Software System (FMSS)

The NPS Media Inventory Database System (MIDS) reports on the content and condition of NPS interpretive media: Audiovisual programs, Exhibits, Historic Furnishings, Interpretive Plans, Publications (Form 10-80), and Wayside Exhibits. MIDS permits parks to ADD new media inventory records, UPDATE existing records, or DELETE obsolete records, providing NPS managers, park staff, and media specialists with up-to-date online access to the content and condition of NPS interpretive media Service-wide.

Additionally, all park media were entered into the Outer Banks Group Facility Management Software System (FMSS) in 2010, creating an extensive database of the parks interpretive media.



Listing for Park WRBR

Inventory Listing: Records 1 to 12 of 19

Select the Media Title link to view a detailed record.

Park	Media	Last Update	Media Title	Content/Condition Acceptable	Install Date	HFC Produced
WRBR	EXH	01/13/2010	WRBR	No / Yes	1964	Yes
WRBR	FURN	08/31/1999	WRBR - 1	No / No	1993	Don't Know
WRBR	FURN	01/13/2010	WRBR - 2	No / Yes	1993	Don't Know
WRBR	INTRP	12/19/2001	General Management Plan	Yes / Yes		Yes
WRBR	PUBL	01/12/2009	Wright Brothers Official Park Map and Guide (2007 Text) PDF	Yes / Yes		Yes
WRBR	WAY	03/08/2006	01, Field for Flight PDF	Yes / Yes	2000	Yes
WRBR	WAY	11/19/2003	01, Pitch, Roll, and Yaw	Yes / Yes		Yes
WRBR	WAY	11/19/2003	02, A Monument to the Impossible	Yes / Yes		Yes
WRBR	WAY	03/08/2006	02, The Camp PDF	Yes / Yes	2000	Yes
WRBR	WAY	11/19/2003	03, Big Kill Devil Hills	Yes / Yes		Yes
WRBR	WAY	03/08/2006	03, The First Flight PDF	Yes / Yes	2000	Yes
WRBR	WAY	03/08/2006	04, Four Powered Flights PDF	Yes / Yes	2000	Yes
WRBR	WAY	03/08/2006	05, Kill Devil Hills PDF	Yes / Yes	2000	Yes
WRBR	WAY	03/08/2006	06, The 1901 Glider PDF	Yes / Yes	2000	Yes
WRBR	WAY	03/08/2006	07, The 1902 Glider PDF	Yes / Yes	2000	Yes
WRBR	WAY	03/08/2006	08, The 1903 Flyer PDF	Yes / Yes	2000	Yes
WRBR	WAY	03/08/2006	09, 12 Second that Changed the World JPG PDF	Yes / Yes	2004	Yes
WRBR	WAY	03/08/2006	10, If you decide to try your machine here... JPG PDF	Yes / Yes	2004	Yes
WRBR	WAY	03/08/2006	11, In commemoration of the conquest of the air... JPG PDF	Yes / Yes	2004	Yes

Website

Wright Brothers NMEM's website (<http://www.nps.gov/wrbr>) is an NPS Content Management System (CMS) design website. The home page presents park information, resources for kids and teachers, and some background materials.

Audio Visual Programs

Video programs shown in the pavilion auditorium include:

- *Wright Brothers' Journey of Inventions* (27 minutes): This documentary was done for the 100th anniversary. It tells the full story of the Wright brothers and uses the voices of John Glenn and Neil Armstrong as Wilbur and Orville.
- *Kill Devil Hills* (40 minutes): Narrated by Harry Combs, this public-friendly film documents the science behind the invention of the airplane
- *Wright Brothers at Kitty Hawk* (30 minutes): This chronological documentary shows brief segments and mostly deals with Kitty Hawk.
- *The Wright Stuff* (50 minutes): This film uses segments from the movie *The Wright Stuff* and compares the mental/intellectual/physical aptitudes of the Wright brothers to modern astronauts.

Audiovisual presentation associated with temporary pavilion exhibits include:

- *The Outer Banks around the turn of the Century* (4 audio stations): These stations are narrated segments with oral history interviews.
- *66 Years to the Moon* (1 monitor): This monitor presentation was developed for the State of North Carolina Centennial of Flight Exhibit. The monitor has not functioned for several years.

Touch Screen presentations, *Six Challenges of Flight*, are available in The Wright Experience: Six Challenges to Flight exhibit (6 stations).

Exhibits

Visitor Center Exhibits

The visitor center exhibits, which are in fair condition, are traditional style from the 1960s era and include graphic panels, photographs, reproductions of documents, and authentic Wright brothers' objects, as well as an excellent diorama depicting the day of the first flight and a reproduction of the Wrights' first wind tunnel. The exhibits present the story in chronological order, beginning with early family life in Dayton, Ohio. The exhibits are effective considering their period, and do a good job of addressing the science behind the Wright brothers' achievements, but they work best when personal interpretation is available. This is especially important for



Visitors Center Exhibit



Flight Room Auditorium
ranger program

young audiences as there are no electronic media available to visitors, and the site does not have its own orientation film. Other objects on display include tools the Wrights' used in their bicycle shop, an original propeller used during experiments, a display of model airfoils, and fabric from the 1903 flyer, as well as Orville's engineering tools, flyer chains and sprockets, and a propeller shaft.

Flight Room Auditorium Exhibits

The Flight Room Auditorium in the visitor center displays full-scale reproductions of the 1902 Glider and the 1903 Flyer. The 1903 Flyer is in good condition. The 1902 Glider is in poor condition. The Flight Room Auditorium is the heart of the site's interpretive programming. Visitors gather here for ranger programs on an hourly basis during the busiest times of the year. The Flight Room Auditorium also contains Mrs. Tate's sewing machine which the Wrights used to make the wing covers for the 1900 Glider.

Two walls of the Flight Room Auditorium are lined by the Paul E. Garber First Flight Shrine (started in 1966). The shrine is a series of portraits commissioned and owned by the First Flight Society. These portraits are on display in the Flight Room Auditorium through a cooperative agreement with the NPS. The shrine honors those individuals and groups that have achieved

significant "firsts" in aviation's development. A new member of the First Flight Shrine has been inducted during December 17 ceremonies every year since 1966. Inductees are honored with the unveiling of their portrait during the December 17 anniversary event. The shrine portraits are in good condition. The park needs to address protection of these portraits with the First Flight Society in the next established cooperative agreement.

Pavilion Exhibits

The semi-permanent pavilion exhibit hall houses exhibits sponsored by various partners. Exhibits include:

- Outer Banks at the Turn of the Century (donated to the park in 2003 by the Outer Banks History Center) is in fair condition.
- 100 Years of Powered Flight; From Kitty Hawk to the Moon in 66 Years (on loan to the park from NASA) is in good condition.
- The Wright Experience: Six Challenges to Flight (kiosks 1-5 are on loan from the Discovery of Flight Foundation, kiosk 6 is owned by the NPS). This is an interactive exhibit where visitors can access touch screen computer modules, a reproduction of a 1902 glider, a functional wind tunnel, and a reproduction of the 1903 engine. The park has a fundraising agreement established with the Discovery

of Flight Foundation which allows the Foundation to raise funds to cover the costs of donating this exhibit to the park. The exhibit is in fair condition. The interactive media technology in this exhibit provides great opportunity to incorporate continued updating of technology changes, allowing the park to keep pace with the experience of today's (and tomorrow's) visitors.

- Honoring the Wrights – The First Flight Society (on loan from the First Flight Society) is in poor condition.
- Wright Brothers Fly in Europe (donated to the park by Bombardier in 2003) is in good condition.



Section of the Wright Experience exhibit in the pavilion

Publications

Wright Brothers NMEM Official Unigrid Brochure

The park's free unigrid folder (revised in 2008) informs visitors about the park. The color brochure folds out to present the history of the site, trip-planning information, and a map, as well as diagrams illustrating principles of flight, a timeline, and an illustration of the 1903 aircraft.

