



Colonial National Historical Park *Alternative Transportation System Evaluation and Business Plan*



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Report Notes and Acknowledgements

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Executive Summary

In 2004 Colonial National Historical Park (NHP) initiated a shuttle service between Historic Jamestowne, Colonial Williamsburg, and Yorktown Battlefield. The service was intended to mitigate automobile congestion and parking overflows expected to accompany large increases in visitation associated with the 225th Celebration of the American Revolution in 2006 and the 400th Anniversary of Jamestown in 2007. The shuttle system achieved its goal during these major events, and visitors continue to benefit from the transportation and interpretation the shuttle system provides today. A recent Volpe Center survey of riders reports high to very high satisfaction with the shuttle system and reports that satisfaction with the shuttle is higher than that of the park itself.

The shuttle contributes toward National Park Service's (NPS's) environmental and management goals, and NPS is interested in continuing the shuttle system. The congressional appropriations initially used to fund the capital, operations, and maintenance costs, approximately \$650,000 per year, are set to run out in September 2010, and NPS is seeking new funding sources and investigating new service models so that it may continue providing the service to its visitors.

Future funding for the shuttle system is uncertain. Due in part to the recent downturn in the economy, park partners and stakeholder organizations are financially constrained and have virtually no funding to contribute to operations and maintenance. Furthermore, stakeholder organizations are unlikely to contribute funding unless Colonial NHP generates funding of its own. Colonial NHP is hesitant to charge additional transportation fees or fares because of concerns around the continuing existence of entrance fees; however, NPS will continue the park fee structure for the near future. Federal, state, and local transit grant programs tend to fund only capital costs or expansions of existing services. Several small state grants provide assistance for past maintenance costs but are not currently available to Colonial NHP due to the contract agreement between it and its shuttle operator.

Despite these financial impediments, potential funding opportunities do exist. The most promising is for Colonial NHP to continue the current system, albeit under a less costly, reduced service concept, until new revenue sources may be found so that the park may leverage its previous investment in time and effort creating the shuttle service in a complex environment of federal and state governments, counties, municipalities, transit providers, and local stakeholders. To continue providing shuttle service as long as possible, a feasible strategy for Colonial NHP is to obtain clarification from congress about whether it can use remaining congressional appropriations beyond fiscal year 2010. During this extended period of time, the park can attempt to increase revenue by following the suggestions above to operate a less costly alternative service concept and stretch the congressional appropriations over an additional season.

Three cost-saving alternative service concepts have been identified by the Volpe Center and vetted with stakeholders. Stakeholders generally agreed the following options are viable possibilities:

- **Shorten the operating season.** This concept provides the least cost reduction but also the least derivation from the current service offered.
- **Shorten the operating season and the daily operating hours.** Decision makers considering this option must decide whether the additional cost savings are worth the cuts in service brought both by shortening the operating season and shortening the hours-per-day of the system.
- **Discontinue the Historic Triangle Shuttle (HTS) routes while continuing the Jamestown Area Shuttle (JAS).** Although significantly paring down service, this concept achieves cost savings of roughly 80 percent, mitigates anticipated increases in parking overflows at Historic Jamestowne Visitor Center, and continues funding operational functions of the shuttle.

If approved to use remaining congressional appropriations in fiscal year 2011, at least one of these options may provide enough funding for the HTS and/or the JAS to run through 2013, which would provide more time for Colonial NHP to seek new sources of funding. It is possible that the funding and operating environments will have improved by this time.

Section 1: Introduction

Colonial National Historical Park (NHP), a unit of the National Park Service (NPS), is located in southeastern Virginia between the James and York Rivers. Colonial NHP encompasses Historic Jamestowne in James City County and the Yorktown Battlefield in York County, Virginia. The park also owns the Colonial Parkway, which connects these two sites. Colonial NHP was founded as Colonial National Monument in 1930; it became a National Historical Park in 1936. The park's goals are to preserve and interpret two Colonial historical sites at Jamestown and Yorktown and connect them with a roadway, now known as the Colonial Parkway.

In 2006, Colonial NHP commemorated the 225th Celebration of the American Revolution and in 2007 the 400th Anniversary of Jamestown, including a visit from the Queen of England. To prepare Colonial NHP for these events and mitigate anticipated automobile congestion and parking overflows, the U.S. Congress established several congressional appropriations for the purchase of transit vehicles to provide transportation within the Historic Triangle Area (Williamsburg, Jamestown, and Yorktown) in 2002. A pilot program was established in 2004 and the service was expanded in 2005.

The shuttle service encompasses three routes: the Yorktown Historic Triangle Shuttle (HTS), the Jamestown HTS, and the Jamestown Area Shuttle (JAS):

- The Yorktown HTS runs from the Colonial Williamsburg Visitor Center to the Yorktown Battlefield and Visitor Center and stops at the Jamestown-Yorktown Foundation's (JYF) Yorktown Victory Center on the way back to Colonial Williamsburg.
- The Jamestown HTS runs from the Colonial Williamsburg Visitor Center to the Historic Jamestowne Visitor Center and stops at the JYF's Jamestown Settlement attraction on the way back to Williamsburg.
- The JAS takes visitors between three Jamestown-focused attractions: the Historic Jamestowne Visitor Center, Colonial NHP's Glasshouse, and JYF's Jamestown Settlement. On days when there is no parking available at the Historic Jamestowne Visitor Center, the park opens satellite parking at the Jamestown Information Station, which is then also served by the JAS.

The shuttle system, largely considered a success by the park, local stakeholders, and visitors, is dependent on federally appropriated funding. The current funding will expire September 30, 2010.

Project overview

When congressional appropriations expire in September 2010, Colonial NHP, its local partners, and federal and state grant programs are not expected to be able to fund and operate the HTS/JAS systems at the current level of service. Thus, the Volpe Center was tasked with the following items:

- To document the existing transportation conditions at Colonial NHP;
- To evaluate the HTS/JAS systems in terms of operations, costs, and traveler demand;
- To document the existing funding situation and investigate alternative scenarios; and
- To document alternative service concepts.

This report is the culmination of the Volpe Center's analysis of the existing Colonial NHP alternative transportation system. Based on this analysis, this report suggests possible strategies to continue running it in the future. The report is designed to provide a basis on which to set goals, develop and evaluate alternatives, and ultimately improve access and mobility at Colonial NHP for all visitors.

Attractions

Attractions at Colonial NHP focus on presenting, interpreting, and tying together the influence of early Colonial developments of Jamestown, Yorktown, and Williamsburg and their impact on developing an independent nation. Colonial NHP’s attractions can be divided into two groups: those focusing on the first permanent settlement in the New World area (Jamestown) and those focusing on the location of the last siege of the American Revolution (Yorktown). Table 1 provides an overview of the attractions in the study area and is organized by operating entity. Colonial Williamsburg Foundation (CWF) was originally endowed by the Rockefeller family to operate Colonial Williamsburg as a living museum. Jamestown-Yorktown Foundation (JYF) is an agency of the Commonwealth of Virginia that operates the Jamestown Settlement and the Yorktown Victory Center, two living-history museums that explore America’s beginnings.

Table 1
Historic Triangle attractions by operating entity

Source: The Volpe Center

Location	National Park Service (NPS)	Colonial Williamsburg Foundation (CWF)	Jamestown-Yorktown Foundation (JYF)
Williamsburg		Colonial Williamsburg Visitor Center Colonial Williamsburg Historic Area	
Jamestown	Historic Jamestowne Visitor Center The Natalie P. and Alan M Voorhees Archaearium New Towne and Old Towne Archeological area Glasshouse Jamestown Island Loop Drive Jamestown Information Station		Jamestown Settlement Museum
Yorktown	Yorktown Battlefield Visitor Center Yorktown Battlefield Yorktown Tour Roads Yorktown Village		Yorktown Victory Center Museum
Connecting	Colonial Parkway		

Jamestown area attractions

Jamestown, founded in 1607, marked the beginning of English colonization in the New World. As the first successful English colonial settlement within U.S. territory, the settlement provided the foundations for the establishment and expansion of colonial property. Colonial NHP attractions in the area include:

- **Historic Jamestowne Visitor Center:** Located on Jamestown Island, The Historic Jamestowne Visitor Center provides visitors access to the Old Towne and New Towne archeological sites. The former refers to the area of the triangular fort constructed by English settlers in the spring of 1607. This site includes excavated structures, wells, and burials. Over a million and a half artifacts have been excavated from the site. The latter, established in the 1620s, is located to the east of the 1607 fort and includes excavated wharves, warehouses, and dwellings that were abandoned when the capitol moved from Jamestown to Williamsburg in 1699. Also located at the site is the Natalie P. and Alan M. Voorhees Archaearium, a museum of archeological discoveries from the Jamestown site run by Preservation Virginia. Jamestown Island is jointly operated by NPS and Preservation Virginia, and the partnership between NPS and Preservation Virginia, in existence since 1940, allows for a mix of public and private funding to be used in the continued development of Historic Jamestowne attractions. The fee to enter any facility at Colonial NHP is \$10 for adults and children 15 and under are free. Admission is good for seven days. Other admission options are presented in Table 4.
- **Glasshouse:** The Glasshouse lies approximately half a mile from the Historic Jamestowne Visitor Center and Archaearium. The site includes the remains of the original Glasshouse kiln, an interpretive loop walking trail, and a reconstructed Glasshouse workshop in which glassblowers demonstrate historical techniques of glass craftsmanship. Glassware created at the Glasshouse is for sale at a gift shop adjacent to the reconstructed workshop.
- **Jamestown Island Loop Drive:** The Loop Drive allows visitors to drive, bike, or walk around Jamestown Island and examine the natural setting of the original Jamestown settlement. Wayside interpretive signs highlight early colonial survival skills along the route.
- **Jamestown Information Station:** The Jamestown Information Station, sometimes referred to as “Neck O’ Land”, is located on the Colonial Parkway a couple of miles from Historic Jamestowne. The Information Station consists of an office building with a small exhibit area and a 150-car parking lot. While vehicle access to this area is currently restricted by a locked entrance gate, the building is currently used as a satellite office for staff of the Captain John Smith Trail. Primarily used as an overflow parking lot, this site is not open unless the main parking lot at Historic Jamestowne Visitor Center is full. In such situations, park staff direct visitors into the Jamestown Information Station parking lot and close off parkway access to the Historic Jamestowne Visitor Center. A shuttle then transports visitors from the Jamestown Information Station to Jamestown. Jamestown Information Station has a loop for shuttles and benches and a shelter for visitors outside the building.
- **JYF’s Jamestown Settlement:** This site offers historical reenactments and building reconstructions of the Jamestown fort period. Operated by the JYF and the Commonwealth of Virginia, Jamestown Settlement is not part of Colonial NHP. However, the site lies along the Colonial Parkway, and many of the visitors to Historic Jamestowne also visit Jamestown Settlement. Adult admission to JYF’s Jamestown Settlement is \$14 and for children six to 12 admission is \$6.50. Admission to this site is also in several packages shown in Table 4.

Yorktown area attractions

The 1781 Revolutionary War siege at Yorktown marked the end of the English colonial era. On October 19, 1781, British general Lord Cornwallis surrendered to American troops led by General Washington and French troops led by Lieutenant General de Rochambeau. Cornwallis’ surrender led the British government to negotiate a peace treaty with the U.S. Colonial NHP attractions in the Yorktown area help visitors view and interpret the site of this major turning point in U.S. history.

- **Yorktown Battlefield Visitor Center:** The Yorktown Battlefield Visitor Center includes interpretive exhibits that showcase the progress of the 1781 siege and the U.S. victory. Ranger guided tours of the battlefield are also available at the Yorktown Battlefield Visitor Center.

- **Yorktown Battlefield:** The Yorktown Battlefield encompasses the site where the U.S. siege of Yorktown took place. Cannons and interpretive displays on the battlefield show visitors how the siege unfolded. Artillery demonstrations showcase the important role of artillery in the siege strategy. Two separate auto tours follow a historic tour road that meanders through the battlefield.
- **Yorktown Village:** Ranger led walking tours explore the village of Yorktown, established in 1691 as a colonial seaport. The tour highlights how the village and its historic buildings were used in the siege. There is no admission to Yorktown Village.
- **JYF’s Yorktown Victory Center:** The Yorktown Victory Center is operated by JYF in collaboration with the Commonwealth of Virginia, and is not part of Colonial NHP. This site offers reconstructions of a Continental Army encampment and interpretive exhibits. Adult admission to JYF’s Yorktown Victory Center is \$9.50 and for children six to twelve admission is \$5.25. Admission to this site is also in several packages shown in Table 4.

Colonial Williamsburg

Colonial Williamsburg is an important part of Virginia’s Historic Triangle, with its famous reconstruction of 17th-century life. The Visitor Center and Historic Area at Colonial Williamsburg draw approximately 700,000 general-admission visitors per year.

- **Colonial Williamsburg Historic Area:** Operated by CWF, the Colonial Williamsburg Historic Area recreates the historical 18th-century community of Williamsburg with reconstructed and original period buildings and historical interpreters in period costume who interact with visitors. Visitors may stroll many of the streets of Colonial Williamsburg without paying admission. To enter the buildings or engage with the living history actors, visitors must pay admission shown in Table 2.

Table 2
Colonial Williamsburg admission, 2009

Source: The Volpe Center

Admission Type	1-day pass	2-day pass	Annual pass
Adult	\$36	\$46	\$58
Children (ages 6 through 17)	\$18	\$23	\$29

- **Colonial Williamsburg Visitor Center:** Colonial Williamsburg Visitor Center is the entry point for visitors to Colonial Williamsburg Historic Area, with the visitor parking lot and ticket facilities at the site as well as picnic areas and shopping. The Visitor Center sells tickets to attractions including Colonial Williamsburg, Colonial NHP, JYF’s Jamestown Settlement, JYF’s Yorktown Victory Center, Busch Gardens, and Water Country USA. Admissions are not required to enter the Colonial Williamsburg Visitor Center itself.

As the hub for Colonial Williamsburg, the Colonial Williamsburg Visitor Center also serves as the starting point for the Historic Area Shuttle (HAS) shuttles and HTS shuttles, which arrive and depart in the rear of the building on the lower level. Signage guides visitors to the shuttles via stairs or elevator, and inside rack cards are available to hand to visitors. Outside at the shuttle terminal, the waiting area is narrow, covered, and contains several benches. The schedule for HTS is near the shuttle stop, but there are no separate signs or waiting areas for Jamestown- versus Yorktown-bound shuttles. HAS shuttles bound to Colonial Williamsburg board in same area. All the shuttles look the same and are differentiated by light-emitting diode (LED) displays on the front and sides displaying their destinations.

The Colonial Williamsburg Visitor Center also staffs CWF employees and volunteers who provide information to visitors. When asked by members of the study team, information provided by several individuals regarding the HTS service varied. One employee suggested avoiding the Yorktown HTS service because there was nothing to see there without a car. Another volunteer heartily endorsed the Yorktown HTS service, suggesting that there was nothing to see at the battlefield that required a car.

Colonial Parkway

Jamestown, Yorktown, and Williamsburg area attractions are connected by the third integral part of Colonial NHP: the Colonial Parkway, a 24-mile National Scenic Byway. Completed in 1957, the Colonial Parkway connects the culturally distinct sites of Jamestown, Williamsburg, and Yorktown while also showcasing the surrounding natural environments. The Parkway allows several million travelers a year to travel between evergreen forests and coastal landscapes, and to transition between sites that encompass the entire British colonial era in the U.S. Trucks are prohibited on the Parkway. Unlike other Colonial NHP attractions, no admissions fee is required to drive on the Colonial Parkway.

Busch Gardens and Watercountry USA

Busch Gardens Williamsburg is a theme park located in James City County, Virginia, about three miles southeast of Williamsburg. The park is themed around the history and culture of old-world Europe. Water Country USA is a water theme park in York County, Virginia, about three miles east of Williamsburg and a few miles north from Busch Gardens, with which it shares clientele. Water Country USA is the mid-Atlantic’s largest water park, and it offers live entertainment, shops and restaurants, and water rides, all of which have a 1950s or 1960s surf theme. Single-day admissions for Busch Gardens are shown in Table 3. Admission to these attractions are included in a package deal in Table 4 and additional packages and ticket options are available online.

Table 3
Single-day Busch Gardens and Watercountry USA admissions, 2009

Source: The Volpe Center

Admission Type	Busch Gardens	Watercountry USA
Adult	\$61.95	\$42.95
Children (ages 3 through 9)	\$51.95	\$32.95

Park fees

Colonial NHP requires visitors to pay per-person entrance fees, which are summarized in Table 4. Entrance fees are collected inside the Historic Jamestowne and Yorktown Battlefield Visitor Centers. Prior to 2007, entrance fees at Historic Jamestown were collected at an external fee booth located just before the Glasshouse parking lot entrance. Anyone that wanted to access the island and Glasshouse was required to pay the park fee. With entrance fees now charged at the Visitor Center, visitors may visit Glasshouse and the Jamestown Island Loop without paying a fee. Park entrance fees are not used to fund shuttle operations at Colonial NHP.

Table 4
Historic Triangle entrance fees by attraction

Source: The Volpe Center

Pass Type	Entrance Fee	Attractions Covered
Colonial NHP 7-day Pass	\$ 10.00 Free Adults Children 15 and under	Historic Jamestowne and Yorktown Battlefield
Colonial NHP 12-month Pass	\$ 40.00 Free Adults Children 15 and under	Good for passholder, accompanying spouse, and parents
America's Historic Triangle Pass	\$ 80.25 \$33.25 Free Adults Children 6 to 17 Children 5 and under	Provides entrance to Colonial Williamsburg Historic Area, Historic Jamestowne, Yorktown Battlefield, JYF's Jamestown Settlement, and JYF's Yorktown Victory Center
Williamsburg Flex Pass	\$ 171.45 \$ 131.95 Free Adults Children 6 to 17 Children 5 and under	Provides entrance to Colonial Williamsburg Historic Area, Historic Jamestowne, Yorktown Battlefield, JYF's Jamestown Settlement, JYF's Yorktown Victory Center, Busch Gardens, and Water Country USA

Visitation

The Historic Jamestowne Visitor Center and the Yorktown Battlefield Visitor Center are open daily from 9:00 a.m. to 5:00 p.m. Park grounds close at sunset. Colonial NHP is open year-round except on Thanksgiving Day, December 25, and January 1. Visitation to the park is estimated in two ways.

Individual counts

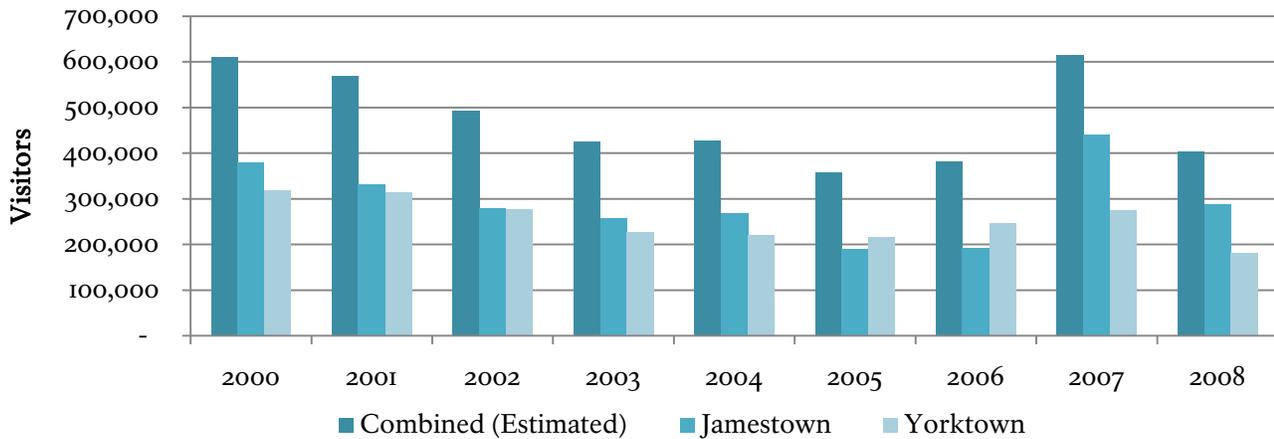
The first method involves counting individuals at the Historic Jamestowne and Yorktown Battlefield Visitor Centers. Figure 3 displays visitor counts from 2000 through 2008. There are two challenges to this method at Colonial NHP. First, because visitors are counted independently at both Yorktown Battlefield Visitor Center and Historic Jamestowne Visitor Center, double-counting is unavoidable. A previous NPS study estimated visitor overlap between the two sites at 23 percent¹, the factor which is used to estimate combined visitation, also shown in Figure 3.² Second, because there are no entrance gates to Yorktown Battlefield, the Glasshouse, or Historic Jamestowne Island, some visitors avoid paying entrance fees and are not counted.

¹ URS Corporation and Cambridge Systematics (March 2004). *Colonial National Historic Park Alternative Transportation System Study Phase Two Final Report*. p 27.

² Explanation of calculations is provided in Appendix A. f

Figure 3
Historic Jamestowne and Yorktown Battlefield visitor estimation using individual counts

Source: NPS and Volpe Center



Several observations aid interpretation of the visitor counts displayed in Figure 3. A period of repairs for Hurricane Isabel damage at Jamestown and Yorktown occurred in 2003. The Historic Jamestowne Visitor Center was under construction in 2005 and 2006 and visitors did not consistently register or purchase tickets. The 2007 visitation numbers exclude visitation for the actual weekend of the 400th Anniversary of Jamestown.

Figure 4 shows monthly visitation for Historic Jamestowne Visitor Center from January 2006 through December 2008. The peak visitation over this three-year period occurred in May 2007 with 76,671 visitors. This peak coincided with the 400th Anniversary of Jamestown events for Historic Jamestowne, which the Queen of England attended. The anniversary commemoration events attracted an extremely large number of visitors to Colonial NHP, a testament to the event's success. However, this level of visitation is unlikely to be repeated in the near future.

Figure 4
Historic Jamestowne visitor estimation using individual counts

Source: NPS and Volpe Center

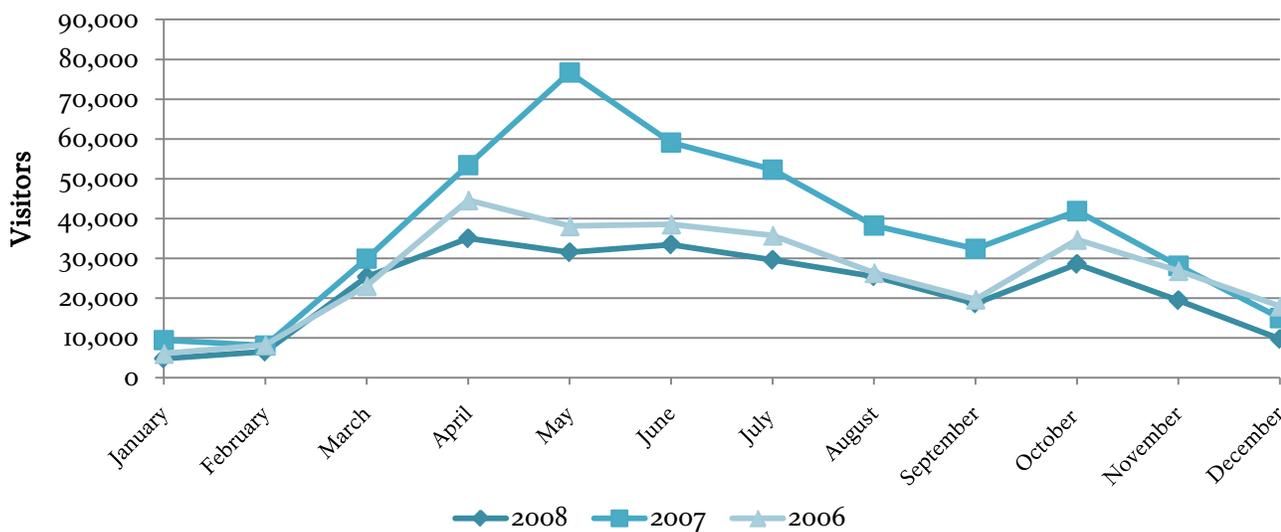
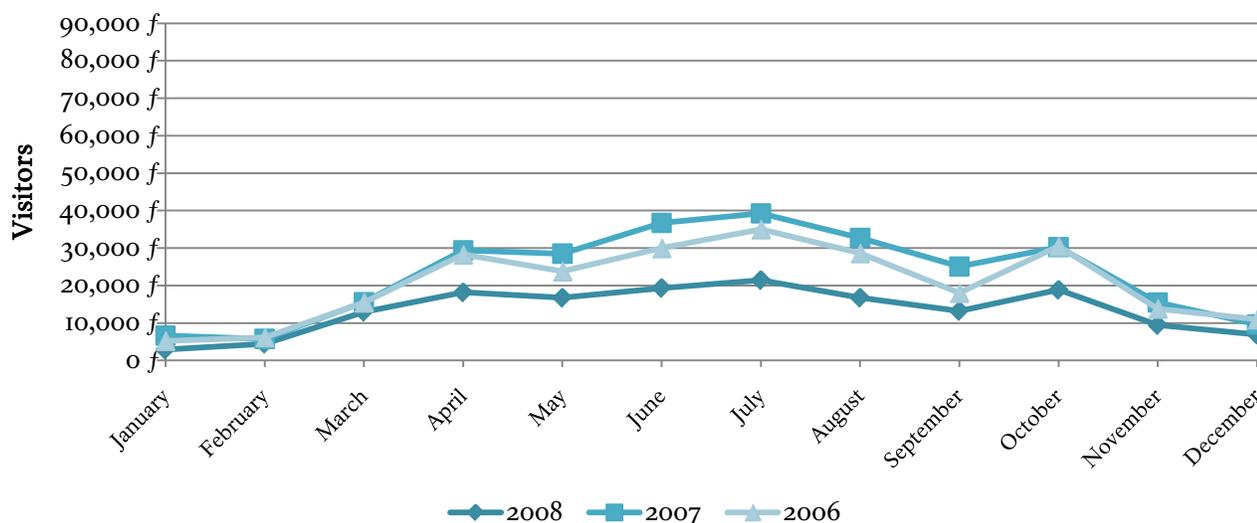


Figure 5 shows monthly visitation for the Yorktown Battlefield Visitor Center from January 2006 through December 2008. Peak visitation over this three-year period occurred in July 2007, due in part to the 400th Anniversary of Jamestown events at Historic Jamestowne. Visitation was also high during the summer of 2006 due to the 225th Celebration of the American Revolution. Again, these visitation numbers were extraordinary, and visitation patterns for the near future are more likely to be similar to those from 2008.

Figure 5
Yorktown Battlefield visitor estimation using individual counts

Source: NPS and Volpe Center



Vehicle counts

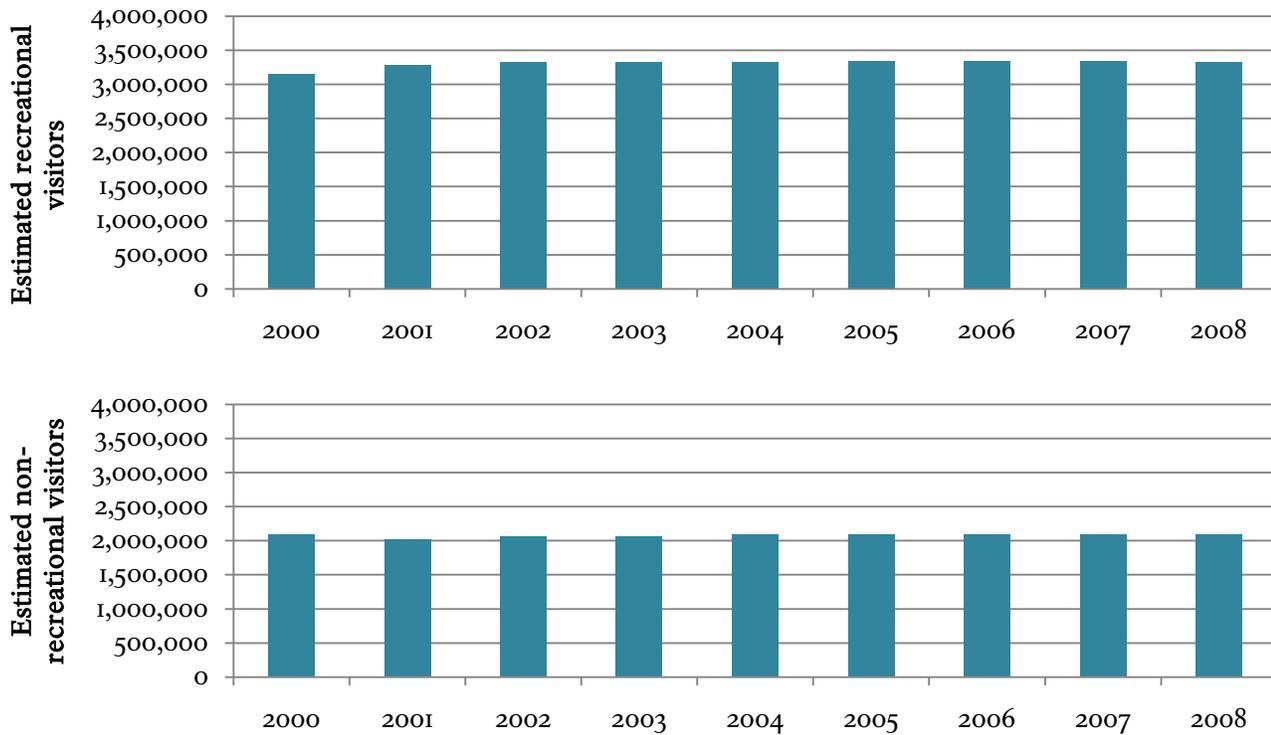
The second visitor estimation technique accounts for the Colonial Parkway component of the park and involves counting cars with automated counters.³ Park estimates, shown in Figure 6, account for both recreational visitors to the park and non-recreational visitors who are traveling through the park to other destinations.⁴ The park estimates assume an average of 2.4 persons per passenger vehicle as well as assumptions regarding tour shuttles and boat visitors.

³ National Park Service (1994). Colonial National Historical Park Public: use counting and reporting instructions. Accessed on August 20th 2009 from <http://www.nature.nps.gov/stats/CountingInstructions/COLOCI1994.pdf>.

⁴ National Park Service Public Use Statistics Office (2009). NPS Reports (COLO). Last accessed on November 3, 2009 from <http://www.nature.nps.gov/stats/park.cfm?parkid=278>.

Figure 6
Visitor estimation using car, tour shuttle, and boat counts

Source: NPS and Volpe Center



Transit systems

The HTS and JAS are the focus of this study, while the Historic Area Shuttle (HAS), the Historic Yorktown Trolley, and Williamsburg Area Transport (WAT) systems are related services. A Yorktown Battlefield Shuttle operated during selected summer weeks from 2005 to 2007. The transit systems are described in general below and are evaluated in detail in the Service Evaluation section of this study.

Historical Triangle Shuttle (HTS)

The HTS is a free service that operates from March through October of each year that seeks to reduce congestion on the Colonial Parkway and reduce parking overflows, particularly at the Historic Jamestowne Visitor Center. The HTS consists of two routes: the Yorktown HTS, 13 miles long, and the Jamestown HTS, 10.2 miles long. Each route operates two shuttle vehicles. Stops along the Jamestown HTS are as follows:

- Colonial Williamsburg Visitor Center;
- Historic Jamestowne Visitor Center;
- Glasshouse;
- JYF's Jamestown Settlement; and
- Jamestown Information Station (if necessary).

Stops along the Yorktown HTS are as follows:

- Colonial Williamsburg Visitor Center;
- Yorktown Battlefield Visitor Center; and
- JYF's Yorktown Victory Center.

Both routes operate at half-hour intervals from 9:00 a.m. to 4:00 p.m., Monday through Sunday, with a final pick-up from the Historic Jamestowne Visitor Center and the Yorktown Battlefield Visitor Center at 5:15 p.m. The HTS does not take visitors to Jamestown or Yorktown at 4:00 p.m., 4:30 p.m., or 5:00 p.m. because the sites take longer to see than the time before the last shuttles return to the Colonial Williamsburg Visitor Center.

Jamestown Area Shuttle (JAS)

The JAS also operates from March through October and connects sites in Jamestown including the following:

- Historic Jamestowne Visitor Center;
- Glasshouse;
- JYF's Jamestown Settlement; and
- Jamestown Information Station (if necessary).

The entire loop is about 3 miles long roundtrip and about 5 miles if stopping at Jamestown Information Station. The JAS operates daily, 9:00 a.m. to 5:00 p.m., with stops approximately every 20 minutes at each of the four sites.

Historic Area Shuttle (HAS)

Also operated by CWF but not associated with Colonial NHP is the HAS. The HAS provides transport among various sites within the Colonial Williamsburg historic area. Thirteen shuttles serve Colonial Williamsburg. The service runs each day throughout the year from 9:00 a.m. to 10:00 p.m.

Historic Yorktown Trolley

The Historic Yorktown Trolley provides service to the Yorktown Battlefield Visitor Center, JYF's Yorktown Victory Center, Yorktown's Riverwalk Landing (a pedestrian-friendly development of shops and eateries located in Yorktown along the York River), and other points of interest within the village. The trolley loops every 20-25 minutes from 10:00 a.m. to 6:00 p.m. daily from March 16 to November 1.

Williamsburg Area Transport (WAT)

WAT is operated by Williamsburg Area Transit Authority (WATA), a regional authority providing transit service to James City County, the City of Williamsburg, and the Bruton District of York County. WAT provides transport to the College of William and Mary in Williamsburg under contract and provides transportation for support labor and foreign students working at the tourist sites. Rides on WAT shuttles cost \$1 per ride, \$0.50 for persons with disabilities, and \$2 for a seven day pass. College of William and Mary students ride for free.

In the case that HTS and JAS cannot be funded, WAT is considering adding transit service to Jamestown. A consultant is currently investigating potential routes via Routes 5 and 31 that would include Jamestown. The potential new route would make only a few trips each day but would operate year round. Currently, this route is not funded, but it could secure funding in the future.

WAT previously offered Relax and Ride, a summer service that provided transit service to people in hotel and time share condominiums to attractions such as Colonial Williamsburg and Busch Gardens. This service has since been integrated into normal WAT service.

As part of the Hampton Roads metropolitan area, WAT is currently receiving a portion of the region's congestion management and air quality (CMAQ) federal funding, which expires in 2012.

Yorktown Battlefield Shuttle

NPS ran a shuttle through the Yorktown Battlefield five times a day for ten weeks during the summers of 2005, 2006, and 2007. Dates for the service were:

- **2005:** July 24th – August 14th;
- **2006:** June 10th – September 1st; and
- **2007:** June 1st – September 3rd.

The shuttle route lasted 55 minutes. The service was so popular that a sign-up list was maintained to manage rider demand.

CWF ran the shuttle during 2005. James River Bus Lines took over the service for two years before it was discontinued due to lack of funding. Currently, without a shuttle tour, the most pragmatic way to tour the entire battlefield is in a private automobile.

Automobiles and the Colonial Parkway

Private automobiles are the primary mode of transportation to Colonial NHP attractions via the Colonial Parkway. Begun in the 1930s and completed in 1957, Colonial Parkway is a 23-mile scenic roadway connecting Yorktown, Williamsburg, and Jamestown. The three-lane, earth-toned parkway has no traffic striping and few signs. The Parkway is paved with an aggregate-concrete mix that is unique to the Parkway. The Colonial Parkway has been designated a National Scenic Byway, an All-American Road, and is listed on the National Register of Historic Places.

Colonial Parkway is a limited access highway with broad sweeping curves, set in a landscaped right-of-way with no commercial development. The parkway includes a half-mile tunnel under the historic district of Colonial Williamsburg. Efforts to shield nearby improvements such as the overpass crossings of Interstate 64, the upgrades of State Route 199 and U.S. Route 17, and CSX railroad tracks from the view of the parkway from have been extensive.

Several million travelers a year use the parkway, which is free of trucks and commercial vehicles except passenger-carrying shuttles. Average annual daily traffic (AADT), the average number of cars which drive on a road segment each day, suggests the parkway is most heavily used within the City of Williamsburg and between the City of Williamsburg and US 17 near Yorktown. AADT in these areas in 2008 was 4,700 and 6,000, respectively,⁵ likely fueled by through traffic and daily commuters to the Naval Weapons Station and Camp Peary, a Department of Defense military reservation officially referred to as the Armed Forces Experimental Training Activity (AFETA). AADT specifically near Yorktown and Jamestown was 2,200 and 2,400, respectively, suggesting that two- to three-times fewer cars are traveling to Yorktown and Jamestown than those traveling the parkway for other purposes.

Parking

Parking lots are located at each of the Colonial NHP attractions as well as at JYF attractions and the Colonial Williamsburg Visitor Center. The number of parking spots in each lot is summarized in Table 5.

⁵ Virginia Department of Transportation (2009). *VDOT 2008 Traffic Data*. "Average Daily Traffic Volumes with Vehicle Classification Data on Interstate, Arterial and Primary Routes." Accessed September 16, 2009 from http://virginiadot.org/info/2008_traffic_data.asp.

Table 5
Yorktown Battlefield shuttle dates of operation

Source: CWF, NPS, and Volpe Center

Attraction	Managing Organization	Approximate Parking Spots
Historic Jamestowne Visitor Center	NPS	150
Glasshouse	NPS	55 auto, 6 shuttle
Jamestown Information Station	NPS	150
Yorktown Battlefield Visitor Center	NPS	300
Colonial Williamsburg	CWF	1,300
Jamestown Settlement	JYF	700
Yorktown Victory Center	JYF	160

Historic Jamestowne Visitor Center

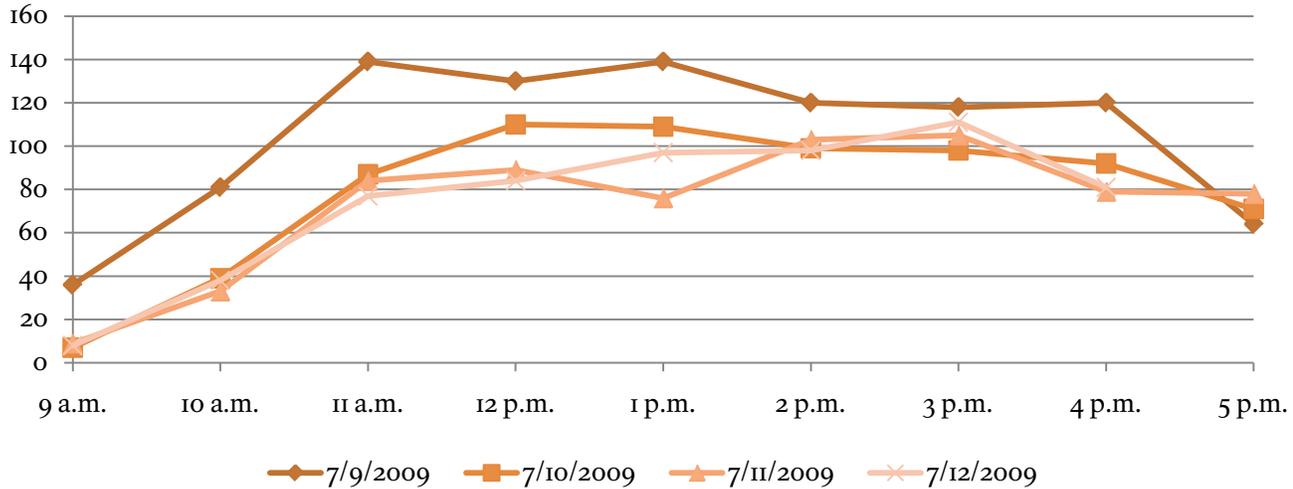
A new Historic Jamestowne Visitor Center was constructed and opened in 2007. During the master planning stage of the Visitor Center, it became clear that cutting the parking lot from 300 to 150 spots as necessitated by the plan would cause congestion problems during peak times. Accordingly, NPS built a separate facility, the Jamestown Information Station, situated roughly 1.8 miles from the Historic Jamestowne Visitor Center. When the Historic Jamestowne Visitor Center lot fills, visitors are instructed to park at the Jamestown Information Station parking lot. During some peak weekends, staff have not responded quickly to the parking situation, causing the Visitor Center parking lot to overflow and people to illegally park in environmentally sensitive areas. Parking utilization is now more closely monitored by Historic Jamestowne Visitor Center staff during peak times to prevent unmanaged overflows.

When the overflow lot at Jamestown Information Station opens, the JAS stops to pick up visitors and transport them to the various Jamestown attractions. The Jamestown Information Station lot was used several times during spring of 2008. During 2009, the main parking lot at Historic Jamestowne Visitor Center was full on a few days and cars parked in a turnaround behind the building. The Jamestown Information Station lot opened once in 2009 on Sunday, July 19, during one of NPS fee-free weekends.