The Aircraft Owners and Pilots Association (AOPA) First Flight Pilot Facility brochure is a tri-fold brochure that provides information about the history and amenities of the pilot facility.

Park Newspaper, In The Park

The Outer Banks Group currently prints two editions of this free, full-color park newspaper each year: 65,000 copies of the summer edition and 35,000 of the fall-winter-spring edition. The design and publication of the newspaper are contracted to an outside vendor. The summer newspaper covers interpretive program schedules and articles on the NPS areas administered by the Outer Banks Group, including Wright Brothers NMEM. The newspaper is paid for by the Outer Banks Group's Eastern National Interpretive Donations Account.

Additional publications include handouts on various topics. The most used are a list of inductees of the First Flight Shrine, translations (German and French) of the Wright story, two handouts on the Wright Monument, and a history of the Wright brothers handout.

Wayside Exhibits

Base type/Title/Measurement

Location

Screenprint Embedded in Fiberglass with Traditional Base

A Monument to the Impossible 36w x 24h

*Base of Kill Devil Hill
near the Pilots' Booth*

Roll, Pitch, and Yaw 36w x 24h *Traditional*

*Base of Kill Devil Hill
near the Pilots' Booth*

Big Kill Devil Hills 36w x 24h *Traditional*

*Base of Kill Devil Hill
near the Pilots' Booth*

Porcelain Enamel with Cantilevered Base

Field for Flight 30w x 20h

*Outside the Visitor
Center*

The Camp 30w x 20h

Camp Buildings

Four Powered Flights 30w x 20h

*Facing the Flight
Markers*

Kill Devil Hills 30w x 20h

*End of rail, facing flight
line*

The First Flight 30w x 20h

End of rail, facing Hill

The 1901 Glider 20w x 20h

On sidewalk to Hill

The 1902 Glider 20w x 20h

On sidewalk to Hill

The 1903 Flyer 20w x 20h

On sidewalk to Hill

12 Second that Changed the World 36w x 24h

*Base of Hill near
Sculpture*

If You Decide to Try Your Machine Here... 36w x 24h

*Base of Hill near
Sculpture*

In Commemoration of the Conquest of the Air 36w x 24h

*Base of Hill near
Sculpture*

Aluminum

Experiments 44.5w x 34.5h *Raised Letter Upright*

*End of sidewalk to the
Hill*

Bulletin cases

There is one bulletin case in the park. It is 2 feet x 3 feet and is located in the visitor center on the wall behind the information desk (a second bulletin board, 3 feet x 2 feet was installed at the Pilots' Booth in 2010).

PERSONAL SERVICES

Interpretive Programs

Visitors experience the site via scheduled interpretive talks, guided tours, self-guided tours, or family activities (up to 100 children participate in each) that include kite making and flying, paper airplanes, and science-based programs. All three sister parks in the Outer Banks Group (including Cape Hatteras NS and Fort Raleigh NHS) together offer an astonishing 235 interpretive programs per week during high season. In the summer 2009 season (Friday of Memorial Day weekend through Labor Day), the ranger-led interpretive programming schedule at Wright Brothers NMEM included a content rotation of nine different programs with a total of 78 presentations delivered every week. Video presentations are shown hourly from 10 a.m. to 5 p.m. every day at the First Flight Pavilion Auditorium and are subject to the availability of the auditorium.

Programming in 2011 may decline due to reduction in seasonal staffing.

Wright Brothers NMEM programs include:

Experiments with Flight (30-45 min) (First Flight Pavilion Auditorium)

Come and explore why and how

things fly and the principles that enabled the Wright brothers to get off the ground. A family science activity designed for kids.

First Flight Tour (30 min) (Visitor Center Rear Patio)

Step back in history during this short walk to the actual site of the Wrights' first powered flights. Learn about the first flight and the events of that historic December day.

Flight Room Talk (30 min) (Visitor Center Flight Room Auditorium)

Learn about the Wrights and how they developed the first successful airplane. See a demonstration of their control system on a reproduction of the 1903 Flyer.

Fun in Flight (30 min) (First Flight Pavilion Auditorium)

A family activity designed for the kids. Experience the fun of building a gliding machine. Design and construct a paper airplane and test the winds of the Outer Banks.

Wright Kite (30-45 min) (First Flight Pavilion Auditorium)

Calling all kids!! See a demonstration of kite building and join in the fun of flying a homemade kite (or bring your own); then test the winds of Kitty Hawk just like Wilbur and Orville.

Life at Kitty Hawk (30 min) (Reconstructed Camp Buildings)

Learn why the Wrights chose Kitty Hawk and get a taste of "vacationing" on the Outer Banks in the early 1900's.

The Wright Brothers 100 Years Ago (30 min) (Visitor Center Flight Room Auditorium)

Follow the progress of Wilbur and Orville and their invention after the first flight. Learn about the Wrights' 1909 historic accomplishments and their impact on future aviation.

Family Night with Flight (2 hrs) (First Flight Pavilion Auditorium)

Family activities designed for the kids. Pique your curiosity; get an introduction to flight through gadgets and toys, much as Wilbur and Orville did as children. Experience the fun of building a gliding machine. Free admission to

the park after 6 p.m. for this evening program.

Monument to the Dream Tour (2 hrs) (Wright Monument, Pre-registration required)

Climbing to the top of the Wright Brothers Monument is a unique experience! Limited to 30 participants. Pre-register beginning the Saturday prior to the program by calling the park at (252) 441-7430 x 230. Visitors with heart, respiratory, or other medical conditions, or who have trouble climbing stairs should use their own discretion as to whether to climb the monument. Drink plenty of water prior to climbing the hill.

The chart below details the 2009 summer program offerings for the park.

WRIGHT BROTHERS NATIONAL MEMORIAL							
(#) Program is ADA Accessible	Sun	Mon	Tue	Wed	Thurs	Fri	Sat
Flight Room Talk (#) 1	10:00 12:00 1:00 2:00 4:00	10:00 11:00 12:00 2:00 3:00 4:00	10:00 11:00 12:00 2:00 3:00 4:00	10:00 11:00 12:00 2:00 3:00 4:00	10:00 11:00 12:00 2:00 3:00 4:00	10:00 11:00 12:00 1:00 2:00 3:00 4:00	10:00 12:00 1:00 2:00 4:00
First Flight Tour (#) 2		11:30 3:30	11:30 3:30	11:30 3:30	11:30 3:30	11:30 3:30	
Life at Kitty Hawk (#) 3			1:30		1:30		
For Kids: Wright Kite (#) 4	11:00	10:30	10:30		10:30	10:30	11:00
For Kids: Experiments with Flight (#) 4	3:30	1:00	1:00	3:30	3:30	3:30	3:30
For Kids: Fun in Flight (#) 4	1:30	3:30	3:30	1:30	1:30	1:30	
The Wrights Brothers 100 Years Ago (#) 1				1:00	1:00		
For Kids: Family Night with Flight (#) 4			6:30p.m.	6:30p.m.			
Monument to the Dream Tour <i>Pre-register - see program description</i>		8:30a.m.			8:30a.m.		
Video presentations are shown hourly from 10 a.m. to 5 p.m. every day at the First Flight Pavilion Auditorium and are subject to the availability of the auditorium.							