Figure 7 shows hourly utilization of the Historic Jamestowne Visitor Center parking lot during a sample four-day period between July 9 and 12, 2009. This period follows the July 4th holiday weekend, typically one of the peak weekends of the year. As expected, lot utilization is low in the early morning, peaks in the late morning, plateaus in the afternoon, and drops again as the park closes in the late afternoon. Between 11:00 am and 4:00 p.m. the lot was full between roughly 50 and 90 percent on all days. The lot was most full on Thursday, July 9th, and less so on Friday and during the weekend.

Figure 7
Hourly utilization of the Historic Jamestowne Visitor Center parking lot, July 9-12, 2009

Source: NPS and Volpe Center



Glasshouse

Currently, the Glasshouse has roughly 55 parking spots for private vehicles and six for shuttles. Parking for automobiles rarely reaches peak capacity, although there are shuttle overflow issues in the shoulder seasons. During these times shuttles will park in spots for private automobiles.

Jamestown Information Station

Jamestown Information Station contains roughly 150 parking spots that are used when the Historic Jamestowne Visitor Center parking lot reaches capacity. The lot has a paved travel way and porous gravel and grass parking spaces. The parking lot has not yet reached maximum capacity.

Yorktown Battlefield Visitor Center

The Yorktown Battlefield Visitor Center parking lot contains roughly 300 parking spots. The lot only reaches peak capacity on holidays including Memorial Day, July 4th, Yorktown Day, and the Christmas season.

Colonial Williamsburg Visitor Center

The Colonial Williamsburg Visitor Center parking lot contains roughly 1,300 spots; the CWF does not track utilization of the lot. The CWF charged for parking between 1999 and 2003 and recouped its \$1.5 million capital investment to construct the parking lot within the first 18 months. Recreational vehicles and shuttles were charged different amounts than cars, and the price structure changed each year as marketing strategies and ticket structures were modified. Towards the end of this time period, the fee structure changed such that people with specific ticket packages were provided complimentary parking. By 2003, sufficiently few people paid for parking to justify the costs associated with collecting parking fees and JYF discontinued its parking fee collection.

JYF's Yorktown Victory Center

JYF's Yorktown Victory Center parking lot contains roughly 160 spots. The lot rarely reaches peak capacity.

JYF's Jamestown Settlement

JYF's Jamestown Settlement parking lot contains roughly 700 spots. The lot was expanded from roughly 250 in early 2007 in preparation for the 400th Anniversary of Jamestown. The lot rarely reaches peak capacity.

Section 3: Service evaluation

Several transit systems operate within and near York County, James City County, and the City of Williamsburg. While the HTS and JAS are the focus of this study, the HAS, the Historic Yorktown Trolley, the Yorktown Battlefield Shuttle (which operated during selected summer weeks from 2005 to 2007), and the WAT routes are related services. Introduced in the Existing Conditions section of this report, these transit systems are analyzed and described in more detail below.

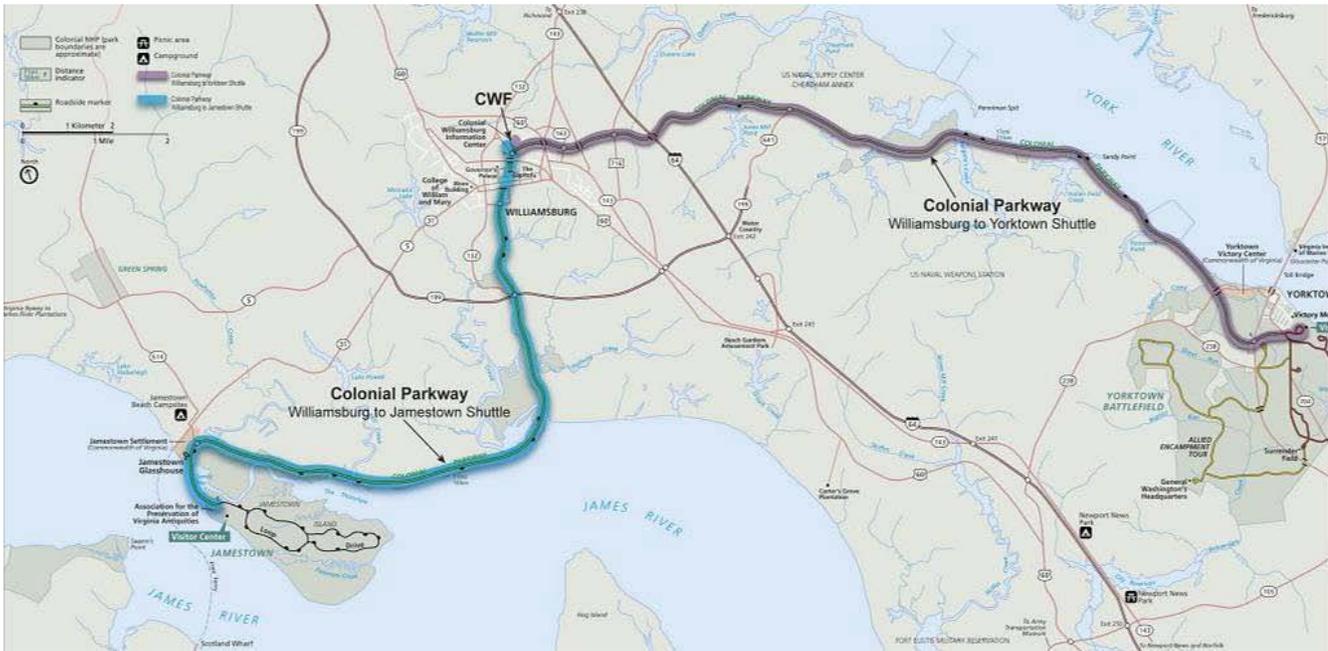
Historical Triangle Shuttle (HTS) and Jamestown Area Shuttle (JAS)

Overview

The HTS and JAS are the focus of this study. The HTS is a free service consisting of two routes, Yorktown HTS and Jamestown HTS, providing transportation from the Colonial Williamsburg Visitor Center to Yorktown and Jamestown, respectively. The HTS operates from March through October of each year. The HTS routes are shown in Figure 8.

Each HTS route operates two shuttle vehicles. Both routes operate at half-hour intervals from 9:00 a.m. to 4:00 p.m., Monday through Sunday, with a final pick-up from the Historic Jamestowne Visitor Center and the Yorktown Battlefield Visitor Center at 5:15 p.m. The HTS does not take visitors to Jamestown or Yorktown at 4:00 p.m., 4:30 p.m., or 5:00 p.m. because the sites take longer to see than the time before the last shuttles return to the Colonial Williamsburg Visitor Center.

Figure 8
Jamestown and Yorktown HTS routes
Source: NPS

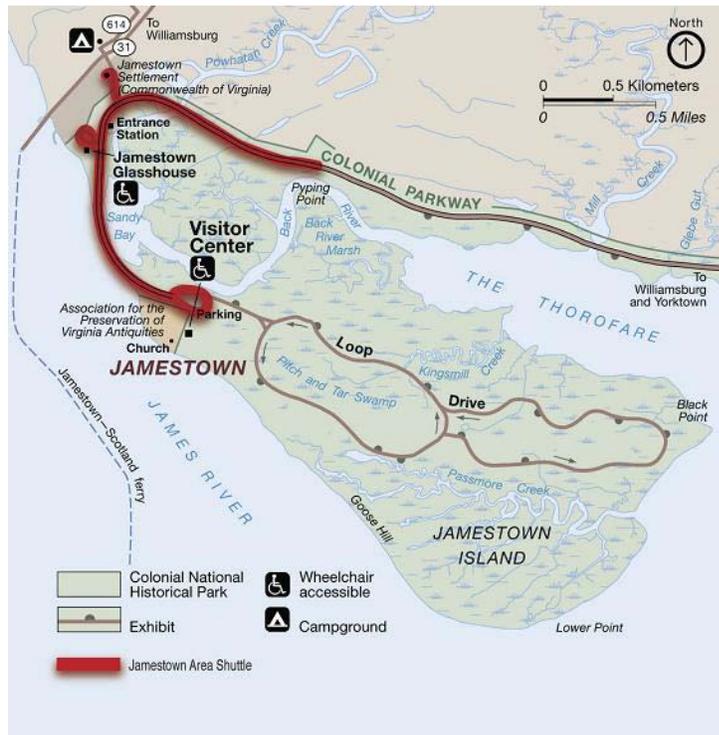


The JAS route, shown in Figure 9, normally traverses a three mile loop from the Historic Jamestowne Visitor Center, to the Glasshouse, to JYF's Jamestown Settlement, and then back to the Historic Jamestowne Visitor Center. When parking at the Visitor Center overflows and people begin parking at Jamestown Information Station (across from Pyping Point on the map), the length of the loop route is extended to roughly six miles. From March through October, the JAS operates daily, 9:00 a.m. to 5:00 p.m., with stops approximately every 20 minutes at each of the four sites. During the 2008 season, one

shuttle vehicle was in operation March through October, while a second shuttle vehicle operated from March until August. The second vehicle was not reinstated in 2009 due to concerns about pavement damage to the Colonial Parkway.

Figure 9
Jamestown Area Shuttle (JAS) route

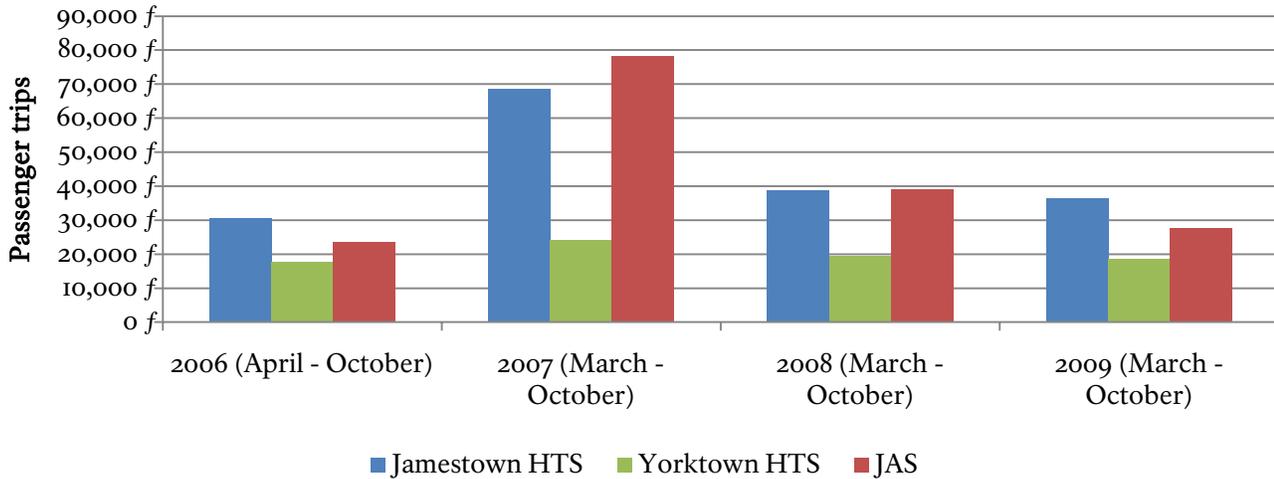
Source: NPS



Ridership for the HTS and JAS is shown in Figure 10. Ridership on the Jamestown HTS has historically been higher than on the Yorktown HTS, for two reasons. First, visitation at Jamestown is, in most years, higher than that of Yorktown. Second, there is no shuttle on which to see Yorktown Battlefield, and visitors wishing see Yorktown Battlefield in depth usually take their cars. This point is described below in Figure 12. Figure 10 shows that overall annual ridership of the JAS is generally greater than that of the Yorktown HTS but sometimes more and sometimes less than that of the Jamestown HTS. The parking lot at Historic Jamestowne allows some visitors to park there and take the JAS to Glasshouse or JYF's Jamestown Settlement, while other visitors may ride the shuttle to the Historic Jamestowne Visitor Center but not ride the JAS to Glasshouse or JYF's Jamestown Settlement. Accordingly, the Jamestown HTS and JAS figures are related but different. Figure 10 shows a spike in ridership (indicative of a spike in overall visitation) in 2007 for the Jamestown HTS and JAS that is attributable to the 400th Anniversary of Jamestown.

Figure 10
HTS and JAS annual passenger trips, 2006 to 2009

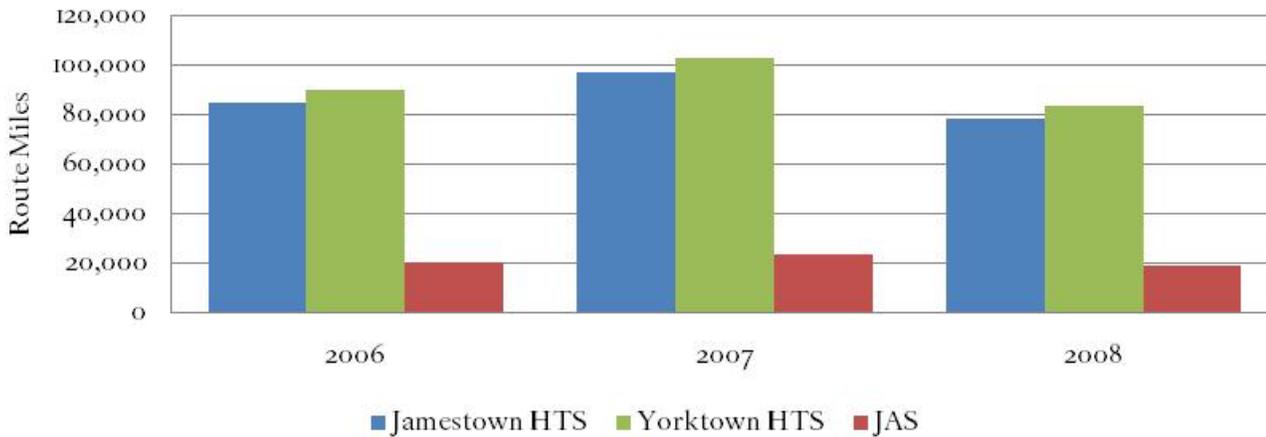
Source: NPS and Volpe Center



Vehicle mileages for the HTS and JAS routes from 2006 to 2008 are shown in Figure 11. Mileage for the two HTS routes is roughly the same, but both are significantly higher than the JAS because each HTS route operates two shuttle vehicles and the JAS loop route is shorter than the routes of the HTS.

Figure 11
Annual route miles by route

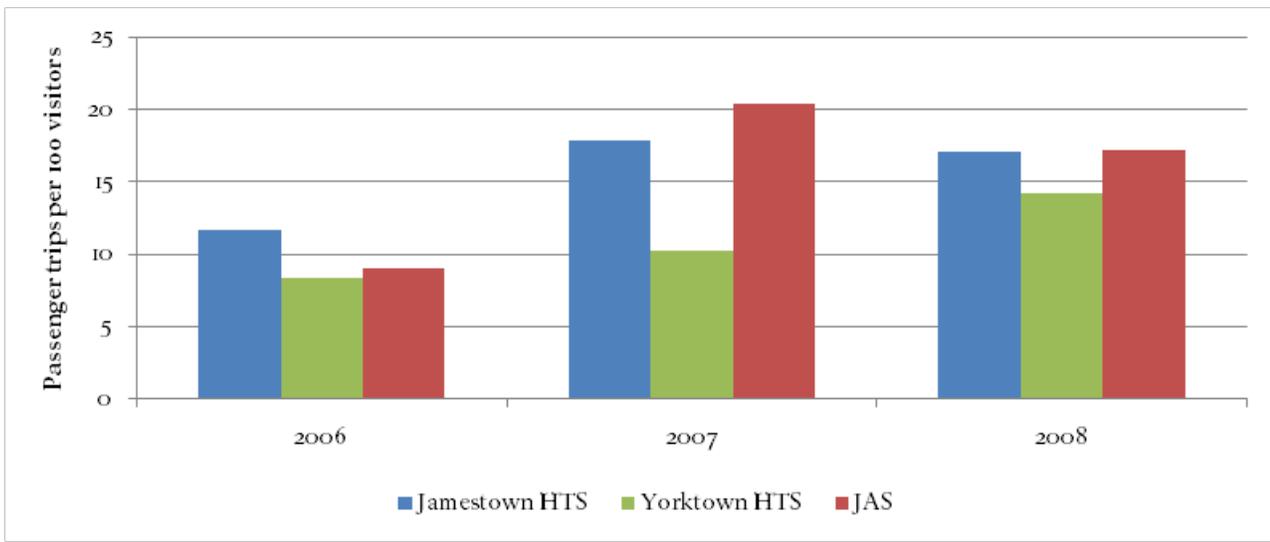
Source: NPS and Volpe Center



Passenger trips per 100 visitors by route/site are shown in Figure 12. Passenger trips for the Jamestown HTS and JAS are compared with visitation at the Historic Jamestown Visitor Center and passenger trips for the Yorktown HTS are compared with visitation at the Yorktown Battlefield Visitor Center. The graph shows that per 100 visitors, more passenger trips are made to and from Jamestown than Yorktown. Thus, use of the Jamestown shuttle services is driven by more than visitation (which in most years is higher at Jamestown). The relative difference in ridership per visitation might be due to there not being any shuttle in Yorktown that allows visitors to explore the battlefield. Visitors can only visit the extent of the battlefield by driving their personal vehicles.

Figure 12
Passenger trips per 100 visitors by route/site

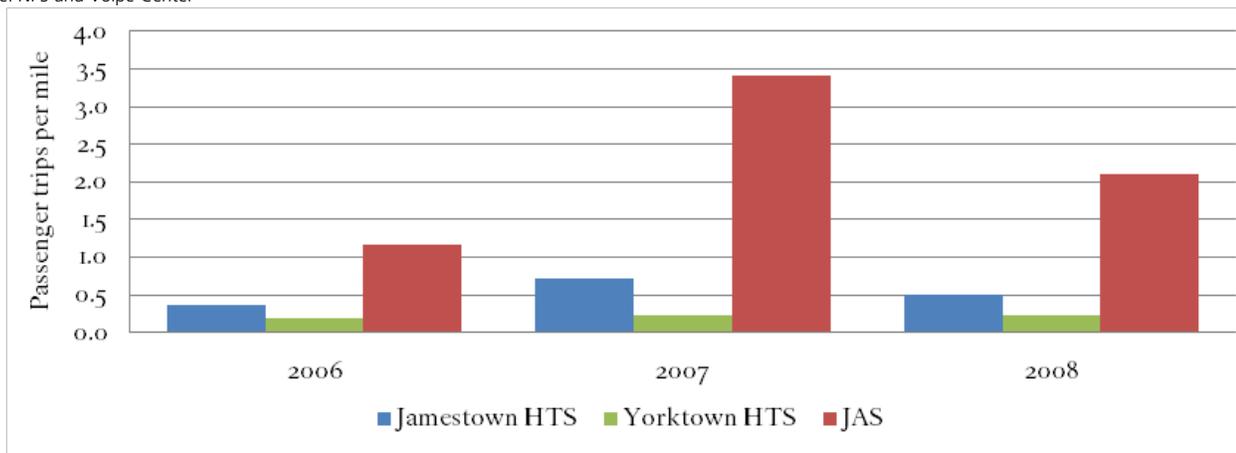
Source: NPS and Volpe Center



Passenger trips per vehicle mile traveled for each of the routes are shown in Figure 13. The JAS provides the most passenger trips per mile traveled and the Jamestown HTS provides the second most, though significantly fewer than the JAS. Reasons for this are that the JAS provides the most passenger trips, the JAS has the highest frequency (four buses per hour), and the JAS has the shortest route.

Figure 13
Annual passenger trips per annual route miles

Source: NPS and Volpe Center



The 2009 HTS and JAS schedules are shown in Figure 14.

Figure 14
Schedule for HTS, JAS, and Historic Yorktown Trolley

Source: NPS

All service available from March 16 through November 1, 2009



HISTORIC TRIANGLE SHUTTLE



Jamestown Route

Yorktown Route

Colonial Williamsburg
to Jamestown

Jamestown
to Colonial Williamsburg

Colonial Williamsburg
to Yorktown

Yorktown
to Colonial Williamsburg

9:00 am
9:30 am
10:00 am
10:30 am
11:00 am
11:30 am
12:00 pm
12:30 pm
1:00 pm
1:30 pm
2:00 pm
2:30 pm
3:00 pm
3:30 pm

9:30 am – Historic Jamestowne
9:35 am – Jamestown Settlement
10:00 am – Historic Jamestowne
10:05 am – Jamestown Settlement
10:30 am – Historic Jamestowne
10:35 am – Jamestown Settlement
11:00 am – Historic Jamestowne
11:05 am – Jamestown Settlement
11:30 am – Historic Jamestowne
11:35 am – Jamestown Settlement
12:00 am – Historic Jamestowne
12:05 am – Jamestown Settlement
12:30 pm – Historic Jamestowne
12:35 pm – Jamestown Settlement
1:00 pm – Historic Jamestowne
1:05 pm – Jamestown Settlement
1:30 pm – Historic Jamestowne
1:35 pm – Jamestown Settlement
2:00 pm – Historic Jamestowne
2:05 pm – Jamestown Settlement
2:30 pm – Historic Jamestowne
2:35 pm – Jamestown Settlement
3:00 pm – Historic Jamestowne
3:05 pm – Jamestown Settlement
3:30 pm – Historic Jamestowne
3:35 pm – Jamestown Settlement
5:15 pm – Historic Jamestowne
5:25 pm – Jamestown Settlement

9:00 am
9:30 am
10:00 am
10:30 am
11:00 am
11:30 am
12:00 pm
12:30 pm
1:00 pm
1:30 pm
2:00 pm
2:30 pm
3:00 pm
3:30 pm

9:30 am – Yorktown Battlefield
9:40 am – Yorktown Victory Center
10:00 am – Yorktown Battlefield
10:10 am – Yorktown Victory Center
10:30 am – Yorktown Battlefield
10:40 am – Yorktown Victory Center
11:00 am – Yorktown Battlefield
11:10 am – Yorktown Victory Center
11:30 am – Yorktown Battlefield
11:40 am – Yorktown Victory Center
12:00 pm – Yorktown Battlefield
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2:00 pm – Yorktown Battlefield
2:10 pm – Yorktown Victory Center
2:30 pm – Yorktown Battlefield
2:40 pm – Yorktown Victory Center
3:00 pm – Yorktown Battlefield
3:10 pm – Yorktown Victory Center
3:30 pm – Yorktown Battlefield
3:40 pm – Yorktown Victory Center
5:15 pm – Yorktown Battlefield
5:30 pm – Yorktown Victory Center



JAMESTOWN AREA SHUTTLE



YORKTOWN TROLLEY

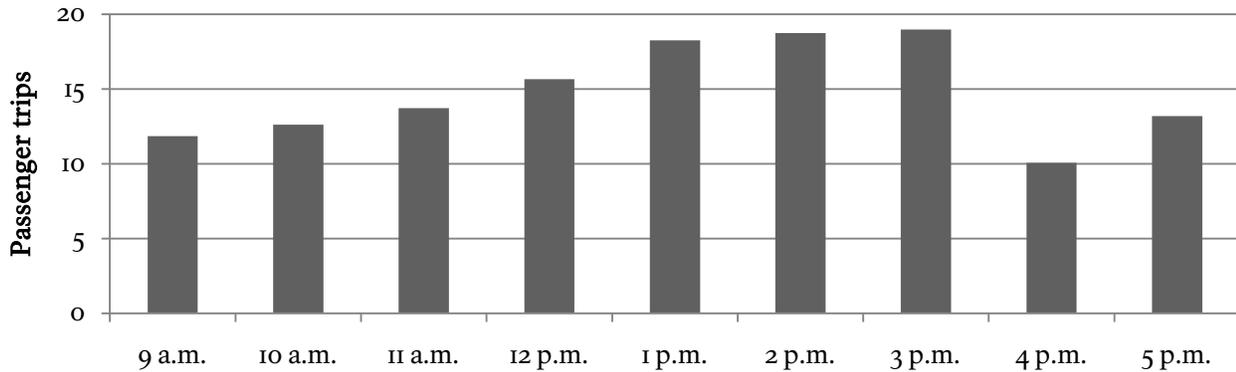
Service between Historic Jamestowne, Jamestown Glasshouse and Jamestown Settlement. Stops every 10-15 minutes from 9:00 a.m. to 5:00 p.m.

Service to Yorktown Battlefield Visitor Center, Yorktown Victory Center, Riverwalk Landing and other points of interest in Yorktown. Stops every 20 minutes from 10:00 a.m. to 6:00 p.m.

Average hourly ridership for all routes is shown in Figure 15. The most passenger trips occur in the early afternoon from 1:00 p.m. to 3:00 p.m. During this time morning visitors may be leaving, afternoon visitors may be arriving, and all day visitors may be riding the JAS between Jamestown sites.

Figure 15
Average hourly passenger trips for the HTS and JAS, 2009

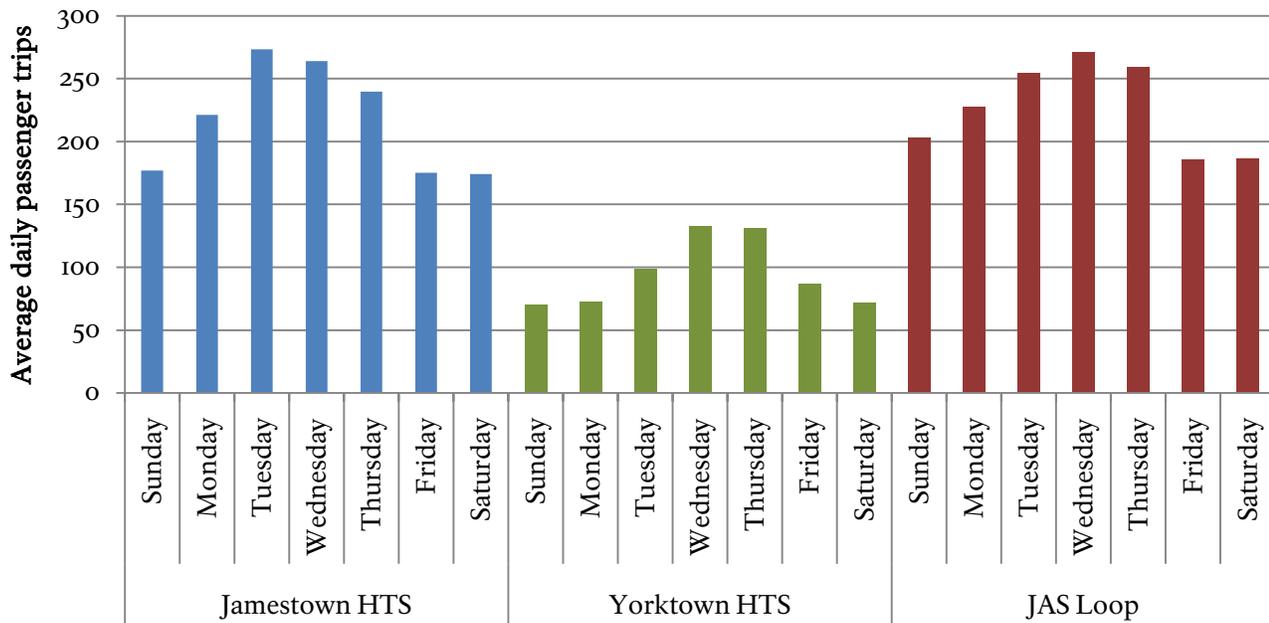
Source: Colonial NHP and Volpe Center



Average daily ridership from 2007 through 2009 for the HTS and JAS routes are shown in Figure 16. For all three routes, ridership generally increases Sunday through Wednesday and drops significantly Thursday through Saturday. This pattern may be due to extended (week or longer) vacations where the travel to the area occurs on the weekends.

Figure 16
Average daily passenger trips by day and route, 2007 - 2009

Source: NPS and Volpe Center



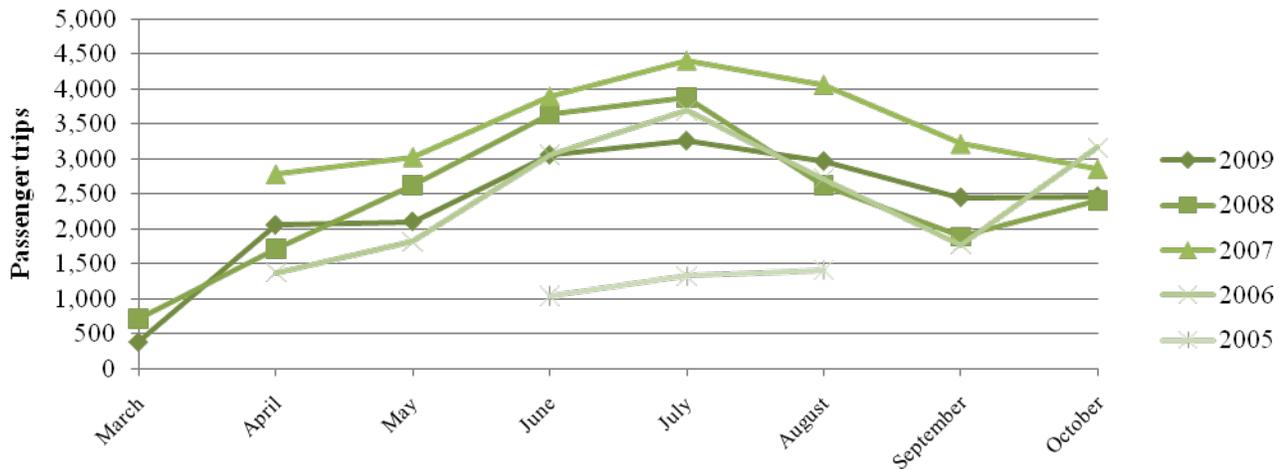
Yorktown HTS

The Yorktown HTS route connects Colonial Williamsburg Visitor Center to Yorktown Battlefield Visitor Center and JYF's Yorktown Victory Center. Two shuttle vehicles operate continuously on the Yorktown HTS route. The trip to Yorktown Battlefield Visitor Center is nearly 13 miles. Monthly ridership on the Yorktown HTS route from 2005 to 2009 is shown in Figure 17. Ridership appears to peak in July.

Ridership on the Yorktown HTS was highest in 2007 during the 400th Anniversary of Jamestown and the lowest in 2005 while the service was still a pilot program.

Figure 17
Yorktown HTS passenger trips

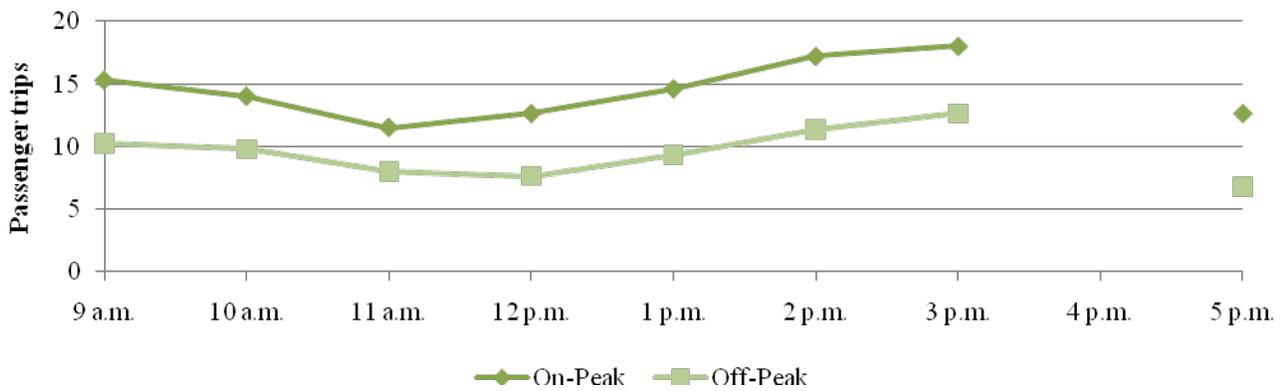
Source: NPS and Volpe Center



Average hourly ridership for this period during peak and off-peak months is shown in Figure 18. Hourly ridership tends to be greatest, roughly 15-17 people per trip, during the morning and early afternoon. During these times visitors use the shuttles to reach Yorktown, while between these times they visit Yorktown Battlefield.

Figure 18
Average hourly Yorktown HTS passenger trips, 2009

Source: NPS and Volpe Center

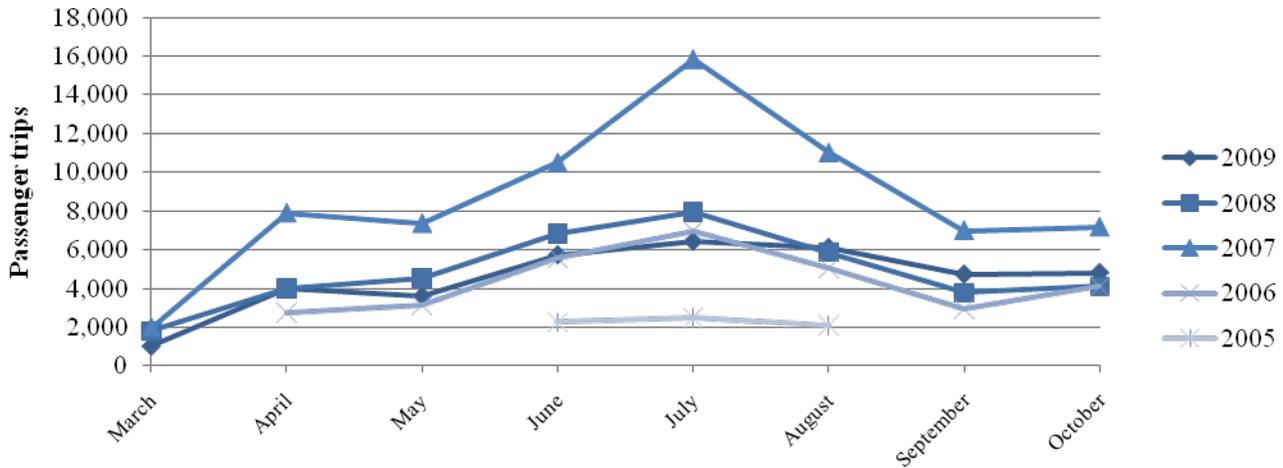


Jamestown HTS

The Jamestown HTS route connects Colonial Williamsburg Visitor Center to the Historic Jamestowne Visitor Center, JYF’s Jamestown Settlement, and Jamestown Information Station as needed. Two shuttle vehicles operate continuously on the Jamestown HTS route. The trip from the Colonial Williamsburg Visitor Center to the Historic Jamestowne Visitor Center is approximately nine miles. Monthly ridership on the Jamestown HTS route from 2005 to 2009 is shown in Figure 19. Ridership was clearly greatest in 2007. In all years ridership peaked in July, corresponding with peak park visitation.

Figure 19
Monthly Jamestown HTS passenger trips

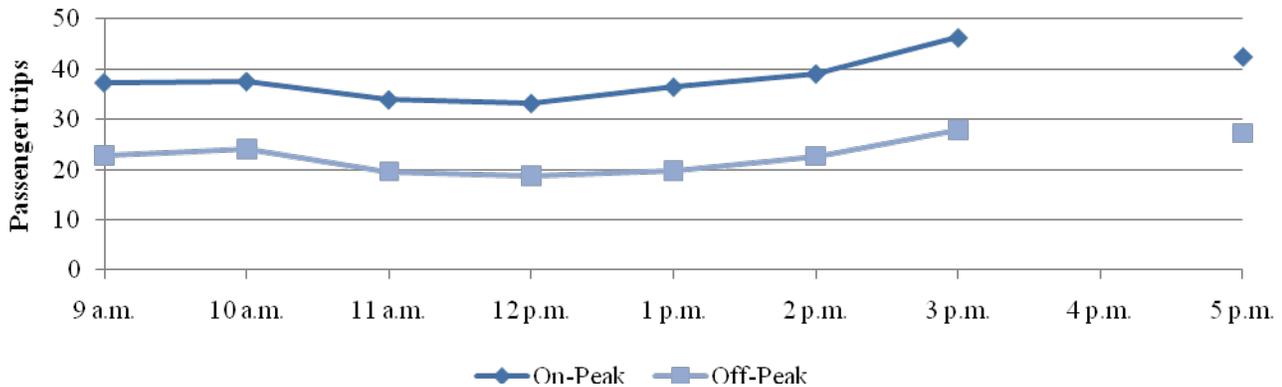
Source: NPS and Volpe Center



Average hourly ridership during this period for peak and off-peak months is shown in Figure 20. Similar to the Yorktown HTS, the Jamestown HTS ridership peaks in the morning and mid afternoon. During these times visitors use the shuttles to reach Jamestown, while between these times they visit Jamestown attractions.

Figure 20
Average hourly Jamestown HTS passenger trips, 2009

Source: NPS and Volpe Center

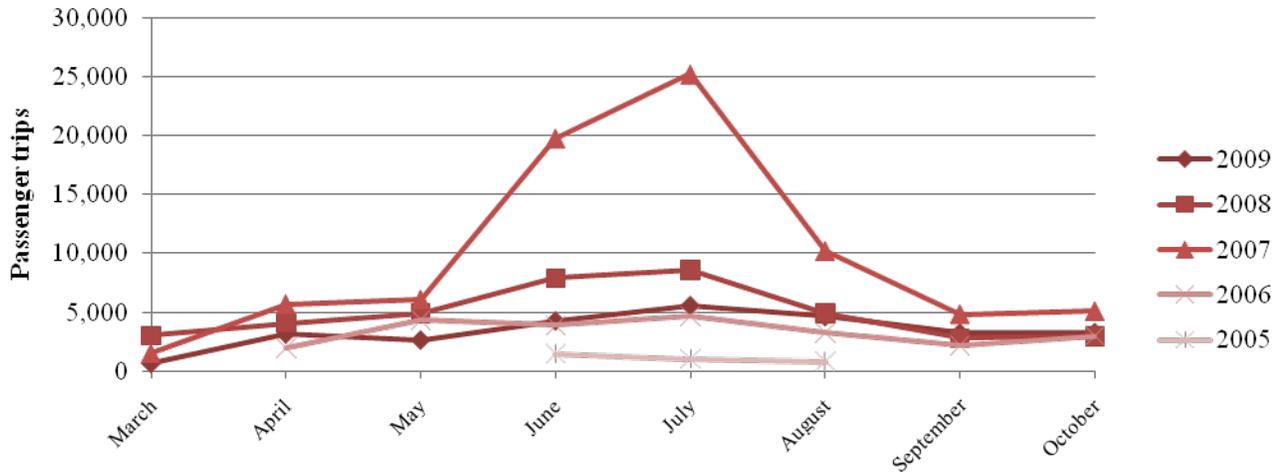


Jamestown Area Shuttle (JAS)

Monthly passenger trips for JAS from 2005 to 2009 are shown in Figure 21. Similar to the HTS routes, ridership was greatest in 2007, due to the 400th Anniversary of Jamestown, and tends to peak in July, corresponding with peak park visitation.

Figure 21
Monthly JAS passenger trips

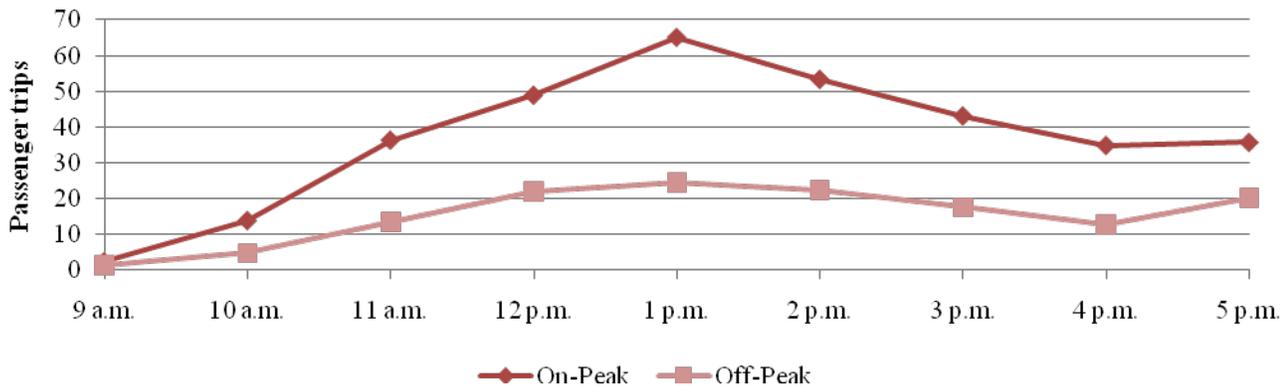
Source: NPS and Volpe Center



Average hourly ridership during this period for peak and off-peak months is shown in Figure 22. In contrast to the HTS routes, particularly the Jamestown HTS, hourly ridership is greatest in late morning and early afternoon. The data are in line with driver and NPS observations that visitors ride the Jamestown HTS in the morning, use the JAS to see the Jamestown sites during their visit, and ride the HTS back to the Colonial Williamsburg Visitor Center in the afternoon.