A reduced schedule of programs is offered during the spring and fall months:

- Spring (May 1 through start of summer season) - *Flight Room Talk* (30 minutes) each weekday at 10 a.m., 12 p.m., 2 p.m. and 4 p.m. The movie, *How Strong is the Wind* (40 minutes), shown daily at 10:30 a.m., 11:30 a.m., 12:30 p.m., 1:30 p.m., 2:30 p.m. and 3:30 p.m. On Saturday and Sunday, *Flight Room Talk* is offered at 10 a.m., 12 p.m., and 4 p.m. *Fun with Flight* is offered at 2 p.m. The movie, *How Strong is the Wind* (40 minutes), is shown daily at 10:30 a.m., 11:30 a.m., 12:30 p.m., 1:30 p.m., and 3:30 p.m.
- Fall (after Labor Day until October 12) - *Flight Room Talk* (30 min.) daily at 10 a.m., 12 p.m., 2 p.m., and 4 p.m. *Fun with Flight* (45 min), at 11 a.m. Monday through Saturday, and at 3 p.m. on Sunday, Tuesday, Friday, and Saturday. *First Flight Tour* (30 min.) is given at 3 p.m. on Monday, Wednesday, and Thursday. Video presentations are shown hourly from 10:30 a.m. to 3:30 p.m. daily at the First Flight Pavilion Auditorium and are subject to the availability of the auditorium.
- December 17 First Flight Anniversary. This event is a very traditionalized formal ceremony managed by the First Flight Society. It starts with a pre-program wreath-laying ceremony at the First Flight Boulder by the descendants of the witnesses of the first flight. The formal program includes music played by the Elizabeth City Northeastern High School band, a posting of the colors by the ROTC cadets from Northeastern High School, an invocation, welcome from the park Superintendent and mayors of Kitty Hawk and Kill Devil Hills, speakers, induction of the newest member of the First Flight Shrine and portrait unveiling of the inductee, and a small military flyby. Fee-Free Day
- Wilbur Wright's Birthday on April 16. This event is a one-day family fun day from 10 a.m. to 4 p.m. Multiple programs geared towards children are offered and a birthday cake/punch is provided.
- National Aviation Day on August 19. This event, similar to Wilbur Wright's Birthday event, is a one-day event from 10 a.m. to 4 p.m. with multiple programs geared towards children. The park traditionally features a guest speaker for this event. August 19th is also Orville Wright's birthday. Fee-Free Day

Special Events

The site offers a number of theme-related special events throughout the year. These include:



A Flight Room Talk, the heart of the site's interpretive program

- Wright Kite Festival on the second weekend in July. This event, co-sponsored by a local commercial firm, Kitty Hawk Kites, is a two-day event. Large kites are displayed and the staff of Kitty Hawk Kites offer free stunt and power kite lessons. Kite flyers from kite companies, like HQ Kites, and kite flying organizations also attend this festival and offer free flying lessons. Kite making programs are also offered.
- Outer Banks Stunt Kite Competition on the first weekend in October. This is an event produced by Kitty Hawk Kites. It consists of two days of competitive kite flying, team performances and kites dancing to music. Kitty Hawk Kites will also give free stunt and power kite lessons for any spectator willing to learn. This contest attracts international competitors.
- Other Anniversary Events: other anniversary events take place on the site as appropriate. Examples of this include the 2003 First Flight Centennial Anniversary event and a soaring event scheduled for 2011 to celebrate Orville's soaring record of nine minutes and 45 seconds in 1911.
- Park staff participates in special events off-site as requested. Examples of this include the Experimental Aircraft Association AirVenture event every July in Oshkosh, Wisconsin, to which

the park has traditionally sent an interpreter for 1.5 weeks to provide programs to aviators attending the event.

PARK PARTNERS

A number of organizations partner with the site:

Eastern National

Eastern National is a nonprofit cooperating association serving as daily operating partner to Wright Brothers NMEM (and many other national parks) by providing retail, educational and commemorative items for purchase by visitors. Sales at the park bring in \$1.1 million/year, a very successful level of achievement.

Eastern National revenues are returned to the park in the following ways:

- Publishing of park newspaper
- Salaries of seasonal interpreters
- Travel for speakers
- Publication of Junior Ranger booklet
- Food for meetings
- Purchasing anything Federal monies cannot be used for
- Quick, no-bid purchases, etc.
- Competitive grants within the NPS for funding of research and public programs
- Volunteer dinners

The First Flight Society

The First Flight Society is a long-time partner that originally

helped to establish the park. It represents the site's founders and focuses on honoring the Wright brothers' accomplishments. The organization is a highly valued local partner that helps in maintaining ties to the community. Retaining the interest in the site of the local community is a concern, as it is felt that local support is critical to sustaining Wright Brothers NM. As such, the Society focuses on programs that promote the Wright brothers' accomplishments and keep their vision alive. They sponsor the annual December 17 ceremony and participate in the Wright brothers' birthday celebrations. They also own the First Flight Shrine displayed in the park's Flight Room Auditorium. The Society has a large and aging board. Younger members are needed to carry on the Society's traditions. The Society has no current formal agreement with the park.

The First Flight Foundation

The First Flight Foundation is a 501(c)(3) corporation was originally formed, as The First Flight Centennial Foundation, to support capital improvements needed for the First Flight Centennial celebration. Foundation provided support, included construction of the pavilion and a series of renovations to the Monument. The Foundation's current main goal is to raise money to build a

visitor center annex, and their focus is on new interpretive technologies that will engage young people. They may sponsor special events, and are currently sponsoring and supporting a special event to take place in October 2011, Soaring 100, commemorating the centennial of Wilbur Wright's record-breaking glider flight. The foundation's formal fund-raising agreement with Wright Brothers NM has expired.

The Discovery of Flight Foundation

The Discovery of Flight Foundation is a 501(c)(3) organization with a main focus in on the Wright brothers. They work to interpret and preserve the Wright heritage up to and beyond 1903, including raising money in order to work with a company, the Wright Experience, to build reproduction airplanes. They played a role in funding the 1903 Flyer reproduction in the park's Flight Room Auditorium and created an exhibit in the pavilion for the Centennial. The Foundation is working under a cooperative agreement with the park to raise funds to transfer the exhibit to NPS ownership. The organization has partnered with the Smithsonian Institution's National Air and Space Museum, the Academy of Model Aeronautics, and others in the development of formal STEM (Science, Technology,

Engineering, and Math)-based curricula and informal education programs. The Foundation participated in several events at Wright Brothers NMEM annually by providing speakers, demonstrations of original Wright artifacts, building techniques, reproductions, and other interactive media.

Outer Banks History Center

The Outer Banks History Center is a satellite of the North Carolina State Archives. The Outer Banks History Center enjoys a long-standing symbiotic relationship with the park. Research materials belonging to NPS are stored and curated at the History Center in order to make them more readily available for public access. Their core function is preservation of and access to original materials. It is recommended that Wright Brothers NMEM work closely with the History Center to develop interpretive media.

Outer Banks Visitors Bureau

The Outer Banks Visitors Bureau is a public authority charged with balancing tourism promotion with the preservation of the very assets that make tourism so popular in the region. The Bureau advertises Wright Brothers NMEM as part of its vacation destination package and features the site in its materials, including the extensive use of social media. The Bureau funds natural/cultural projects through grants and helps fund

special events via TAG money. The Bureau also staffs two NPS visitor centers on Cape Hatteras NS and provides invaluable research on visitors to the Outer Banks.

Dare County Schools

Dare County Schools has a limited relationship that includes a Teacher-Ranger-Teacher Program started in 2009.

North Carolina Center for the Advancement of Teaching (NCCAT)

NCCAT, which is run by the state, offers week-long seminars for teachers year-round. Topics vary each year, but NCCAT generally offers at least two seminars on aviation and flight in which the park participates.

The Smithsonian National Air and Space Museum

The Smithsonian National Air and Space Museum has original artifacts including the original 1903 Wright Flyer and their staff often provides speakers for special events.

The National Aeronautics and Space Administration

NASA has exhibits currently on loan in the Centennial Pavilion. They often provide activities at park events.