Figure 22
Average hourly JAS passenger trips, 2009

Source: NPS and Volpe Center

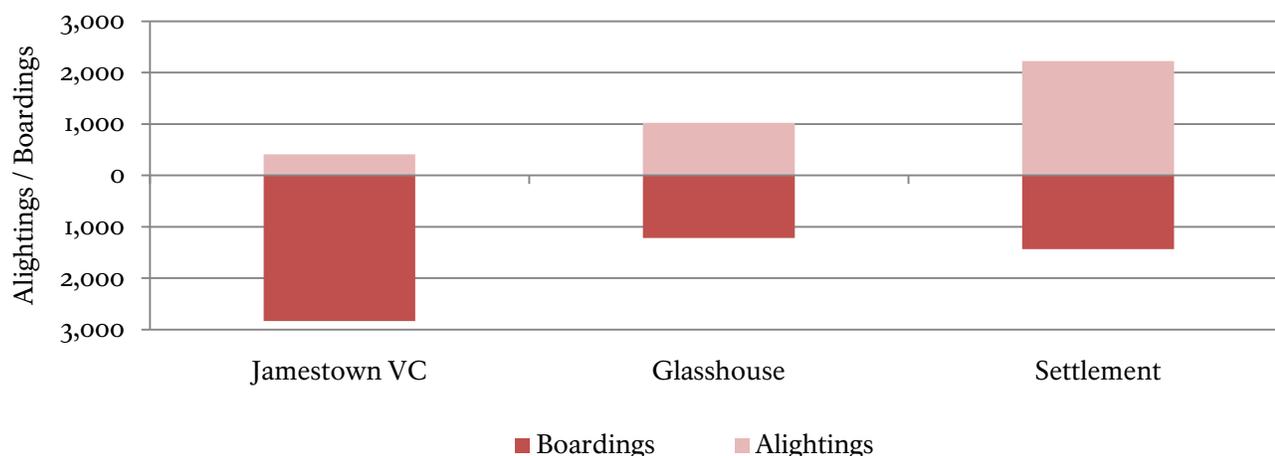


During July 2009, shuttle drivers noted hourly JAS boardings and alightings on Thursdays and Saturdays. The results were extrapolated for the entire month of July by using the data for Thursdays to represent weekdays and the data for Saturdays to represent weekends. The extrapolated results demonstrate a pattern of rider behavior as shown in Figure 23. Alightings represent visitors who get off a JAS shuttle and enter a site. Boardings numbers represent visitors who exit a site and get on a JAS shuttle. Accordingly, many more riders get on at Historic Jamestowne Visitor Center than get off. They ride to the Glasshouse, where the number of people who get on and off the shuttle are roughly equivalent. The shuttle continues to the JYF's Jamestown Settlement where significantly more people get off than get on. Most of the shuttle riders who get off at JYF's Jamestown Settlement likely take the HTS back to the Colonial Williamsburg

Visitor Center. These riders most likely took the HTS to the Historic Jamestowne Visitor Center in the morning.

Figure 23
Extrapolated boardings and alightings for the JAS, July 2009

Source: NPS and Volpe Center



Total trips provided by HTS and JAS compared with estimated combined park visitation is shown in Table 6.⁶ Each trip represents a single passenger boarding the shuttle. A passenger that boards the shuttle multiple times will generate multiple trips. From 2006 to 2008 there were between roughly 20 and 30 trips per 100 visitors.

Table 6
Comparison of total trips with estimated combined visitation

Source: NPS and Volpe Center

Year	Combined visitation (March – October)	Trips	Trips per 100 Visitors
2006	317,124	71,704	23
2007	521,051	171,377	33
2008	310,831	97,548	31
2009	292,053	82,845	28

HTS and JAS shuttles

All the HTS and JAS shuttle vehicles are Orion shuttles with John Deere engines running on compressed natural gas (CNG). The shuttles were purchased with funds from a congressional appropriation. WATA became the recipient of the funds because only a public transit agency could receive the federal funding from the Federal Transit Administration (FTA). CWF provided the 20 percent local match required to receive the congressionally appropriated funds, and WATA used its existing contract vehicle with its shuttle supplier to purchase the CNG shuttles. Seven shuttles were purchased in 2006 and are due for replacement in 2018. Concurrently, WATA became incorporated as the regional transit authority, and CWF became a key member of WATA and eventually a public transit provider itself.

⁶ The trips per 100 visitors are higher in Table 6 than in Figure 12 because in the former they are tabulated systemwide (all three routes) and based on combined visitation which recognizes visitor overlap among sites. The latter reports trips per 100 visitors by route and is based on visitation at each site (Historic Jamestowne and Yorktown Battlefield).

WATA continues to own and maintain the shuttles and holds the titles and tags. CWF leases the shuttles from WATA for a nominal fee, and Colonial NHP contracts with CWF to operate the shuttles. CWF has operated transit around Colonial Williamsburg since 1952 and is an experienced provider.

The shuttles, shown in Figure 24, are white with script lettering. The shuttles display routes in scrolling LED signs on the front and sides that identify the services as follows:

- Historic Triangle – Shuttle Jamestown;
- Historic Triangle – Shuttle Yorktown; and
- Jamestown Area Shuttle.

Figure 24
HTS and JAS shuttle buses

Source: Volpe Center



Drivers also confirm routes with the passengers. HTS and JAS shuttle drivers announce stops and if asked by passengers, describe sites along the way, explain the schedule of the last shuttle, and provide a little history. Drivers are trained on all the HTS, Historic Area Shuttle (described in the next section), and JAS routes and must pass a test about attractions and information for each route before they may drive that route. Drivers visit the sites and take the tours themselves so they can answer visitors' questions.

An audio program developed by NPS provides interpretation on both the HTS and the JAS. The programming enhances the visitor experience by describing the area's natural and cultural history and by providing some background information on the different sites. Some visitors have commented that road noise (due likely to the aggregate paving of the parkway) sometimes obscures playback of the recording, especially when the shuttle is full and side conversations are occurring.

Visitor survey results

The Volpe Center conducted a survey of HTS/JAS riders Thursday, July 9, through Sunday, July 12, 2009. The objective of the survey was to obtain information on how visitors are using the shuttle and their level of satisfaction with different aspects of the service. The survey was administered at several different locations and sampled riders of the Yorktown HTS, the Jamestown HTS, and the JAS. Although the survey results are presented in detail in a separate report,⁷ they are briefly summarized here.

Visiting groups intercepted over the survey period expressed a very high level of overall satisfaction with the shuttle service: 99 percent of groups riding the HTS and 99 percent of those on the JAS reported that they were either "very satisfied" or "satisfied" with their overall experience on the shuttle.

Visitors similarly reported being pleased with specific features of the shuttle service including timeliness, frequency of service and number of sites covered, and ease of understanding shuttle route information and locating stops. For each of these features of the service, three-quarters or more of respondents reported being "very satisfied."

⁷ "Colonial National Historical Park Shuttle Service Survey Report," the Volpe Center, February 2010

Comments and feedback received were overwhelmingly positive. Of the 43 percent of survey respondents who chose to leave written comments regarding the shuttle system, 65 percent praised the shuttle service. A number of visiting groups highlighted their appreciation of the service because it obviated the need to drive on their visit to the park. Shuttles were characterized as comfortable and convenient.

Overwhelmingly, visitors viewed the shuttle as contributing to a pleasant and enjoyable park experience: 72 percent of groups cited “I am able to relax and view the scenery” among their reasons for taking the shuttle. Through both reasons given and comments, visitors who had brought a personal vehicle to the area strongly expressed that the shuttle service was a preferable alternative to using that vehicle in the park: overall, 80 percent of visiting groups intercepted had used and planned to use only the shuttle to visit sites in the park. Some groups (between eight percent and 13 percent of visitor groups) had not brought a personal vehicle into the area at all, and relied exclusively on the shuttle system to reach visitor sites in the area. Three groups interviewed had members with mobility impairments and reported the shuttle system made the park more accessible to them.

The two features of the shuttle service in which less than a majority said they were “very satisfied” were the ability to hear the audio programming (46 percent were “very satisfied”) and usefulness of the audio programming (43 percent were “very satisfied”). Nonetheless, large majorities said they were “very satisfied” or “satisfied” with these aspects of the service (70 percent and 81 percent, respectively).

Responses to several survey questions, as well as anecdotal evidence from survey staff interactions with survey respondents, suggested a high degree of confusion among visitors regarding the identification and location of tourist sites within Colonial NHP. Many groups emphasized that the shuttle services (and, in particular, the shuttle operators themselves) were helpful or instrumental in orientating them toward available sites, in addition to making these sites accessible, during their visit to the park.

Overall, the survey findings indicate that users strongly support the shuttle service. The survey data clearly demonstrate that visitors value the service and feel that it enhances their experience at the park. The shuttle service enables visitors to relax and enjoy the sites, relieving the stress associated with driving in an unfamiliar area. In addition, the shuttle assists visitors with orientation, contributing to their understanding of park resources, and reduces air pollution since riders on the comparatively clean CNG buses likely would have otherwise driven their own vehicles.

The data, as well as anecdotal evidence from the shuttle drivers, also suggest that there is an opportunity to increase ridership on the shuttle through enhancing marketing efforts. Visitors’ responses regarding their initial sources of information on the shuttle suggest that most were unaware of the shuttle system’s existence prior to arriving in the Colonial Williamsburg area.

Other transit services

Historic Area Shuttle (HAS)

Also operated by CWF but not associated with Colonial NHP is the HAS. The HAS provides transportation among various sites within the Colonial Williamsburg historic area and runs from March to October. Thirteen shuttles serve Colonial Williamsburg. The service runs throughout the year, 9:00 a.m. to 10:00 p.m., and there is no fare. Locations of HAS shuttle stops are shown as red numerals in Figure 25. Descriptions of HAS shuttle stops are provided in Table 7. Annual ridership is shown in Figure 26.

Figure 25
Location and order of HAS shuttle stops
 Source: CWF

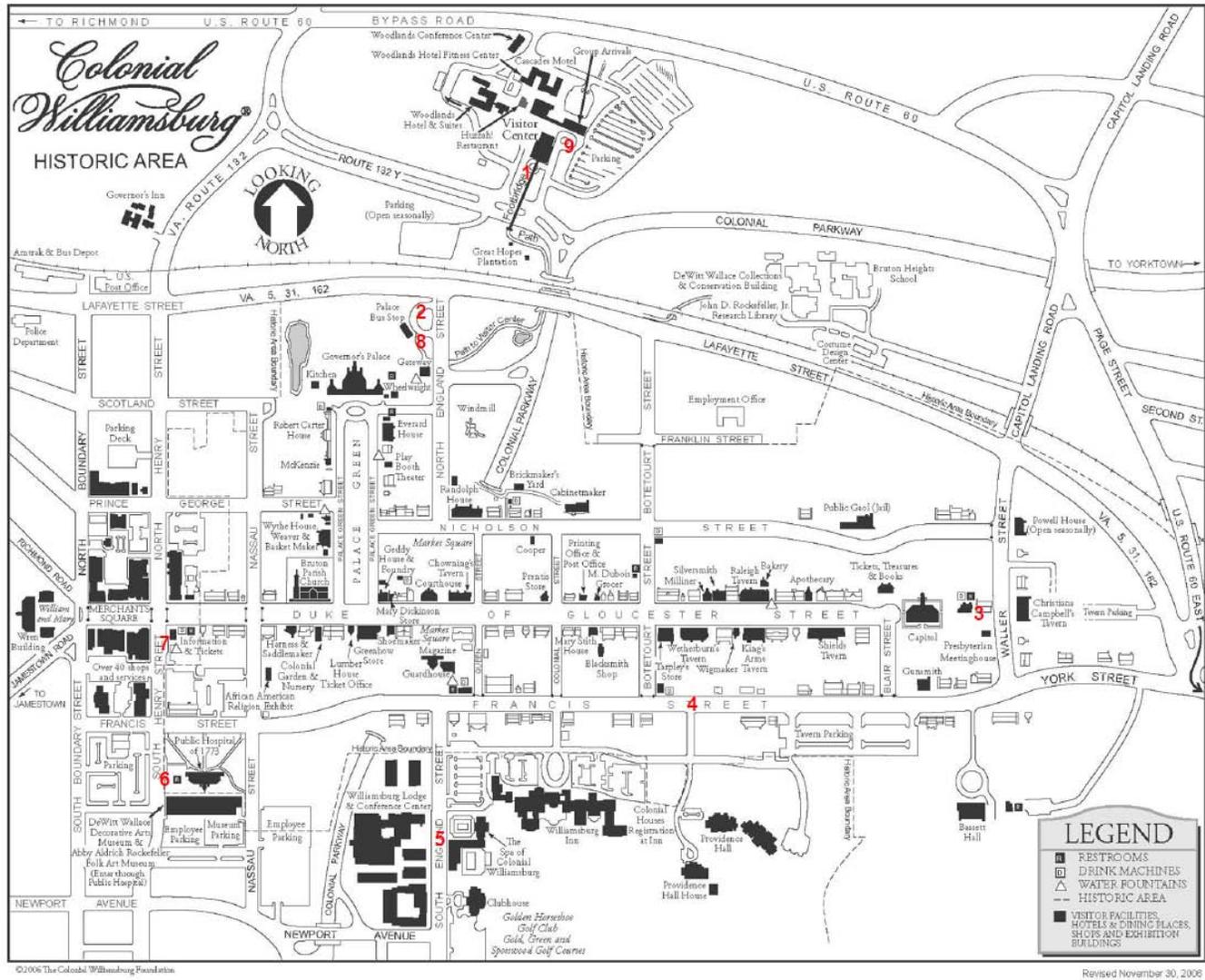


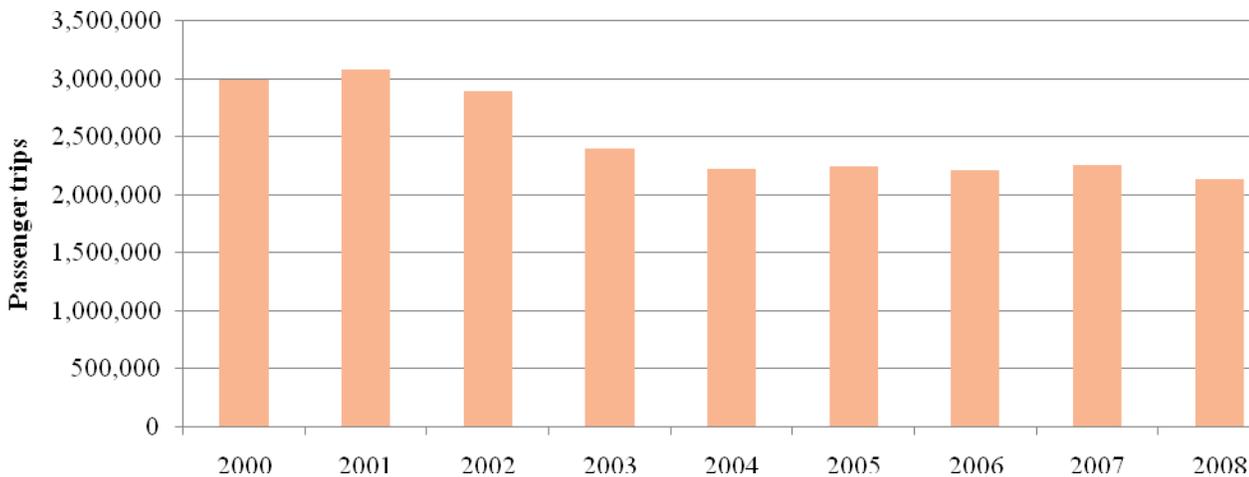
Table 7
Description of HAS shuttle stops

Source: CWF and Volpe Center

Stop	Description
1	Colonial Williamsburg Visitor Center, lower pick-up
2	Palace shuttle stop
3	Christiana Campbell's Tavern
4	East Francis Street and Bucktrout Lane
5	The Spa at Colonial Williamsburg
6	Public Hospital of 1773
7	Merchant Square, information and ticket stand
8	Palace shuttle stop
9	Colonial Williamsburg Visitor Center, upper drop-off

Figure 26
Annual ridership for shuttles serving Colonial Williamsburg (HAS)

Source: CWF and Volpe Center



Historic Yorktown Trolley

The Historic Yorktown Trolley provides service to the Yorktown Battlefield Visitor Center, JYF's Yorktown Victory Center, Yorktown's Riverwalk Landing (a pedestrian-friendly development of shops and eateries located in Yorktown along the York River), and other points of interest within the village. The trolley loops every 20 to 25 minutes from 10:00 a.m. to 6:00 p.m. daily from March 16 to November 1. The trolley route is shown in Figure 27. Some trolley riders arrive to Yorktown via the Yorktown HTS. Ridership is shown in Figure 28. There is no fare to ride the trolley.

Figure 27
Historic Yorktown Trolley map and schedule
 Source: York County Tourism Department

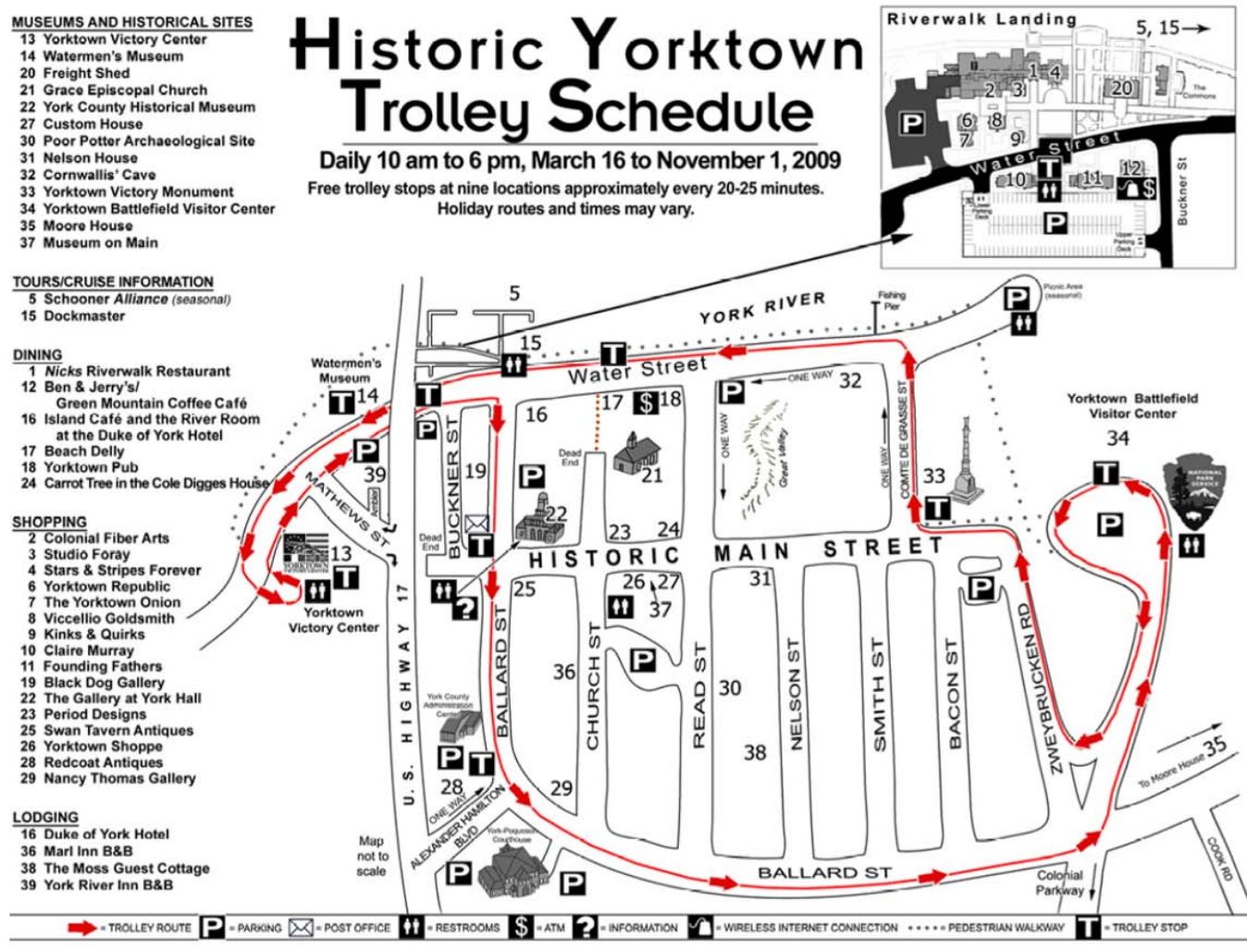
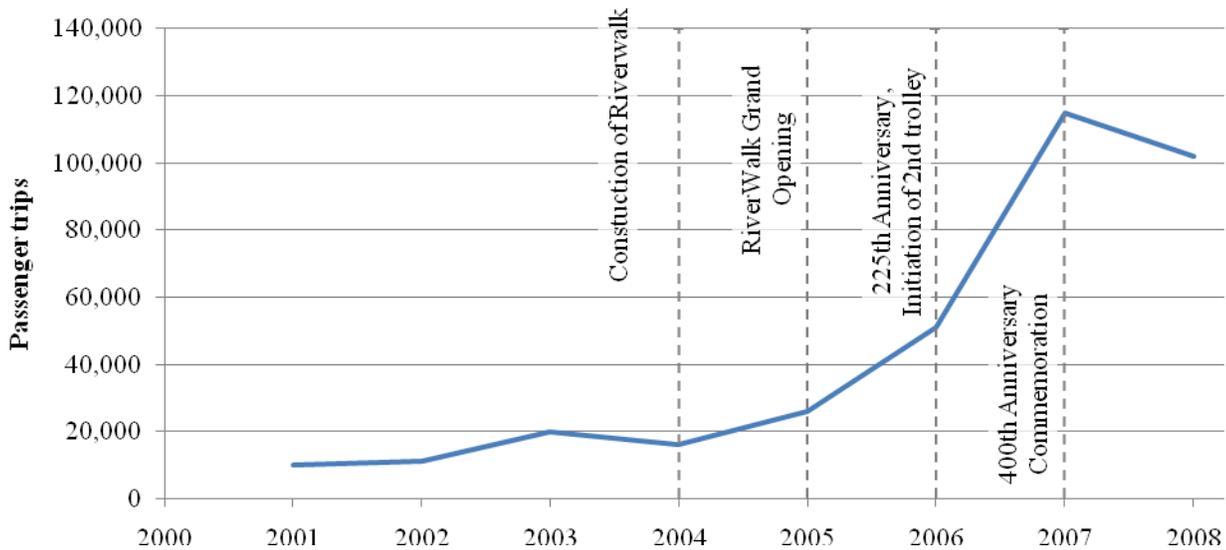


Figure 28
Ridership of Historic Yorktown Trolley, 2001-2008

Source: York County Tourism Department and Volpe Center



York County owns the trolleys, which were obtained from federal grants. The trolleys are considered public transit and are not available for private charter. York County Tourism Department has run the trolley since 2000 and coordinates with Colonial NHP regarding the HTS and trolley schedules. The Tourism Department reviews the HTS/Trolley joint rack cards (paper transit schedules), shares ridership numbers with the park, and assists with marketing by putting HTS rack cards on trolleys and in the Information Center in Yorktown on Main Street and distributing NPS press releases to businesses and hotels in Yorktown. The Tourism Department also posts HTS shuttle information on the York County tourism website.

Williamsburg Area Transport (WAT)

WAT, operated by WATA, is a regional transit system servicing James City County, the City of Williamsburg, and the Bruton District of York County as shown in Figure 29. WAT has grown significantly in the last two years by cutting headways from 60 to 30 minutes, cutting some routes and extending others, and investigating a new trolley service from Merchant Square to the Newtown and High Street developments in Williamsburg. In 2007, WAT provided 4.8 million passenger miles and 3.0 million unlinked trips.⁸ Roughly 2.2 million of these trips are provided by HTS and HAS.⁹ WAT operates 31 shuttles at maximum service and has a contract with CWF to maintain the HAS and HTS/JAS shuttle vehicles.

⁸ 2007 National Transit Database

⁹ Interview with Danny McDaniel, CWF Safety and Security.

Figure 29
WATA shuttle routes
 Source: WATA



WATA became a regional authority in July 2008 and is governed by a board consisting of representatives from City of Williamsburg, James City County, York County, and the CWF. The WATA board is interested in continuing the HTS/JAS services but is unsure about how to fund them. In case HTS and JTS cannot be funded, WAT is considering adding transit service to Jamestown. A consultant is currently investigating potential routes via Routes 5 and 31 that would include Jamestown. The potential new route would make only a few trips each day but would operate year round.

WAT previously offered Relax and Ride, a summer service that provided transit service to people in hotels and time share condominiums to attractions such as Colonial Williamsburg and Busch Gardens. This service has since been integrated into normal WAT service.

As part of the Hampton Roads metropolitan area, WAT is currently receiving some congestion management and air quality (CMAQ) funding, which expires in 2012.

Yorktown Battlefield shuttle

NPS ran a shuttle through the Yorktown Battlefield five times a day for ten weeks during the summers of 2005, 2006, and 2007. Dates for the service were:

- 2005: July 24th – August 14th
- 2006: June 10th – September 1st; and
- 2007: June 1st – September 3rd

The shuttle tour route lasted 55 minutes. The service was so popular that a sign-up list was maintained to manage rider demand. Total ridership during 2005, shown in Figure 30, tended to grow throughout the week, peaking on Thursday and Friday. Average ridership during the same period, shown in Figure 31, suggests greater demand for the service on weekdays than on weekends as well.

Figure 30
Yorktown Battlefield shuttle total ridership by day, 2005

Source: NPS and Volpe Center

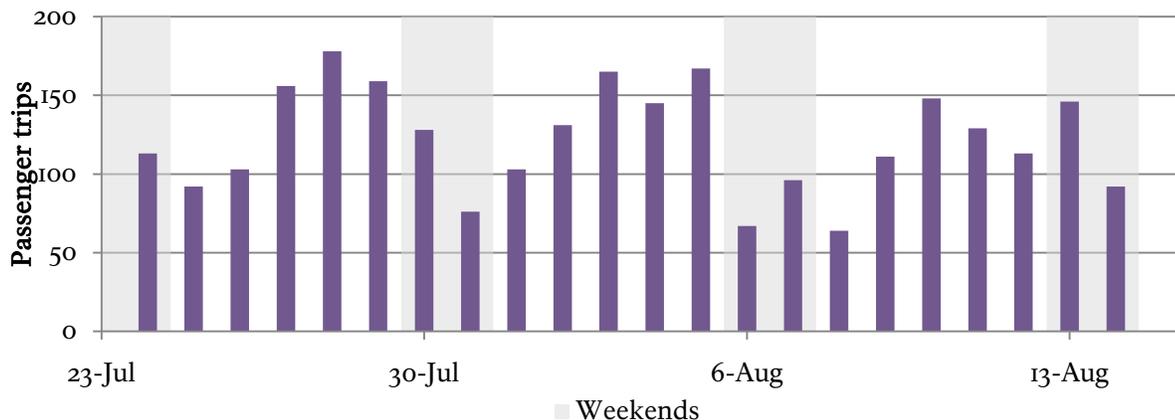
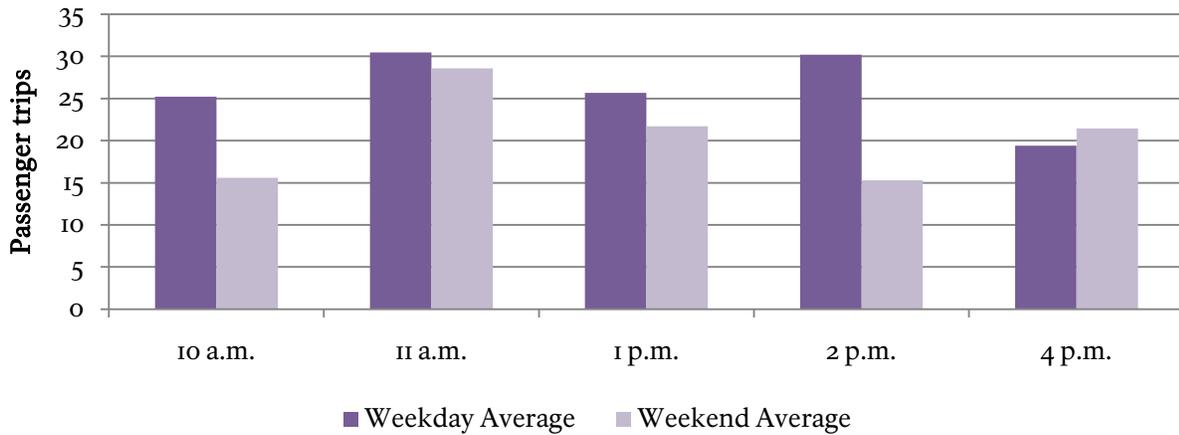


Figure 31
Yorktown Battlefield shuttle average ridership by hour, 2005

Source: NPS and Volpe Center



CWF ran the shuttle during 2005. James River Bus Lines took over the service for two years before it was discontinued due to lack of funding. Ridership data for 2006 is unavailable, but from June 8th to 16th, 2007, there were 45 tours with 1,260 riders, an average of 28 riders per shuttle. Only two shuttles ran with less than 20 riders and five ran with less than 25 riders. Currently, without a shuttle tour, the most realistic way to tour the battlefield is in a private automobile.

Conclusion

By several accounts, the HTS/JAS shuttle service has been a positive addition to the visitor experience at Colonial NHP. In 2007, the year of the 400th Anniversary of Jamestown, the shuttle service provided over 170,000 passenger trips in an eight month period. In 2009 service provided a modest, but significant, 80,000 passenger trips in an eight month period, roughly 30 passenger trips per 100 park visitors.

The rider survey found high levels of satisfaction with the shuttle service. Of responding groups, 98 percent of both the HTS and the JAS reported that they were either “very satisfied” (81 percent) or “satisfied” (17 percent) with their overall experience on the shuttle. Riders similarly reported being pleased with specific features of the shuttle service including timeliness, frequency of service and number of sites covered, and ease of understanding shuttle route information and locating stops.

Results from the survey suggested two areas for improvement: improving the sound quality of the audio interpretive program and improving marketing of the shuttle. There may be significant numbers of visitors to Colonial NHP who would choose to use the shuttle system if they knew about it prior to arrival. To further improve ridership and service to visitors, Colonial NHP could market the shuttle in the following ways:

- highlight the service on the park website;
- include route maps in park brochures;
- post route maps at the shuttle stops;
- improve signage and information about the service at the Colonial Williamsburg Visitor Center; and
- publicize the service in the Historic Triangle area.

Section 4: Financial operations

Overview

The financial operations for the HTS/JAS system are divided into costs and revenue streams. Costs include expenses incurred to establish, operate, and maintain the shuttle system. Revenue streams include monies received to fund the costs.

Expenses

Costs for the HTS/JAS system may be considered as capital costs and operations and maintenance costs. Capital costs refer to expenses related to the purchase of long-term assets such as facilities, vehicles, and equipment. Operations and maintenance costs refer to expenses required to support the operation of the transit service and the maintenance of vehicles. Operating expenses generally include drivers' salaries and benefits, fuel, vehicle repairs, and administrative costs.

Capital costs

A fleet of seven Orion CNG shuttles operate on the HTS and JAS routes. Purchased new in 2005, the vehicles were approximately \$360,000 each and were the only major capital expenses for the shuttle system. A detailed description of the capital costs is shown in Table 8. The shuttles were paid for with congressional appropriations funded through the FTA Section 5309 grant program. The FTA Section 5309 grant program funds the construction of new fixed guideway systems or extensions of an existing system. This program provided 80 percent of the costs with the remaining 20 percent provided by CWF as the local match.

Table 8
HTS/JAS capital costs (FY 2008)

Source: Williamsburg Area Transport

Capital cost description	Quantity	Each	Total
Orion VII Heavy Duty 40 ft. low floor CNG shuttle with John Deere 8.1L CNG engine and Voith Model D864 3E 4 speed transmission	7	\$359,698	\$2,517,886
Electronic GFI Genfare Odyssey Registering Farebox (includes installation)	7	\$15,000	\$105,000
Sportworks Northwest Inc. Bike Racks	7	\$302	\$2,114
Total			\$2,625,000

Operations and maintenance costs

Colonial NHP has an annual service contract with CWF to operate the HTS/JAS shuttle system. The agreement is a fixed fee contract where Colonial NHP is charged a flat rate for operating the system's three routes: the Jamestown HTS, the Yorktown HTS, and the JAS.

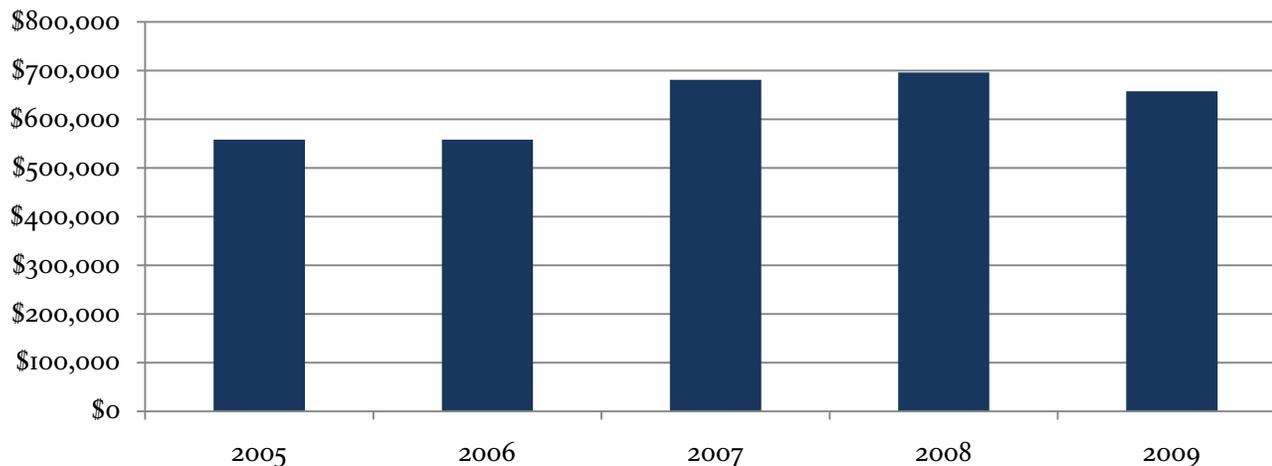
The operations and maintenance costs paid by Colonial NHP to CWF is based on a cost projection made by CWF at the beginning of each fiscal year rather than actual expenses incurred from operating the system. This model is acceptable to Colonial NHP and CWF because CWF does not have the accounting resources necessary to implement a fee-for-service contract. However, CWF does make adjustments in the contract fee to account for variability in certain operating expenses, such as fuel prices.

The total operations and maintenance invoice for HTS/JAS in FY 2009 was \$657,385. A history of total annual operating and maintenance expenses is shown in Figure 32. The total annual operating and maintenance fees increased 22 percent between 2006 and 2007 and increased by 2.2 percent between 2007 and 2008. The significant cost increase in 2007 can be attributed to the 400th Anniversary of Jamestown, a

year in which where the shuttle system supported a record number of visitors. The HTS/JAS has an operating cost of \$73 per hour and costs roughly \$6 per passenger per trip¹⁰ (or \$1.10 per park visitor¹¹) to operate.

Figure 32
Annual cost of HTS/JAS operations and maintenance

Source: NPS and Volpe Center



The annual operations and maintenance costs shown in Figure 32 cover expenses for driver salaries, fuel, vehicle maintenance, and driver training. The largest portion of the budget is set aside for driver salaries and benefits, which accounts for approximately 43 percent of the total budget. The second greatest expense is vehicle maintenance, accounting for approximately 32 percent of the total budget. A comprehensive breakdown of the budget by expense category is shown in Table 9.

Table 9
Operations and management budget, FY 2009

Source: CWF

Cost description	FY 2009	% of total cost
Driver salaries and benefits	\$ 283,559	43.1%
Vehicle maintenance	\$ 210,394	32%
Fuel	\$ 43,281	6.6%
Cleaning crew salaries and benefits	\$ 33,577	5.1%
Other	\$ 29,564	4.5%
Equipment and supplies	\$ 28,390	4.3%
Training and instruction	\$ 25,220	3.8%
Vehicle washing	\$ 3,400	0.5%
Total	\$ 657,385	100%

As previously stated, CWF does not track actual operations and maintenance costs by route. To estimate operations and maintenance costs for each route, the Volpe Center used daily vehicle hours for each route to estimate a percentage of operations and maintenance costs each shuttle route represented, shown

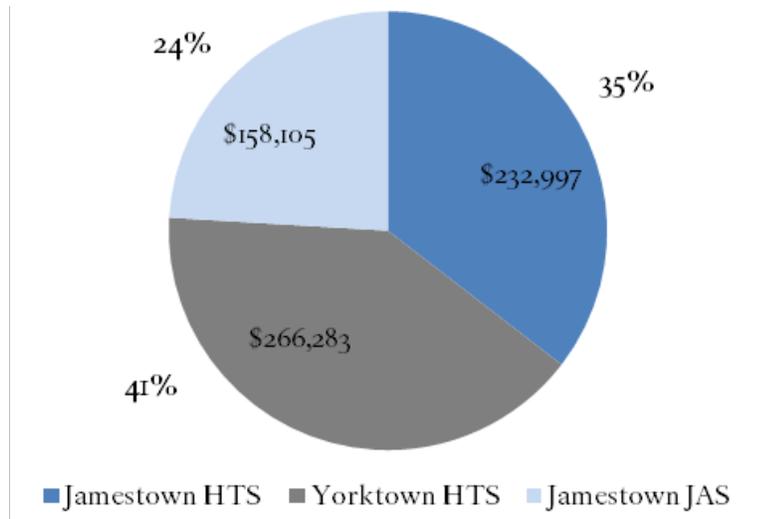
¹⁰ Interview with Danny McDaniel, October 21, 2008.

¹¹ 2.6 million estimated combined visitors divided by total operations and maintenance cost, \$2.9 million, 2003-2008.

in Figure 33. The daily hours of operation (and therefore the costs) are greatest for the Yorktown HTS because one of its vehicles operates the last service departing Yorktown Battlefield back to the Colonial Williamsburg Visitor Center. The Jamestown HTS does not use either of its vehicles to operate the last service departing from the Historic Jamestowne area back to the Colonial Williamsburg Visitor Center. Instead, the JAS vehicle operates the final Jamestown HTS service after the JAS conducts its final loop and departs for Colonial Williamsburg Visitor Center at 5:25 p.m.

Figure 33
System as percentage of total operations and maintenance costs, FY 2009

Source: WAT and Volpe Center



Revenue sources

The shuttle service was initially funded through federal grants and continues to rely entirely on federal funding for ongoing operations and maintenance expenses.

Federal Transit Administration (FTA) Section 5309 grant program

Colonial NHP received capital from a congressional appropriation funded through the FTA Section 5309 Grant Program.¹² Congress allocated over \$1.4 million to the “Jamestown/Yorktown and Williamsburg CNG shuttle” in 2001 through a Section 5309 grant. Congress allocated \$990,029 to “Colonial Williamsburg CNG shuttles” through a Section 5309 grant in 2002. The allocations, totaling \$2,457,096, were obligated in 2003 and used by WAT to cover 80% of the purchase cost of the shuttles. CWF provided the 20 percent local match required by the FTA Section 3509 grant program to complete the purchase.

Federal congressional appropriations

To operate and maintain the shuttle shuttles, NPS received the congressional appropriations listed in Table 10. Congress allocated these appropriations to Colonial NHS in advance of the 400th Anniversary of Jamestown in 2007. Given current operating and maintenance costs, \$50,000 to \$80,000 of these appropriations are expected to remain at the end of September 2010.

¹² FTA (2003). Prior Year Unobligated Section 5309 Bus and Bus-Related Allocations Table 9A. Accessed on August 20th 2009 at http://www.fta.dot.gov/funding/apportionments/grants_financing_3113.html

Table 10**Federal appropriations for the operations and maintenance of the HTS and JAS shuttles**

Source: NPS and CWF

Fiscal Year	Amount	Funding Source	Description
2003	\$102,450	Public Lands Highway Discretionary (PLHD) Program ¹³	Operate shuttle demonstration in 2004
2004	\$160,621	Consolidated Appropriations Act, 2004, Section 115 Funds ¹⁴	Operate shuttle demonstration in 2005
2005	\$558,074	Consolidated Appropriations Act, 2005, Section 117 Funds ¹⁵	Operate shuttle in 2006
2006	\$680,555	Federal Lands Highway (FLH) High Priority Projects (HPP) designated in SAFETEA-LU Sections 1701 and 1702 ¹⁶	Operate shuttle in 2007
2007	\$695,996	FLH HPP designated in SAFETEA-LU Sections 1701 and 1702	Operate shuttle in 2008
2008	\$657,385	FLH HPP designated in SAFETEA-LU Sections 1701 and 1702	Operate shuttle in 2009
2009	\$641,571	FLH HPP designated in SAFETEA-LU Sections 1701 and 1702	Operate shuttle in 2010
Total	\$3,496,652		

Conclusion

Since the inception of the shuttle system in 2004, all operations and maintenance expenses have been funded directly through congressional appropriations. There is enough federal funding remaining to operate the shuttle system at the current level of service until September 2010, but unless the HTS/JAS system obtains a new source of revenue, there will be no funding available to continue the service after 2010. Colonial NHP and its partners must identify new revenue streams to continue operations at any level of service.