The Wright Family

The Wright Family provides support to the park at special events and serves as a connection for the park to the Wright brothers'

descendents and Dayton, Ohio. The Wright Family also serves as a resource for interpretation and oral history interviews about the Wrights in a way that no other source can.

Dayton Aviation Heritage National Historical Park (DAAV)

DAAV is a sister National Park System site located in Dayton, Ohio. The relatively new park was created in 1991. There has been some collaboration between the parks (i.e. dual park handbook) but more could be done.

Kitty Hawk Kites

Kitty Hawk Kites is a local business that provides two annual events at the park, the Wright Kite Festival and the Outer Banks Stunt Kite Competition, and is helpful in providing activities for other park events.

Other partners include:

- *Jockey's Ridge State Park*, operated by the state Department of Natural Resources, features dunes that resemble those that once existed at Wright Brothers NMEM. This park offers hang-gliding activities and a hang-gliding archive.
- *The American Institute of Aeronautics and Astronautics* built and donated the first Wright flyer reproduction.
- *The Library of Congress* has holdings that include much of the Wright brothers archives.
- *Wright State University* located in Dayton, Ohio, houses Wright collections.
- *Dare County Airport*
- *Wright Flight*, an organization for students in which good grades earn an airplane flight.
- *The Town of Kill Devil Hills*
- *The Town of Kitty Hawk*
- *Elizabeth City State University Aviation Department*, a newly developed department with which the park would like to develop a relationship.
- *North Carolina Department of Transportation, Aviation Division*
- *North Carolina Department of Cultural Resources*
- *University of North Carolina Coastal Studies Institute* has a current focus on the environment and natural resources. A planned future focus on cultural resources may create better chances for partnerships. The Institute represents six university sites and is eligible for a cooperative education studies agreement. It is recommended that Wright Brothers NMEM consider partnering with the Institute for projects that would create opportunities for students to work with and create interpretive technologies.
- *The American Soaring Society*, which hopes to do a soaring anniversary event at the park in 2011.

RECOMMENDATIONS

PERSONAL SERVICES

Personal services offered will be affected by national special emphasis programs, park issues, funding, and changes to visitor and community demographics. Wright Brothers NMEM has relied heavily on personal services in the past. While such services remain a strong element of interpretive programming at the site, a transition toward more media-based programming will be necessary in the future to meet the growing needs of new audiences and to remain relevant to society. Park staff should work strategically to center personal services on those themes where such an approach will be most effective. This strategy includes:

- Hire two additional permanent full-time Park Ranger positions to eliminate the need for year-round seasonal staff.
- Hire Volunteer Coordinator to manage the Volunteer Program (Outer Banks Group-wide need).
- Focus interpreter-led programming.
- Enhance training in certain areas.
- Re-evaluate presentation of special events.
- Develop “Pilots in Residence” program.
- Expand community outreach.

Focus interpreter-led programming

Interpreter-led programming should focus on presentation of themes and stories for which media solutions would be less effective. This approach includes:

- Continue to offer regularly scheduled *Flight Room Talks*.
- Continue to offer ranger-led *First Flight Tours* of the grounds.
- Move the fee collection operation into the visitor center during winter months so that the fee staff can operate the information desk, allowing interpretive staff to focus on delivery of interpretive services and projects.
- Continue to recruit and train volunteers that can assist with the provision of interpretive programming. Train all volunteers in the principles of the NPS Interpretive Development Program (IDP).
- Now that the centennial focus on the site has shifted, replace *The Wright Brothers 100 Years Ago* with the previously provided program – *The Wrights After 1903*.
- Continue to offer participatory demonstrations, including kites, paper airplanes, etc., that help interpret basic principles of flight like lift, drag, and stability.
- Continue and expand ranger-led learning activities that use real materials to teach about such principles of flight as

- aspect ratio, etc.
- Develop an outdoor ranger talk addressing the key Kitty Hawk features (e.g., wind, sand) that brought the Wright brothers to the area.
- Offer regularly scheduled story-telling programs featuring descendents of the families that assisted the Wright brothers, especially in mid-week during the summer.
- Station a ranger at the First Flight Sculpture to provide informal interpretation and enhance learning opportunities. Potential topics include the parts of an airplane, the people who witnessed the first flight and their background and role in “real life,” etc.
- Offer more evening programs, possibly advertised with Eastern National funds. Example: limited fee-based moonlight climbs of the Monument (by prior registration only). Evening programs should be positioned so they cover the costs of presenting them.
- Provide climbs of the monument appropriate to visitation.
- Provide Local Register Interpretive Coach training for all permanent staff.
- All permanent staff need to work towards completion of the NPS Interpretive Development Program modules.
- Continue Eppley Institute on-line interpretive training for all staff.
- Continue the 3-day summer seasonal interpretive training.
- Initiate orientation of other Outer Banks Group parks for seasonal staff.
- Provide new technology and interpretive media application/implementation.
- Provide volunteer management training.
- Enhance training of volunteers (orientation, interpretive skills, Eppley courses).
- Increase safety training for interpretive staff.
- Explore avenues for training opportunities provided by a friends group.

Enhance training in certain areas

Training of permanent, seasonal, and volunteer interpreters at the site is important as it enhances the effectiveness of site interpreters. Identified training needs include:

Re-evaluate presentation of special events

The number and frequency of annual special events can be a burden on interpretive staff, impacting staff workload. Recommendations include:

- Retain those events with an appropriate thematic focus, consistent with the pavilion use policy.
- Continue work with the First Flight Society in presentation



*Orville and Olivia
Photo courtesy Yvonne
Fredlake*

of the December 17 anniversary and other special events as appropriate.

- Consider elimination of the Wilbur Wright Birthday event in April due to the four other events taking place at the site during that month.

Develop “Pilot in Residence” program

Real airplanes have always been a significant visitor draw. The pilot’s booth would provide a venue for the occasional volunteer pilot to talk to visitors about planes and flight. The program could become a regularly-scheduled event during the summer months. Several pilots could contribute to a “fly-in” as a special program demonstrating different types of airplanes.

Expand community outreach

Local support for Wright Brothers NMEM has been strong since its founding, but new residents are moving in who do not feel the same personal connection to the Wright brothers’ story that original residents do. Special programs for community members will reinforce those connections. These include:

- Continue special events with local appeal; aviation stories and themes to which visitors and residents have a personal connection.
- Offer speakers to present programs to community

organizations.

- Enhance community service and volunteer opportunities on site.
- Develop a weekend day-camp for the children of local residents.
- Provide a one-day (or longer) Wright Brothers NMEM day camp session for such partners as the YMCA, Girl Scouts, Boy Scouts, and 4-H summer programs for the children of local residents.
- Explore the possibility of expanding the Wright Flight program for 5th graders in local schools.
- Work to assist partners with local community off-site festivals, programming, and special events, etc., that are relevant to Wright Brothers NMEM themes and enhance partnerships and give the park more exposure in the community.
- Examine Arts In Parks program.
- Explore interpretive opportunities with the First Flight Foundation, Discovery of Flight Foundation, and First Flight Society.
- Explore the use of community work groups to develop community-relevant interpretive programming.



Planes on the First Flight Airstrip

EDUCATIONAL SERVICES

The park offers little in the realm of education services. Plans for enhancing educational services include:

- Hire an Education Specialist to focus on development of the park's education programming.
- Develop an educational strategy.
- Continue the Teacher-Ranger-Teacher Program.
- Strengthen partnership with NCCAT and the UNC Coastal Studies Institute.
- Develop offsite offerings.
- Partner with others.