¹³ National Park Service. "SAFETEA-LU Earmarks for NPS FY 2006 Project Application". Earmark whitepaper 1832-2251-5049 r 2-21-06.doc. Last accessed July 25th at www.nps.gov/transportation/tmp/documents/Reauth/EarmarksSAFETEA.pdf.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Section 1101(a)(16) of SAFETEA-LU authorizes \$2,966,400,000 from the Highway Trust Fund (HTF) for each fiscal year (FY) from 2005 through 2009 for the high priority projects (HPP) listed in section 1702. Under 23 U.S.C §117(c), the amounts authorized for each HPP in section 1702 of SAFETEA-LU are to be allocated in 20 percent increments for fiscal years 2005 through 2009.

Section 5: Possible funding options

Introduction

Though the popularity of the shuttle system was found to be high among riders, the period of performance for the congressional appropriations may run out in September 2010. Since the shuttle has no other revenue streams, Colonial NHP hosted a stakeholder meeting in November 2009 in order to identify new financing strategies. The agenda for the meeting and the list of attendees are shown in Appendix B (Figure B-1) and Appendix C (Figure C-1), respectively.

The purposes of the meeting were to:

- Share the existing transportation conditions of Colonial NHP and the surrounding area as identified by the Volpe Center (previously discussed in Section 2 and Section 3);
- Present the results of a visitor survey conducted by the Volpe Center regarding the efficacy and popularity of the Colonial NHP shuttle system (previously discussed in Section 3);
- Summarize the financial needs of the shuttle as well as the local funding environment (previously discussed in Section 4);
- Identify and discuss possible funding options to support the shuttle service (discussed in this section);
- Discuss the alternative service concepts (discussed in Section 6); and
- Discuss future funding possibilities given future changes in service (discussed in Section 6 and the conclusion of this report).

The stakeholder meeting brought together representatives from existing and potential park partners to discuss the future of the HTS/JAS shuttle system. The stakeholders represented a range of groups, including park partners, local government, and local transit authorities. Stakeholders present at the meeting included Preservation Virginia, WAT, York County, James County, CWF, and the City of Williamsburg.

The meeting provided an opportunity for stakeholders to suggest possible funding sources and to discuss whether they would be willing to contribute financial support to the shuttle system. During the discussion, it became clear that available funding sources are limited at best and that it would be difficult for local stakeholders to provide the funding needed to continue the service as it currently exists. Most stakeholders pointed to the poor economic climate as having a negative impact on their organizations' budgets, making it even more unlikely for them to contribute financially.

Based on the output from the meeting, several sources of possible funding scenarios are introduced below. The options along with their opportunities and challenges are discussed in the remainder of this section.

Funding Option 1 (FO01) – Use remaining congressional appropriations to fund shuttle at reduced service levels

Under Funding Option 1, Colonial NHP seeks clarification about the use of remaining congressional appropriations beyond September 2010 to finance the shuttle system at reduced levels of service. Current operations cost approximately \$660,000 annually. At the end of the 2010 operating season, the shuttle will have between \$50,000 and \$80,000 remaining in congressional appropriations. Colonial NHP could stretch the remaining funding over the next two operating seasons (2010 and 2011) to continue the shuttle system until new sources of revenue are secured. Funding Option 1 would require Colonial NHP to reduce the level of service and decrease operating and maintenance expenses of the shuttle system.

Challenges

Colonial NHP and NPS must obtain clarification about whether they may continue using the congressional appropriations beyond September 2010. It is unclear to whom to make this request. The appropriations were championed by Senator John Warner (R-Va) who has since left office. Once NPS identifies the proper office to ask for clarification, the possibility exists that the funds must be used by end of fiscal year 2010.

Even if the congressional appropriations may be spent following September 2010, reductions in operating budget will result in decreased levels of service and accessibility for park visitors who rely on the shuttle for transportation. Furthermore, Funding Option 1 does not secure a long-term funding source.

Advantages

Funding Option 1 provides Colonial NHP with more time to pursue and secure another financing option without halting shuttle operations.

Funding Option 2 (FO02) – Include a transportation charge in entrance fees

Although the HTS/JAS shuttle system serves Colonial NHP visitors, no portion of entrance fee revenues are used to fund the shuttle. Colonial NHP requires visitors to pay per-person entrance fees, which are summarized in Table 4. Entrance fees are collected inside the Historic Jamestowne and Yorktown Battlefield Visitor Centers. Prior to 2007, entrance fees at Historic Jamestown were collected at an external fee booth located just before the Glasshouse parking lot entrance. Visitors seeking access to the island and Glasshouse were required to pay the park entrance fee. With entrance fees now charged at the Visitor Center, visitors may visit Glasshouse and the Jamestown Island Loop without paying a fee.

Approximately 400,000 people visited Colonial NHP in 2008. Roughly 38 percent of these visitors actually paid an entrance fee because the other 62 percent of visitors were either children or seniors, were covered by the annual pass, or have simply avoided paying the fee.¹⁷ Given this ratio, a \$2 transportation fee (produced either through an entrance fee increase or taken from existing entrance fees) could result in approximately \$300,000 in transportation fee revenues.

Under the current fee policy, however, Colonial NHP keeps only 32 percent of all entrance fee revenues it receives because of existing revenue sharing commitments. As a park participating in the recreational fee demonstration program, Colonial NHP is required to allocate 20 percent of its fee revenues to NPS. The remaining 80 percent is then shared between Colonial NHP and its multiple park partners as shown in Figure 34. NPS began the fee demonstration program in 1996 and continued it under the 2005 Federal Lands Recreation Enhancement Act, which allows parks to charge fees to visitors.¹⁸ Generally, parks that do not participate in the program operate as “fee-free” parks and do not charge entrance fees. There has been discussion about transitioning Colonial NHP to a fee-free park, but whether this will occur is uncertain.

Funding Option 2 suggests Colonial NHP include a transportation fee in its entrance fees. As a strictly-defined transportation fee, Colonial NHP would be able to keep 100 percent of the revenue generated through Funding Option 2 rather than sharing it with NPS and existing park partners. The park could allocate \$2 of every \$10 entrance fee (20 percent) or initiate a \$2 increase in all entrance fees to help fund ongoing operations and maintenance expenses. The \$2 amount is suggested because Colonial NHP will be able to increase its entrance fee by \$2 in 2012 from \$10 to \$12 per person.

The \$300,000 in revenue generated from a transportation fee would cover almost 50 percent of the current system’s operations and maintenance costs. Other national parks collect a transportation fee as part of an entrance fee to fund continuing operations and maintenance costs of their shuttle systems. For example, the Roosevelt-Vanderbilt national historic sites provide a fare-free shuttle service, the Roosevelt Ride, to its visitors. Once federal grant funding runs out for the Roosevelt Ride, the Roosevelt-Vanderbilt

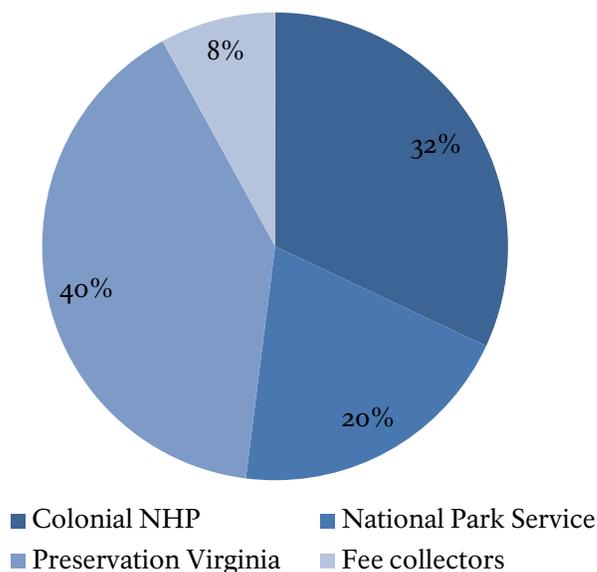
¹⁷ Workshop to Discuss Alternative Funding Scenarios and Service Options. The Volpe Center. November 10, 2009.

¹⁸ National Park Service Recreation Fee Program, <http://www.nps.gov/feedemo/>

national historic sites are planning to use a transportation fee to fund the continuation of the service (see Appendix D).

Figure 34
Colonial NHP entrance fee revenue sharing

Source: NPS and Volpe Center



Challenges

There are several challenges to including a transportation fee in entrance fees for the shuttle service. Increasing entrance fees increases the risk of pricing out park visitors. Some visitors who are willing to pay a \$10 entrance fee may be unwilling to pay \$12. Although Colonial NHP has not analyzed the price point that park visitors are willing to accept, there is the potential for a decrease in visitors due to a price hike.

Since this revenue source relies on visitation, there could be variability in the actual revenue amount generated. Annual park visitation varies. Low visitation volumes could result in less than expected revenues, forcing the park to rely on other sources of financing to fund shuttle operations. There is no guarantee that visitation will remain at the 2008 levels.

Finally, if Colonial NHP transitions from a fee demonstration park to a fee-free park, all entrance fees would be eliminated and the park would have to rely on its own operating budget as a primary funding source for its transportation system.

Advantages

There are many examples for adding a transportation fee to entrance fees as a way to fund transportation within national parks. Most national parks that provide alternative transportation systems use transportation fees to fund ongoing operations and maintenance expenses. Although parks use federal and state grant funding for initial capital expenses, many parks look to entrance fees as a source of revenue once initial grant funding becomes unavailable for operations and maintenance. Transportation fees offer a long-term revenue stream while congressional appropriations or grants tend to be short term solutions for new systems. Funding Option 2 presents a larger amount of additional revenue than any other single Funding Option discussed. As a dedicated transportation fee, Funding Option 2 allows Colonial NHP to keep 100 percent of the revenue generated.

Funding Option 3 (FO03) – Renegotiate revenue sharing with NPS

Colonial NHP currently contributes 20 percent of all collected entrance fee revenues to NPS. Funding Option 3 suggests requesting alteration of the existing fee revenue sharing structure with NPS so that Colonial NHP can keep more of its entrance fee revenues. If NPS can decline its 20 percent share of entrance fee revenues, then Colonial NHP can use 100 percent of its fee revenues to share with its remaining park partners. This new revenue sharing arrangement would allow Colonial NHP to keep 52 percent of all entrance fees, versus the 32 percent that it keeps currently.

Assuming a portion of entrance fee revenues would be set aside for transportation funding (\$2 per entrance fee), Colonial NHP would be able to keep approximately \$160,000 (52 percent of \$300,000) in additional fee revenue per year under this new revenue sharing structure, assuming steady visitation rates. This estimate also assumes that the existing revenue sharing arrangements with the other park partners remains the same.

A revised allocation of revenues could operate as a temporary arrangement, spanning only two to three years, to help fund the continuation of the service until additional sources of funding, such as a fee increase or transportation fee, are implemented.

Challenges

NPS Washington Office would have to approve this fee allocation arrangement, which is unprecedented. Reaching this agreement is unlikely under current conditions since there is discussion within NPS that the 80/20 percent split between fee demonstration parks and NPS could be decreased for parks to 60/40. If such a change in the fee demonstration program occurs, Colonial NHP has indicated it may reevaluate whether it will continue to participate in the program.

Advantages

Reducing NPS revenue share allows Colonial NHP to keep more of its entrance fee revenues, which can then contribute to funding the shuttle system. Even though Funding Option 3 would not cover all operating and maintenance costs, it is a viable option that could be used in conjunction with other funding sources.

Funding Option 4 (FO04) – Allocate park budget

Under Funding Option 4, Colonial NHP would allocate a portion of its annual operating budget to fund the shuttle service. Discussions with park management at the stakeholder meeting revealed that up to \$100,000 could be set aside for funding the HTS/JAS shuttle system. Funding Option 4 would depend on Colonial NHP's current financial position and its ability to reserve a percentage of its own budget without negatively impacting any financial needs for park operations and maintenance. It is important that any change to the park's budget does not negatively affect other funding needs and corresponds with the park's long term management plan.

Challenges

The major challenge to Funding Option 4 is that the funding would reduce the park's budget for other non-shuttle related expenses. The costs of operating the shuttle service may increase while the park budget remains flat or is reduced. The feasibility of Funding Option 4 will depend on complementary financial participation park partners and Colonial NHP's ability to divert funds from its park budget to the shuttle. Doing so will require approval from park management, which may be unlikely given the park's current budget constraints.

Advantages

By financially contributing to the shuttle, Colonial NHP would demonstrate its commitment and support for the HTS/JAS system. This may encourage other park partners to commit to the service and possibly

offer funding. Also, \$100,000 represents a significant amount of funding for the shuttle system and could fund almost 30 percent of the budget for the existing level of service.

Funding Option 5 (FO05) – Obtain new federal funding

Under Funding Option 5, Colonial NHP would attempt to obtain federal funding through existing FTA grant programs, and the Paul S. Sarbanes Transit in Parks (TRIP) program. Due to the competitive and/or uncertain nature of these sources, the amount and likelihood of new federal funding is undetermined.

FTA Grant Programs

There are a number of FTA programs that provide a wide range of financial assistance. These programs include:

- FTA Section 5303 Metropolitan Planning;
- FTA Section 5304 Statewide Planning;
- FTA Section 5307 Large Urban Areas Program;
- FTA Section 5310 Transportation for Elderly Persons and Persons with Disabilities;
- FTA Section 5311 Rural and Small Urban Areas;
- FTA Section 5316 Jobs Access and Reverse Commute Program (JARC); and
- FTA Section 5317 New Freedom Program.

The operation and maintenance of the HTS/JAS system is only eligible for the FTA Section 5307 program. Most of the other FTA programs are reserved for planning expenses, rural areas, new or expanded transportation systems, capital expenses, and improving transportation access. WAT currently receives funding from Section 5307. This FTA program is a formula grant that funds capital and operating assistance in urbanized areas with a population of 50,000 or more and requires a local match. CWF does not receive any of this funding for the HTS/JAS shuttle service, which it operates. One possibility is for CWF to negotiate with WAT to receive a portion of this funding specifically for the HTS/JAS system, although it is not clear whether this is possible and for what amount of funding this is appropriate.

Paul S. Sarbanes Transit in Parks (TRIP) program

The Paul S. Sarbanes Transit in Parks (TRIP) program, FTA Section 5320, is a federal grant program that funds capital and planning projects supporting alternative transportation systems in national forests, parks, and other federal lands. TRIP funds can be used for the capital expenses of a shuttle system, which includes the leasing of vehicles and equipment. Fort Clatsop at Lewis and Clark National Historic Park uses TRIP funding to lease its vehicle, allowing it to provide its shuttle operations. Fort Clatsop receives approximately \$50,000 from the TRIP Program for this purpose. It may be possible that Colonial NHP could apply for the TRIP Program and secure grant funds to lease its vehicles. The TRIP program does not fund operating expenses for alternative transportation systems.

Challenges

Colonial NHP's shuttle system is likely not eligible for most of the federal programs described above. These programs are primarily used to start new service or expand existing service, and the HTS/JAS is neither. Furthermore, the federal government typically does not fund ongoing operations and maintenance of transit systems. A change in this policy would be a major shift in philosophy and policy, and Colonial NHP should not count on this as a near-term solution.

Advantages

If Colonial NHP were able to take advantage of a federal funding source that covered all or portions of ongoing operations and maintenance, the park and its partners would be proportionally less responsible for funding the shuttle system themselves.

Funding Option 6 (FO06) – Obtain state funding

Colonial NHP is eligible to apply for state grant funding from the Virginia Department of Rail and Public Transportation (DRPT). Grant funds administered by the DRPT generally provide support for capital, operating, or planning expenses for public transportation systems.¹⁹ Most programs target services provided by public organizations and local governments, however, some funds are available to support services provided by private non-profit organizations.

The DRPT administers eight State Aid Grant Programs:

- Operating Assistance;
- Capital Assistance;
- Demonstration Assistance;
- Technical Assistance;
- Public Transportation Intern Program;
- TDM /Commuter Assistance;
- Transportation Efficiency Improvement Fund (TEIF) Projects; and
- Senior Transportation Program.

Similar to federal aid, state aid programs often have a matching ratio, or amount of grant funding available as a percentage of the total project cost. For many programs, the limited availability of resources forces a matching ratio that is much lower than the statutory limit. For example, the DRPT's Operating Assistance program funds up to 95 percent of eligible expenses, but the actual matching ratio has been much lower, averaging between 40 percent and 50 percent of eligible expenses.²⁰ Also, many of these programs are limited to the reimbursement of eligible expenses and do not provide up front working capital.

Currently, the HTS/JAS system does not receive any state aid grant program assistance. CWF receives operating assistance funds from the state through its transit partner, WAT, although none of it is directed towards the HTS/JAS shuttle service. Since CWF already receives state program funds, Colonial NHP must renegotiate to allocate some of these funds towards the HTS/JAS service.

Challenges

The current economic climate makes it difficult to obtain new funding through state programs. According to sources at the DRPT, there are planned reductions in grant assistance to local transportation agencies because of an overall reduction in state revenues. The state is looking to reduce their operating assistance to local public transit service by seven to eight percent in 2010.²¹ This decrease in local assistance would represent the first major reduction in 25 years and will likely force some local transit agencies to cut or reduce service on their regular fixed routes that serve the public transportation needs of their community. Given this context, it would be difficult for Colonial NHP to argue for state funds to support a seasonal service that primarily serves recreational visitors. In addition, many of the state programs require a local match. Given the stressed budgets of local city and county governments in the region, an appropriate local match may not be available.

Advantages

State grant funding can offer a longer term source of revenue for the HTS/JAS system. In addition, a stronger relationship with the state transportation agency can provide a foundation for local support for the shuttle system.

¹⁹ Ibid.

²⁰ Ibid.

²¹ Conversation with Darrel Feasel, Small Urban & Rural Sections Manager, DRPT. November 2009.

Funding Option 7 (FO07) – Reallocate operating assistance program funds to HTS

WAT currently receives funding from DRPT through the Operating Assistance program. Under this program, state funds are awarded to existing providers of public transportation service for operating expenses. Eligible operating expenses generally include the cost of administration, fuel, tires, and maintenance parts and supplies. The amount of financial assistance allocated is based on a formula using the total operating expenses incurred by the service provider during the most recent fiscal year.

WAT includes the annual vehicle miles and annual vehicle hours from the CWF shuttle service (including the HTS/JAS) in its operating statistics. Through a negotiated agreement, CWF receives a percentage of the state operating assistance funds that WAT receives on an annual basis. This amounts to approximately \$110,000 per year. The program requires a local match, which is currently provided by James City County, York County, and the City of Williamsburg, as well as a minor amount from CWF.

Funding Option 7 allocates part of the state operating assistance funds that CWF receives from WAT to the HTS/JAS shuttle system. Approximately \$20,000 could be set aside for the HTS/JAS service on an annual basis, however, this would reduce operating assistance funds it currently allocates to its main system, the HAS.²² If Colonial NHP wishes to obtain a portion of these funds, it needs to negotiate this point in its next contract with CWF.

Challenges

Reallocating operating assistance funds for the HTS/JAS shuttle system diverts funding from CWF's primary service, the HAS. CWF will not allocate more funding to the HTS/JAS than it can spare from the HAS.

Advantages

Funding Option 7 would require a relatively simple change to the existing service agreement between CWF and the Colonial NHP. The change would likely allocate a portion of the total operating assistance funds CWF receives with a formula based on passenger trips or vehicle mileage.²³

Funding Option 8 (FO08) – FTA capital maintenance funding reimbursement

CWF receives reimbursement for past maintenance expenses as part of an FTA grant program. This reimbursement funds capital maintenance receipts two years after they are incurred. Program funds are directly allocated to Hampton Roads Transit, the regional transit organization, where approximately five percent of the total grant funds are then passed through to WAT. A negotiated percentage of these funds are then passed on from WAT to CWF.