Develop educational strategy

Wright Brothers NMEM needs to build a strategy to develop comprehensive, curriculum-based and grade-appropriate educational programming for local schools and visiting education groups, as well as devise a systematic, trackable way to distribute these curriculum materials to teachers. This strategy could include hiring an Educational Specialist, using volunteers, temporary seasonal employees, Teacher-Ranger-Teachers, or exploring other avenues. NPS staff's first priority should be to work with a local educator taskforce, including partner organizations, to identify and prioritize appropriate units within the North Carolina Standard Course of Study for relevant grade levels so as to provide a comprehensive educational offering by the park and partner organizations. Once the appropriate curriculum units

are identified and prioritized, the taskforce should develop concise and relevant curriculum packets in support of targeted units and focus on creating relevancy. These materials, most likely focused in the beginning on 4th and 8th grade levels, would be available via the park's website, include pre- and post-visit content, and explore use of interactive media such as webcasts.

Continue Teacher-Ranger-Teacher Program

The park should continue the successful Teacher-Ranger-Teacher program, focusing initially on Hyde and Dare County Schools.

Strengthen partnership with NCCAT, the UNC Coastal Studies Institute, Discovery of Flight Foundation, and others

The park should explore the possibility of developing a more strategic relationship with NCCAT that would emphasize the use of Wright Brothers NMEM in teaching. The park should initiate discussion with NCCAT to develop a science-based session involving the park and a session on national parks of North Carolina. The park should also look to work closely with the UNC Coastal Studies Institute to bring college students to the park to work as interns on various park projects. The park should work with the Discovery

of Flight Foundation to develop an Academy of Model Aeronautics program that links the Wright history, the park, and schools via standards-based curriculum.

Develop off-site offerings

The park should create curriculum-based interpretive/education media in various media formats for off-site use by distant school districts. The “traveling trunk” methodology would be an excellent tool to deliver these interpretive/education media messages/ components to off-site student groups.

Partner with others

Work with Dayton Aviation National Historical Park, the Outer Banks History Center and other partners with significant Wright brothers’ resources to create a shared set of curriculum materials based on aviation. Make it a priority to work with others, such as the Discovery of Flight Foundation, to bring STEM (Science, Technology, Engineering and Math) programs to the park under the auspices of the National Science Foundation. Partner with Dayton Aviation Heritage National Historical Park to share interpretive programs via the parks’ websites. Other potential education partners include alternative spring break groups, Cooperative Education Studies Unit, and the Student Conservation Association.

NON-PERSONAL SERVICES

Interpretive Facilities/ Settings

The park has a number of facilities and settings where interpretation is offered. Plans for improvements in park interpretive facilities are underway via the drafting of a partnership/fundraising agreement with the First Flight Foundation.

Short-Term (1-2 years)/ Mid-Term (3-4 years)

Continue to maintain and interpret with existing facilities

- Short-term plans for the development of interpretive programming will focus on planning for media.
- Explore opportunities for very much needed temporary office space for administrative use, including offices, storage, conference/meeting room, staff lunch room, staff restrooms and a library.

Long-Term (5-7 years)

Need for new interpretive space

Eventually the site will need additional interpretive space.

The pavilion is past its prime, and staff is working out of a small windowless trailer. The First Flight Foundation has expressed interest in raising funds for a new visitor center. Regardless of what kind of space eventually becomes available, the following needs have been identified:

- Flexible, efficient and modular space that accommodates changing exhibits, special events/programs, etc. The space should be multipurpose so that programs and other activities could occur simultaneously without disrupting each other.
- Administrative space, including:
 - Offices
 - Storage
 - Conference/meeting room that would double as a special project room.
 - Staff lunch room (break room)
 - Staff restrooms
 - Library (research materials currently housed at the Outer Banks History Center for greater public accessibility)
- A stage or theatre for movies, films or lectures
- Aircraft display
- Permanent exhibits
- Classroom/multipurpose area
- Flexible, accessible IT data lines/infrastructure
- Large space for programs like flying paper airplanes
- Parking.

Exhibits

The development of new exhibits at Wright Brothers NMEM is somewhat constrained by circumstances, in that long-range development concepts call for construction of an annex to the current visitor center. Detailed exhibit planning will need to

wait until these development plans are more firmly in place. In the meantime, the pavilion can serve as a venue for new exhibits. Such exhibits should be modular, so that they can potentially be transferred to new spaces in the future.

All new exhibits should be developed using both front-end and formative evaluation to create content.

Short-Term (1-2 years)

- Work with Discovery of Flight Foundation so that they can successfully complete the fundraising that will allow them to donate The Wright Experience: Six Challenges to Flight exhibit to the park. This exhibit best tells the story of the Wrights' achievements far beyond that of any other exhibit in the park. The completed fundraising will also allow for the continued use of the park's only interactive exhibit. Additionally, the interactive media technology in this exhibit can be continually updated, which provides great opportunity to incorporate media technology changes and new information, allowing the exhibit to keep pace with the expectations of today's (and tomorrow's) visitors.
- The only mechanism by which park visitors receive a thorough site orientation is through park staff at the

information desk. This is not effective during summer months, as the number of visitors far outweighs the staffing available. It is recommended that the park develop site orientation panels for the visitor center lobby so that more visitors are provided necessary orientation information.

- The "Global Impact" theme is presently under-interpreted. Create a series of panels in the visitor center lobby that interpret the global impact of aviation since 1903, including how aviation serves a prominent role in current social/science issues/ research, such as sea level rise and climate change.
- Ensure that organizations with exhibits on loan to the park in the pavilion (First Flight Society, Discovery of Flight, NASA, etc.) maintain these exhibits in good condition.
- Provided needed repair to temporary exhibits in the pavilion that are owned by the NPS.
- Utilize an onsite weather station to compare and contrast each day's weather conditions with those of the corresponding date in 1903.

Mid-Term (3-4 years)

- Explore the possibility of offering some form of interactive flight simulation to visitors. A wholly physical experience, like

that occasionally offered by the Discovery of Flight Foundation. A virtual experience, while more expensive to develop, may be more cost effective in the long run.

- Explore partner opportunities with organizations that are interested and able to provide interpretive media for the park and input on keeping park exhibits relevant to visitors. The Discovery of Flight Foundation would be a valued partner in this area.

Long-Term (5-7 years)

- Re-evaluate exhibit program in light of plans for visitor center annex, and the condition of the pavilion.

Audiovisual/Electronic Media

Changing demographics and the need to provide a wide range of interpretive modalities make development of an Audiovisual/Electronic Media Plan a high priority at the Memorial. Concepts of this plan should be developed in such a way that they could be integrated into any future exhibits. The steps include:

- Hire a Media/Visual Information Specialist (Outer Banks Group-wide need).
- Develop park-wide Audiovisual/Electronic Media Plan.
- Begin implementation.
- Complete implementation of Media Plan.

Short-Term (1-2 years)

Develop park-wide Audiovisual/Electronic Media Plan

A park-wide Audiovisual/Electronic Media Plan will enable the park to make the most efficient and effective use of audiovisual/electronic media throughout its interpretive program, while highlighting the national significance of all park themes. The following possibilities should be addressed:

- Hire Media/Visual Information Specialist that would work toward development and implementation of the plan.
- Media choices should include web-based interpretation, mobile media like smart phones and tablet computers, and smart boards.
- Emphasis should be on flexible media that can be delivered via multiple platforms.
- Develop all media presentations with strategic consideration of future visitor usage; i.e., the trend toward self-accessed media on a variety of platforms, including downloadable audio-only formats, video outlets such as YouTube, etc. With planning and coordination, the park can maximize its media impact and applicability on multiple platforms while holding development time and production expenses to a minimum.
- Assess the balance/suitability of different topics for media

treatments. Some topics will be best as self-contained programs, and others may be better integrated as part of exhibits.

- All media should be developed using both front-end and formative evaluation to create content.
- Utilize appropriate accessibility standards such as bilingual options and closed-captioning.
- Look to adapt the Discovery of Flight touchscreen kiosk material to web technology and apply The Wright Experience media technology in other exhibits within the park and for potential development of a traveling exhibit to schools.
- Use voice recordings of stories to help connect park visitors, i.e. Wright Family members, French partners from Le Mans to tell the European story, the Air Force to describe the importance of growth of military flying, etc.

**Mid-Term (3-4 years)
Begin implementation of
parkwide Audiovisual/Electronic
Media Plan**

Re-examine the Audiovisual/Electronic Media Plan to take advantage of new/additional technology, such as GPS-mapping-based applications. Media elements under consideration for development in the mid-term include:

- Orientation film that addresses

all park themes. Potential platforms for presenting the film include a theatre, interactive kiosks, YouTube, etc.

- Fee-based evening program offering classic films with flight themes.
- Webcam positioned at the top of the Memorial, linked to both the visitor center or pavilion, and the park website.
- Touch-screen interactive that interprets the influence of family members on the Wright brothers through images, correspondence, diaries, etc. Include a way for visitors to record the influence of family on their own lives (visitor-contributed content).

**Long-Term (5-7 years)
Complete implementation of
parkwide Audiovisual/Electronic
Media Plan**

Re-examine the Audiovisual/Electronic Media Plan to take advantage of new/additional technology. Media elements under consideration for development in the long-term include:

- Virtual flight simulator: perhaps an enclosed virtual environment that models and/or simulates a period flight experience, a 3-D film, or some other medium.
- Partnership with Dayton Aviation Heritage National Historical Park to create a “Virtual Dayton” touch-screen interactive that interprets influences on the Wright

brothers in dynamic turn-of-the century Dayton and that also “toggles” to interpret the contrast – and advantages – offered by the isolated Kitty Hawk environment. The unit could also include a virtual “Wright Brothers Bike Shop.”

- Create a touch-screen interactive that allows user to make choices and test assumptions about elements of flight, in order to offer a deeper level of in-depth information for those who desire it. For example, test different strut profiles for wind resistance, attempt to adjust aspect ratio, etc. – a virtual environment for experimentation regarding flight.

Self-Guided Interpretation

Visitors in the 21st century are increasingly interested in self-guided or self-accessed interpretive materials. Given the rapidity of change in communications technology, it is impossible to predict which type of technology will be most appropriate in future years.

However, the fundamental components of audio, visuals, text, and mapping will remain, regardless of which devices visitors use to access them.

Whenever possible, self-accessed interpretive media should be planned for availability across multiple platforms, including

cyber-accessible media (cell phone audio, podcasts, GPS maps, downloadable text files), hard-copy printed materials (numbered maps/site guides), landscape features (color-coded trails, numbered sites), and wayside exhibits. Utilize language translations or audio translations for non-English users or visually impaired visitors.

Park Website/Social Media

For many visitors, a park’s website is their first encounter with the site. A strong website is an increasingly critical interpretive tool for the park. Having a Media/Visual Information specialist to spearhead this effort will be important. General guidelines for website development include:

- Increase the park’s social media outreach (Twitter, Facebook, Flickr, etc.).
- Make all existing self-guided tour material (unigrid brochure, site bulletins, audio programs, etc.) available on the web for downloading including download to personal electronic devices.
- Include new curriculum materials for download when available.
- Add links to other appropriate websites, including partners, groups of local interest, and local tourism organizations.
- Provide appropriate language translations and audio translations of online information.
- All media should be developed using both front-end and

formative evaluation to create content.

- Media should address changing social issues in order to keep the park relevant to society.

Short-Term (1-2 years)

- Use Media/Visual Information Specialist position as coordinator of development of web-based interpretation.
- Add print materials, including downloadable documents to personal media.
- Add access to collection information: photographs (low and high resolution); limited data; research publications.
- Add Podcasts (e.g., ranger talks) to download or watch on line. Link to YouTube videos produced by Wright Brothers NMEM.
- Include Flash-based products: interactive “games,” animation, etc., including a virtual tour of the site, monument, etc.
- Provide links to aviation organizations and interpretive partners.
- Develop suggested itineraries for visitors to the Outer Banks that include partner sites, developed in partnership with and with links to the Outer Banks Visitor Bureau.
- Add natural resource information (protected species, wetlands, etc) to the park’s website.

Mid-Term (3-4 years)

- Partner with Dayton Aviation Heritage National Historical Park (and possibly Wright State University), National Air and Space Museum, Library of Congress, and Discovery of Flight Foundation to create a Wright brothers interpretive website that would combine related resources.
- Provide link to live webcam positioned at the top of the Memorial.
- Encourage NPS to create an Aviation Heritage Program, similar to existing Civil War, Maritime, and Underground Railroad initiatives, under which all aviation-related sites in the NPS would share a NPS-sponsored website.
- Partner with the Outer Banks History Center and the Visitors Bureau to create an interactive map showing change over time in Kitty Hawk, especially addressing development that occurred as a result of the creation of the Wright Brothers NMEM.

Long-Term (5-7 years)

With the help of the Media/Visual Information Specialist, consider developing the following web-based interpretive features/resources:

- For education audiences:
 - Live video conferencing
 - Downloadable curriculum materials

- Multilingual translations of web-based interpretive material
- Partner with Coastal Studies Institute to encourage student-launched web-based interpretation.
- Make digital interpretive products available via iTunes store.
- Immersion camera virtual tour of Monument exterior and interior (including for visitors with physical disabilities).
- Simulations/demos: e.g., how airplane worked, possibly using Discovery of Flight Foundation material.
- Historical footage of Wright brothers, early flight, historical Kitty Hawk, etc. Discovery of Flight Foundation has abundant materials already developed.
- Imagery indicating change over time.
- Imagery depicting the park in different seasons of the year.

Wayside Exhibits

The existing waysides near the Flight Path are extremely effective. A few judiciously planned additional wayside exhibits would enhance the visitor experience, but care must be taken not to intrude upon the site's designated historic landscape. All wayside exhibits should be developed using both front-end and formative evaluation to create content.

Short-Term (1-2 years)

Develop park-wide Wayside Plan

Additional waysides to be considered include:

- Located near the Monument, wayside exhibits addressing commemoration, global impact, and the changing landscape.
- Located on the path to the Monument, a wayside exhibit interpreting the small Power House that indicates the lack of electrical power on the Outer Banks when the Monument was constructed in the 1930s, and the changes to the Outer Banks that were initiated as a result.

Mid-Term (3-4 years)

- Develop, design and install new wayside exhibits.



Effective wayside exhibits with historic photographs

Publications

Unigrid Brochure

The park's unigrid brochure was redesigned in 2009. The brochure should be reviewed on a yearly basis and updated as needed.

Park Newspaper

Continue the production of the 16-page, four-color *In The Park* newspaper serving the three park units of the Outer Banks Group. Continue coverage of partner park-based projects and efforts.

Park Handbook

The park handbook, shared with Dayton Aviation Heritage National Historical Park, effectively tells the full story of the Wrights brothers' invention, and bridges the events that took place at each of the sites. It is an example of shared interpretive services that could well be expanded to other media, including film and a joint website.

Site Bulletins

Note that all site bulletins will be offered in print as well as digitally on the park website. They should be provided in additional languages as appropriate. Specific bulletins to be developed include:

- Site bulletin addressing the changes to Kitty Hawk since the Wright brothers' invention.
- Site bulletin on the park's natural resources, including the changing landscape, dune preservation, rare

plants such as woolly beach heather, Virginia pinweed, and toothache tree, a list of park fauna, including the rare swallowtail butterfly, and interpretation of integrated management strategies for natural and cultural resources in an historically significant park.

PARTNERSHIPS

Wright Brothers NMEM enjoys a large number of productive partnerships. Primary partners have formal relationships, while others are less formal. (See page 56 for a complete list of park partners.)

Partnership development could include:

Eastern National

In the future, Eastern National may be able to provide support to compensate for staff reductions at the park, as well as developing more custom products for sale to visitors.

First Flight Society

Work with the Society to finalize a new partnership agreement and continue Society sponsorship of the December 17 anniversary event. Agreement needs to include the continued maintenance of the First Flight Shrine and the Society's pavilion exhibit.

First Flight Foundation

Complete the partnership agreement with the Foundation towards raising funds and constructing an annex to the visitor center and exhibits for the visitor center and annex. Provide interpretive support as needed for Foundation-sponsored special events at the park site. The Foundation's role may grow extensively as the relationship moves forward and encompass

such areas as infrastructure needs, interpretive programming, training, exhibit development, etc.

Discovery of Flight Foundation

Continue to invite the Discovery of Flight Foundation to assist in park events. Continue to work with the Foundation in completion of their cooperative fundraising agreement. Look for ways to partner with the Foundation on educational programming, media presentations, flight simulation, and exhibit development.

Outer Banks Visitor Bureau

The park should continue working with the Outer Banks Visitors Bureau in providing orientation for tourism previsits and look towards working with the Visitors Bureau to incorporate park-specific questions into their surveys.

UNC Coastal Studies Institute

It is recommended that Wright Brothers NMEM consider partnering with the Institute for projects that would create opportunities for students to work with and create interpretive technologies.

COLLECTION AND ARCHIVES NEEDS

The Museum Resource Center of the Outer Banks Group stores park archives. Stored artifacts will soon be on the NPS archival database and more widely available. The collection is being photographed for inclusion on a central NPS website.

Archive staff is scanning original materials, but there remains a need to digitize some resource research.

RESEARCH NEEDS

The Wright brothers and their inventions have been well studied and documented. Vast numbers of resources exist on every aspect of their careers. Research needs that would serve development of interpretive services at Wright Brothers NMEM include:

- Locating period maps of the Kitty Hawk/Kill Devil Hills era from the time of the Wright brothers.
- Locating written descriptions of Kitty Hawk/Kill Devil Hills during the Wright brothers' time.
- Natural resource research.

STAFFING NEEDS

This LRIP recommends increasing the interpretive staff at the Wright Brothers NMEM. Increased staff will help to accommodate increases in visitation, offer 21st-century media and learning materials, and deliver the programming future visitors will expect from a National Park Service site.

The following staff additions are recommended:

Position	Grade	Status
Group Volunteer-in-Parks (VIP) Coordinator	(GS-07)	PSTF
Group Media/Visual Information Specialist	(GS-09/11)	PSTF
District Interpreter (Supervisory Park Ranger for Wright Brothers NMEM and Fort Raleigh NHS)	(GS-11)	FTP
Park Ranger	(GS-09)	FTP
Park Ranger	(GS-09)	FTP
Education Specialist	(GS-09)	PTSF
Summer seasonal Park Rangers	(GS-05)	April 1-Columbus Day
Teacher-Ranger-Teachers		Mid-May-mid-August

IMPLEMENTATION PLAN

The measure of success of any plan is the extent to which it is implemented. Initial implementation strategies need to be both realistic and flexible. The implementation plan outlined on the following pages is an initial blueprint for change. Because staffing, funding opportunities, and priorities often change, park managers need to adjust the implementation strategies to adapt to changing conditions. Therefore, this Implementation Plan should be updated annually as Part 6 (Status of Implementation Plan) within the park's Annual Implementation Plan. Over the next 5-7 years, employees in the positions listed below should form an implementation team to guide the accomplishment of this LRIP's Implementation tasks as outlined below:

Title	Location
Superintendent, Outer Banks Group	Headquarters: Manteo, NC
Deputy Superintendent Outer Banks Group	Headquarters: Manteo, NC
Chief of Interpretation Outer Banks Group	Headquarters: Manteo, NC
District Interpreter Wright Brothers NMEM/Fort Raleigh NHS	Wright Brothers NMEM
Media/Visual Information Specialist (proposed)	Headquarters: Manteo, NC
Education Specialist (proposed) Wright Brothers NMEM	Wright Brothers NMEM
Park Ranger (Interpretation)	Wright Brothers NMEM
Park Ranger (Interpretation) (proposed)	Wright Brothers NMEM
Park Ranger (Interpretation) (proposed)	Wright Brothers NMEM
Volunteer Coordinator (proposed) Outer Banks Group	Headquarters: Manteo, NC
Chief of Interpretation Southeast Region	Southeast Regional Office, Atlanta, GA

The NPS employees filling the above-listed positions should confer annually to adjust the funding strategies and task assignments to ensure the implementation of this LRIP.

Task	Fund Source	Short-term (1-2 years)	Mid-term (3-4 years)	Long-term (5-7 years)
PERSONAL SERVICES				
Focus interpreter-led programming Continue effective programs; develop new programs, including evening <i>District Interpreter, Park Range, Volunteer Coordinator</i>	ONPS/ Donations/ Partner (First Flight Foundation)	XX	XX	XX
Enhance training New technology, volunteer management, volunteer training <i>Chief of Interpretation, District Interpreter, Volunteer Coordinator</i>	ONPS/ Donations/ Volunteer/ Partner (First Flight Foundation)	XX	XX	XX
Re-evaluate presentation of special events <i>Deputy Superintendent, Chief of Interpretation, District Interpreter, Volunteer Coordinator</i>	ONPS	XX		
Develop “Pilot in Residence” program <i>District Interpreter, Park Ranger, Volunteer Coordinator</i>	Volunteer/ Partner	XX	XX	XX
Expand community outreach <i>Chief of Interpretation, District Interpreter, Volunteer Coordinator</i>	ONPS/ Donations	XX	XX	XX
EDUCATIONAL SERVICES				
Develop educational strategy <i>Chief of Interpretation, Education Specialist, District Interpreter</i>	ONPS/Fee/ Donations/ Parks as Classrooms/ Partner		XX	
Continue Teacher-Ranger-Teacher Program <i>Education Specialist, District Interpreter, Park Ranger</i>	ONPS/Fee/ Donations	XX	XX	XX
Strengthen partnership with NCCAT <i>Chief of Interpretation, Education Specialist</i>	ONPS/ Donations		XX	XX
Develop off-site offerings <i>District Interpreter, Education Specialist</i>	ONPS/ Donations		XX	XX
Partner with others <i>Chief of Interpretation, District Interpreter, Education Specialist</i>	ONPS/ Challenge Cost Share/ Partner			XX
NON-PERSONAL SERVICES				
Facilities				
Continue to maintain and interpret from existing facilities <i>Chief of Interpretation, District Interpreter, Park Ranger,</i>	ONPS/Partner	XX	XX	XX
Need for new administrative and interpretive space <i>Deputy Superintendent, Chief of Interpretation, Chief of Maintenance</i>	Donations/ Partner	XX	XX	XX

Task	Fund Source	Short-term (1-2 years)	Mid-term (3-4 years)	Long-term (5-7 years)
NON-PERSONAL SERVICES				
Facilities				
Continue to maintain and interpret from existing facilities <i>Chief of Interpretation, District Interpreter, Park Ranger,</i>	ONPS/Partner	XX	XX	XX
Need for new administrative and interpretive space <i>Deputy Superintendent, Chief of Interpretation, Chief of Maintenance</i>	Donations/ Partner	XX	XX	XX
Media-based Services				
Develop park-wide Media Plan <i>Chief of Interpretation, District Interpreter, Media Specialist, Park Ranger</i>	Project/ Donations	XX		
Begin implementation of parkwide Media Plan <i>Chief of Interpretation, District Interpreter, Media/ Visual Information Specialist, Park Ranger</i>	Project/ Donations		XX	
Complete implementation of parkwide Media Plan <i>Chief of Interpretation, District Interpreter, Media/ Visual Information Specialist, Park Ranger</i>	Project/ Donations			XX
Exhibits				
Create new exhibits <i>Weather station, global impact panels in VC, District Interpreter, Media/Visual Information Specialist, Park Ranger</i>	Project/ Donations/ Partner	XX		
Create flight simulator <i>District Interpreter, Media/Visual Information Specialist, Park Ranger</i>	Project/ Donations/ Partner		XX	
Re-evaluate exhibit program in light of VC plans and pavilion condition <i>Deputy Superintendent, Chief of Interpretation, Chief of Maintenance</i>	ONPS			XX
Publications				
Unigrid Brochure <i>District Interpreter, Media/Visual Information Specialist, Park Ranger</i>	Project	XX	XX	XX
Park Newspaper <i>Chief of Interpretation, District Interpreter, Park Ranger, Media/Visual Information Specialist</i>	Project/ Donations	XX	XX	XX
Site Bulletins Create new bulletins on changes to Kitty Hawk and park natural resources <i>District Interpreter, Media/Visual Information Specialist, Park Ranger</i>	Donations	XX	XX	

Task	Fund Source	Short-term (1-2 years)	Mid-term (3-4 years)	Long-term (5-7 years)
Website				
Hire media specialist <i>Deputy Superintendent, Chief of Interpretation</i>	ONPS/ Donations	XX		
Short-term website upgrades Print materials, collection information, links, itineraries <i>Media/Visual Information Specialist</i>		XX		
Mid-term website upgrades Joint website with DAAV, live cam link, NPS Aviation Heritage Program, heritage partnerships <i>Deputy Superintendent, Chief of Interpretation, District Interpreter, Media/Visual Information Specialist</i>	Project/ Donations		XX	
Long-term website upgrades Podcasts, flash-based products, educator support, student-created content, social media, images & footage, etc. <i>Chief of Interpretation, District Interpreter, Media/Visual Information Specialist</i>	Project/ Donations			XX
Wayside Exhibits				
Develop park-wide Wayside Plan <i>Deputy Superintendent/Chief of Interpretation, District Interpreter, Media/Visual Information Specialist Park Ranger</i>	Project/ Donations/ Partner	XX		
Plan and design wayside exhibits <i>Chief of Interpretation, District Interpreter, Media/Visual Information Specialist, Park Ranger</i>	Project/ Donations/ Partner		XX	

APPENDIX A: PLANNING TEAM

National Park Service

Outer Banks Group

Rob Bolling	Park Ranger (Interpretation), Fort Raleigh NHS
Meghan Carfoli	Natural Resource Manager, Outer Banks Group
Darrell Collins	Park Ranger (Interpretation), Wright Brothers NMEM
Fent David	Park Ranger (Interpretation), (Retired), Wright Brothers NMEM
Mary Doll	Chief of Interpretation, Outer Banks Group
Darrell Echols	Deputy Superintendent
Jason Ginter	Park Ranger (Interpretation), Cape Hatteras NS
Pat Ludwick	Revenue and Fee Business Manager
Doug Stover	Cultural Resource Management Specialist
Sara Strickland	Natural Resource Management Specialist
Chris Wonderly	Seasonal Interpretive Ranger

DAAV

Dean Alexander	Superintendent, Dayton Aviation Heritage National Historical Park
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Harpers Ferry Center

Rick Jones	Contracting Officer's Representative
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Southeast Region

Don Wollenhaupt	Chief, Interpretation and Education
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Park Partners

Steve Basnight	Superintendent, Dare County Schools
Tom Crouch	National Air and Space Museum, Smithsonian Institution
Paul Glenshaw	Discovery of Flight Foundation
Ed Grillo	Discovery of Flight Foundation consultant
Rulaine Kegerris	Eastern National (NPS Cooperative Association)
Amanda Wright Lane	Wright family member
Lorrie Love	Outer Banks Visitors Bureau
Lisa Loy	First Flight Foundation
Lee Nettles	Outer Banks Visitors Bureau
Geneva Perry	First Flight Society
Jerry Raveling	Wright Brothers NMEM Volunteer
Kaeli Spears	Outer Banks History Center
David Sybert	UNC Coastal Studies Institute
Rick Young	First Flight Foundation

Consultant Team

Ann Clausen	Interpretive Solutions, Inc.
Peter Dajevskis	Interpretive Solutions, Inc.
Vid Mednis	Interpretive Solutions, Inc.

APPENDIX B: ASSOCIATED LEGISLATION

Act of March 2, 1927

The Kill Devil Hill Monument and legislative foundation for the park are established:

“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 . . .”

Executive Order 6166, June 10, 1933 (clarified in Executive Order 6228, July 28, 1933)

The administrative responsibility for the site is transferred from the War Department to the National Park Service.

Public Law 83-31, May 22, 1953

December 17, 1952 to December 17, 1953 is designated as the 50th anniversary year of controlled powered flight.

Act of June 23, 1953

Additional lands are added to the park.

Secretarial Order of December 1, 1953

The area is redesignated as Wright Brothers National Memorial.

Public Law 88-209, December 17, 1963 (clarified in the Act of January 27, 1998)

Designated December 17th each year as “Wright Brothers Day”.

50 States Commemorative Coin Program Act, January 7, 1997

Provides for the First Flight Commemorative Coin.

Centennial of Flight Commemoration Act, January 27, 1998

Establishes the First Flight Centennial Commission.

Appendix C, Dayton Aviation Heritage National Historical Park: Interpretive Themes

Because the complete Wright brothers' story weaves together the interpretive themes of Wright Brothers NMEM and Dayton Aviation Heritage National Historical Park, the Dayton Aviation theme statements are presented here as a complement to those of the Memorial.

Theme 1. The Wright brothers' invention of powered flight fundamentally affected the evolution of world civilization.

- The creation of practical air transportation changed our perceptions of space and time.
- It facilitated trade and communication and led to the creation of new industries.
- Aviation revolutionized society, culture, and warfare in the 20th century.

Theme 2. Wilbur and Orville Wright's willingness to question accepted scientific data and their confidence to act upon their own data enabled them to succeed.

- The brothers applied a rigorous scientific method to the problem of creating a practical powered airplane.
- Their pioneering wind tunnel research corrected errors in aeronautical engineering concepts and data that previously were accepted as the conventional wisdom in aviation design.
- Their mastery of engineering, mechanics, mathematics, and writing qualified them to deal with every facet of aircraft development, design, and construction.

Theme 3. The Wright brothers' achievements established Dayton as the birthplace of aviation.

- The world's first successful power-driven airplane – flown at Kitty Hawk, North Carolina on December 17, 1903 – was conceived, researched, designed, and built in Dayton, Ohio, over a four-year time span.
- The Wright Flyer III was built, tested, and modified in Dayton, Ohio, becoming the world's first fully-controllable, practical airplane.
- The Huffman Prairie Flying Field, where humans learned to fly, was the test site for the Wright Flyer III and home of the Wright Company's flying school.
- Wilbur and Orville Wright built the United States' first aircraft factory and the world's first mass-produced airplane – the Wright "B" Flyer – in Dayton.
- Wright-Patterson Airforce Base continues Dayton's rich aviation heritage.

Theme 4. Their extraordinary family provided the foundation for Wilbur and Orville's scientific and technological triumphs.

- The brothers' synergy created a whole that was greater than the sum of the parts.
- The nurturing environment of the Wright family home, including library resources, encouraged Wilbur's and Orville's inquisitiveness, persistence, self-discipline, experiments, and systematic investigations.
- Katherine, the only college graduate in the family, provided emotional backing, encouragement, and logistical support that were essential to her brothers' successes.

Harpers Ferry Center
National Park Service
U.S. Department of the Interior



Wright Brothers National Memorial

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Manteo, North Carolina 27954

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