The existing service agreement between Colonial NHP and CWF does not allow CWF to receive maintenance expense reimbursement for the HTS/JAS service. As discussed earlier, the service agreement for operating the HTS/JAS system is a fixed-fee or flat-rate contract based on cost projections. This contract represents a direct revenue stream for CWF. This arrangement does not provide a detailed account of actual maintenance expenses incurred, which prevents CWF from being reimbursed for them.

Funding Option 8 requires renegotiation of the existing service agreement between Colonial NHP and CWF to reflect a cost-based or time and materials contract. Under this type of agreement, Colonial NHP would only be charged for the actual expenses of the HTS/JAS system and billed accordingly. Having a detailed account of maintenance expenses allows CWF to receive reimbursement through the FTA grant program and pass this reimbursement on to Colonial NHP. By doing this, it is possible to achieve maintenance expense reimbursements, but the exact amount is unclear.²⁴

²² Ibid.

²³ Conversation with Danny McDaniel. Colonial Williamsburg Foundation. November 2009

²⁴ Workshop to Discuss Alternative Funding Scenarios and Service Options. The Volpe Center. November 10, 2009.

Challenges

Funding Option 8 presents a major challenge by requiring a revision of the existing service agreement between Colonial NHP and CWF. Moving to a cost-based or time and materials contract would require significant effort towards the invoicing and accounting of expenses. Work on this contract would become more complicated and possibly require additional staff, such as an accountant. The additional resources necessary to implement the changes could possibly exceed the value of the maintenance expense reimbursements. CWF has indicated these changes would be too complicated for it to make. If Colonial NHP wishes to pursue these reimbursements, it may be forced to find another transit operator for the HTS/JAS system.

Advantages

Transitioning to a cost-based or time and materials contract provides a more accurate account of the maintenance expenses of the system. This allows Colonial NHP and CWF to better track the expenses of the system based on actual costs and usage and would allow the HTS/JAS shuttle system to receive FTA capital maintenance funding reimbursement.

Funding Option 9 (FO09) – Charge a shuttle fare

Colonial NHP could institute a nominal fare for riders of the transportation system. Funding Option 9 produces a dedicated revenue stream to fund the ongoing operations and maintenance costs for the shuttle service. The fare would have to represent an amount that is not prohibitively expensive and would not deter visitors from using the service. Some national parks do charge a fare for their transit services. For example, Freedom Transit is a bus shuttle service that provides transportation to visitors within the Gettysburg Military National Park and connects different points in historic downtown Gettysburg. This service charges a \$1 fare for the shuttle and sells fare passes at varying rates (see Appendix D). Although the shuttle service receives funding from a range of sources, the shuttle fare does provide an additional source of revenue.

Challenges

A fare must be set low enough to avoid deterring potential riders but high enough to be a viable cost recovery tool. After discussions with stakeholders, it was clear that Funding Option 9 would not generate a significantly large amount of revenue, but could be used as a supplemental financing tool. Stakeholders agreed that a nominal amount, such as \$1 per person per trip, may be acceptable to visitors; however, this would generate only about \$50,000 on an annual basis.²⁵ Fare revenue would also depend on the fare structure used for the service. Instead of charging \$1 per person per trip, charging \$1 per rider or not charging for children and/or senior citizens could result in revenue less than the \$50,000 estimate.

Advantages

Unlike using a portion of entrance fees or charging a transportation fee, fares are true user fees. Only the people who use a service pay for it. The shuttle shuttles are already outfitted with fareboxes, thus the capital cost of fare collection has already been covered.

Funding Option 10 (FO10) – Implement parking fees

Funding Option 10 is to implement a parking fee at each of the Colonial NHP and partner attractions. A fee could be charged per private vehicle either on a daily or hourly basis. The exact amount of revenue possible from Funding Option 10 is unclear, but Funding Option 10 does bring another source of revenue for the system and incentivizes visitors to use the HTS/JAS shuttles.

Colonial NHP manages a total of 671 parking spots at the Historic Jamestowne and Yorktown sites. The park partners, CWF and JYF, manage over 2,100 parking spots at the Colonial Williamsburg Visitor

²⁵ Workshop to Discuss Alternative Funding Scenarios and Service Options. The Volpe Center. November 10, 2009.

Center, Jamestown Settlement, and Yorktown Victory Center. Funding Option 10 would be most effective if the park partners also implemented a parking fee. If Colonial were to implement a parking fee and its partners declined to follow suit, visitors to Colonial NHP could be incentivized to park in partners' parking lots and rides the HTS/JAS to Colonial NHP site. CWF charged a parking fee that resulted in significant revenues in the past.

Other national parks have instituted parking fees as a way to raise revenue. Gateway National Recreation Area charges a \$10 per vehicle parking fee for parking in the Sandy Hook Unit between Memorial and Labor Day; however, Sandy Hook does not also charge an entrance fee.

Challenges

Park partners, CWF and JYF, must be willing to implement a parking fee in order for Funding Option 10 to be most successful. Based on previous discussions with the park and at the stakeholder meeting, this seems unlikely. Funding Option 10 is unpopular with many stakeholders, making it a difficult option to pursue.

Advantages

Parking fees would incentivize visitors to use the shuttle instead of their private vehicle, which presents several benefits. Decreasing private vehicle usage can help reduce negative environmental impacts and enhance the visitor experience. Visitors can experience the interpretation on the shuttle that is not available in private vehicles.

Funding Option 11 (FO11) – Local government funding

According to discussions with local government representatives, there is currently no opportunity for local funding. Although the local governments of York County, James City County, and the City of Williamsburg could someday provide funding to assist with the service, the general opinion is that this would be highly unlikely given the current economic climate. The cities and counties are struggling with funding their own expenses and have little capacity for additional expenses.

The possibility of using the current hotel tax is not currently possible because the legislation that authorizes the tax requires that any revenues generated by it must be used for destination marketing. Using this tax for the transportation service would require an act of the state legislature and would entail a significant public process with little chance of success.

Challenges

Local governments believe that Funding Option 11 is not viable at this time. Given the difficult economic climate, county and city governments do not have any funding available for new expenses.

Advantages

Local government support could help close the funding gap and highlight the importance of the shuttle and Colonial NHP to the community.

Funding Option 12 (FO12) – Pursue private sector funding

Several national parks rely on corporate sponsorships to help fund their transportation system. For example, Acadia National Park receives approximately \$200,000 annually from L.L. Bean to sponsor their Island Explorer Shuttle System²⁶ as described in Appendix D.

²⁶“Island Explorer Short Range Transit Plan.” Prepared for NPS and Maine DOT. Prepared by Tom Crikelair Associates. May 21, 2007.

Colonial NHP may investigate a sponsorship opportunities with private sector entities in Virginia and northeastern North Carolina. Advertising on rack cards and the inside of the shuttles may act as incentives for corporate sponsorship.

Challenges

Few if any private sector entities are directly served by the HTS/JAS shuttle system. Thus, Colonial NHP may have difficulty securing private sponsorship.

Advantages

Partnering with a private sector entity could provide greater visibility for the shuttle service and could complement existing marketing efforts.

Funding Option 13 (FO13) – Park partner contributions

Colonial NHP partners Preservation Virginia and JYF, have not contributed towards funding the shuttle service. Managed by JYF, the Jamestown Settlement and Yorktown Victory Center sites are both served by the HTS/JAS shuttle system, and though some visitors to the JYF sites are realizing the benefits of Colonial NHP's shuttle system, JYF does not contribute financial resources to the shuttle.

Under Funding Option 13, Colonial NHP could work with partners to introduce partner contributions for the shuttle system. JYF could be asked to make a financial commitment to the shuttle because the shuttle directly serves JYF's visitors.

Colonial NHP could also renegotiate its revenue sharing arrangement with Preservation Virginia so that it can keep any increase in entrance fee revenues to fund the HTS/JAS shuttle. Assuming that the park enacts a \$2 increase in its entrance fee to support the transportation service, Preservation Virginia could decline its revenue share for the added revenue. This would allow Preservation Virginia to maintain its 40% revenue share of existing entrance fees and allow Colonial NHP to keep 72 percent of the revenues related to the \$2 increase in entrance fees. This new revenue sharing arrangement could potentially raise \$220,000 in additional revenues for transportation funding. This assumes that the revenue sharing agreements with the other park partners (NPS and fee collectors) would remain unchanged.

The JYF has expressed that it is unlikely to financially support the shuttle system. However, this stance may someday change with a change in JYF's senior management and an improvement in economic climate.

Challenges

Preservation Virginia and JYF have not expressed any interest in contributing financially to the HTS/JAS shuttle system even though they are directly served by the system. If the HTS/JAS system is discontinued or significantly scaled back, JYF's and Preservation Virginia's visitors may not be able to continue to benefit from the transportation service.

Advantages

Financial contributions by JYF and Preservation Virginia to operations and maintenance of the shuttle system would ease the financial burden of Colonial NHP and NPS.

Summary

Funding the total operations and maintenance expense of \$660,000 will require a compilation of multiple funding sources rather than one single source or style of funding. The above funding options, summarized in Table II, can be pursued as a package offering a diverse mix of financing strategies. This would prevent the park from being reliant on one source of funding, which provides more financial stability. Although some of the above options may be possible, it seems unlikely that the park can pursue many of them given

the short timeframe before the congressional appropriations expire. The above funding options will require collaboration with park partners, local transit authorities, and other regional stakeholders, all of which requires time and effort on behalf of the park.

The most feasible option for the park at this time is Funding Option 1, using remaining congressional appropriations over the next two seasons while operating the shuttle system at a reduced level of service. By adjusting the service, Colonial NHP can continue the shuttle at lower operations and maintenance costs. Funding Option 1 maintains the survival of the shuttle service until new funding sources are identified. The next section evaluates alternative service designs that reduce the cost of the shuttle system and allow for Funding Option 1 to be possible.

Table 11
Summary of possible funding options

Source: Volpe Center

Funding Option	Description	Possible funding amount	Stakeholder support
FO01	Use remaining congressional appropriation	\$100,000	More
FO02	Include a transportation charge in entrance fees	\$300,000	Less
FO03	Renegotiate revenue sharing with NPS	\$160,000	More
FO04	Allocate park budget	\$100,000	More
FO05	Obtain new federal funding	Unknown	More
FO06	Obtain state funding	Unknown	Less
FO07	Reallocate operating assistance program funds	\$20,000	More
FO08	FTA capital maintenance funding reimbursement	\$50,000	More (if possible)
FO09	Charge a shuttle fare	\$50,000	More
FO10	Implement a parking fee	Unknown	Less
FO11	Local government funding	Unknown	Less
FO12	Pursue corporate funding	Unknown	More (if possible)
FO13	Park partner contributions	\$200,000	Less

Section 6: Alternative service concepts

Overview

Due to only limited funding being available to potentially continue the HTS and JAS, the Volpe Center worked closely with Colonial NHP to identify less expensive service alternatives. These alternatives sought to reduce annual costs in the following ways:

- Reduce weeks of service;
- Reduce daily hours of service; and/or
- Reduce days of the week that the service operates.

To evaluate each of the alternatives in terms of cost, baseline costs for the current system were calculated based on the following inputs:

- **Annual cost** – The combined annual cost of the HTS and JAS systems in FY 2009 was \$660,000. Costs are expected to increase in future years due to inflation and other factors.
- **Vehicles** – Two shuttle vehicles serve the Jamestown HTS route, two shuttle vehicles serve the Yorktown HTS route, and one shuttle vehicle serves the JAS loop route.
- **Hours and days of operation** – The HTS and JAS shuttles generally operate from 9:00 a.m. to roughly 6:00 p.m. (with a gap in HTS service in the late afternoon) every day of the week.
- **Service hours** – The two Jamestown HTS vehicles each run seven hours per day (the JAS makes the final Jamestown HTS trip for the day, thus both Jamestown shuttles finish early). The two Yorktown HTS shuttles run seven and nine hours per day, respectively (one shuttle makes the final return trip of the day). The JAS shuttle runs 9.5 hours per day (the JAS makes the final Jamestown HTS trip for the day). The total hours-per-day for all five shuttles is 39.5 hours.
- **Season** – The 2009 operating season consisted of 230 days from March 16th to November 1st.

Thus the cost per service hour and other marginal costs, shown in Table 12, may be calculated as follows:

Table 12

Marginal costs of Colonial NHP shuttle system based on 2009 annual operating cost of \$660,000

Source: Volpe Center

Service Units	Number of units in current operation	Cost per unit
Service hour	9,085	\$73
Day	230	\$2,870
Week	33	\$20,090
Vehicle	5	~ \$132,000

Feedback from Colonial NHP, partners, and other stakeholders regarding the alternative service concepts was documented and is incorporated into the presentation of the alternative service concepts found below. All calculations are based on reductions in service hours. A tabular summary of the service concepts is provided at the end of this section in Table 13.

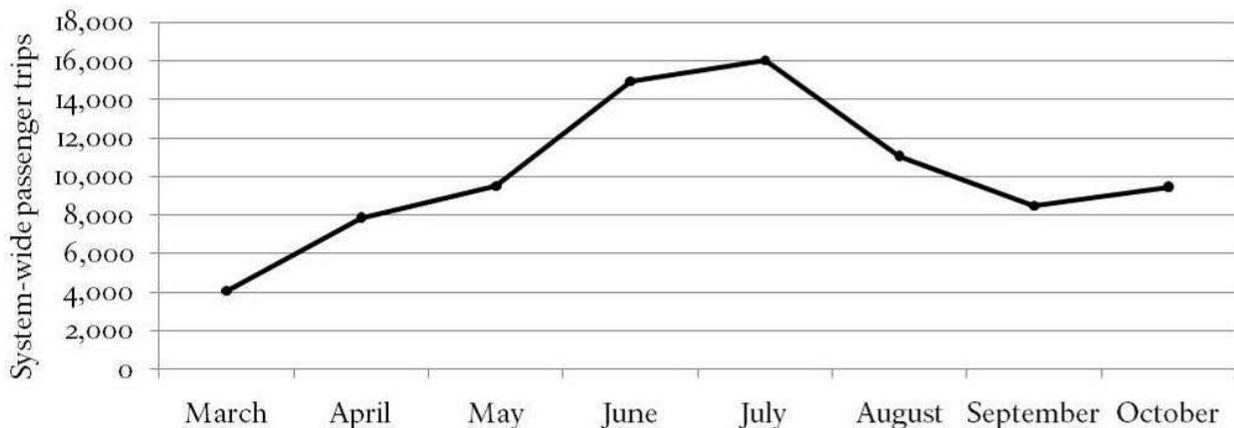
Service Concept 01 (SC01) – Reduce operating season

This concept seeks to reduce costs by shortening the operating season of the shuttle. The original intent of the concept was to shorten the operating season of all routes and shuttles, however meeting participants suggested that popular visitation in April and October necessitated continuation of the JAS during these months. Monthly passenger trips for the HTS and JAS are shown in Figure 17, Figure 19, and Figure 21. Meeting participants also agreed starting and stopping the JAS multiple times for certain weeks in April and October would be confusing for visitors. Thus this service concept, shown in Figure 35, maintains JAS service throughout the currently defined operating season and shortens the operating season of the HTS to varying degrees:

- **Service Concept 01A** – Operate the HTS from May 1st through October 31st, a reduction of seven weeks, which achieves a cost savings of \$100,000. Total estimated operating cost is \$560,000, a savings of \$100,000 over the 2009 cost.
- **Service Concept 01B** – Operate the HTS from May 1st through September 30th, a reduction of 11 weeks, which achieves a cost savings of \$160,000. Total estimated operating cost is \$500,000, a savings of \$160,000 over the 2009 cost.
- **Service Concept 01C** – Operate the HTS from May 1st through September 4th, a reduction of 14 weeks, which achieves a cost savings of \$210,000. Total estimated operating cost is \$450,000, a savings of \$210,000 over the 2009 cost.

Figure 35
Service Concept 01 alternatives

Source: NPS and Volpe Center



SC01A:	JAS March 15 – October 31 = 33 weeks HTS May 1 – October 31 = 26 weeks	Annual cost: \$560,000
SC01B:	JAS March 15 – October 31 = 33 weeks HTS May 1 – September 30 = 22 weeks	Annual cost: \$500,000
SC01C:	JAS March 15 – October 31 = 33 weeks HTS May 1 – September 4 = 19 weeks	Annual cost: \$450,000

Advantages

For visitors, the schedule changes suggested in these concepts are about as uncomplicated as the current schedule. This concept continues to provide transit service throughout each day every day of the week during the operating season. This concept reduces service hours but retains enough service hours to retain shuttle drivers who may otherwise seek employment with other employers.

Disadvantages

This concept reduces between seven and 14 weeks of line-haul service between Colonial Williamsburg and Yorktown and Jamestown. This change would force potential riders to drive their cars, which may increase parking demand beyond capacity, particularly at Historic Jamestowne. Additional car use also increases emissions of greenhouse gases and other air pollutants. Some potential riders may not have access to a car and have no transportation option during the reduced service periods. In addition to environmental disbenefits and reduction in transportation service, interpretive opportunities would be diminished.

Stakeholder feedback

Stakeholders expressed preference for this service concept.

Service Concept 02 (SC02) – Reduce hours of operations

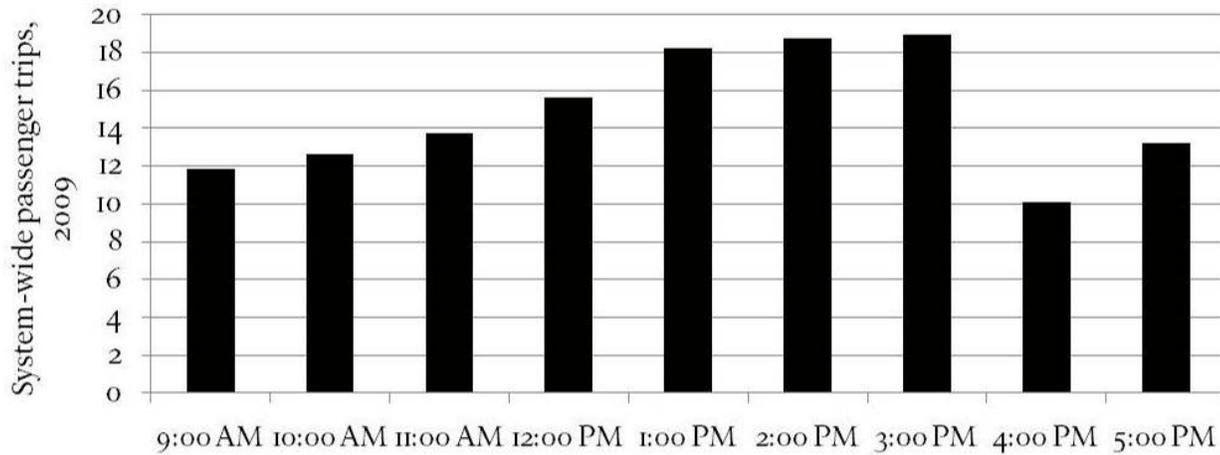
This concept seeks to reduce costs by running the entire system for fewer hours per day. As shown in Figure 36, hourly ridership tends to peak in the afternoon between 12:00 p.m. and 3:00 p.m.

The following reductions in operating hours were considered by the stakeholders:

- **Service Concept 02A** – Operate the HTS and JAS system from 10:00 a.m. to 6:00 p.m., a one-hour reduction in service and a five-hour reduction in service hours per day, from 39.5 to 34.5. This service concept reduces the annual cost to \$580,000, a savings of \$80,000 over the 2009 cost.
- **Service Concept 02B** – Operate the HTS and JAS system from 10:00 a.m. to 5:00 p.m., a two-hour reduction in service and a ten-hour reduction in service hours per day, from 39.5 to 29.5. This service concept reduces the annual cost to \$500,000, a savings of \$160,000 over the 2009 cost.

Figure 36
Service Concept 02 alternatives

Source: NPS and Volpe Center



SC02A:

10 AM to 6 PM

Annual cost: \$580,000

34.5 service hours/day

SC02B:

10 AM to 5 PM

Annual cost: \$500,000

29.5 service hours/day

Advantages

This concept is virtually the same as the current system (albeit with different hours of operations) and is uncomplicated for visitors to understand.

Disadvantages

While passenger trips do peak in the early-to-mid afternoon, number of trips in the early morning and late afternoon are relatively large, roughly 66 percent of the daily peak. Thus, though relatively fewer passengers would be affected by the service cuts, the change will not go unnoticed. In addition to environmental disbenefits and reduction in transportation service, interpretive opportunities would be diminished.

Stakeholder feedback

Stakeholders were open to exploring this concept further and suggested the possibility of combining this concept with SC01.

Service Concept 03 (SC03) – Combine of reduction in season with reduction in hours

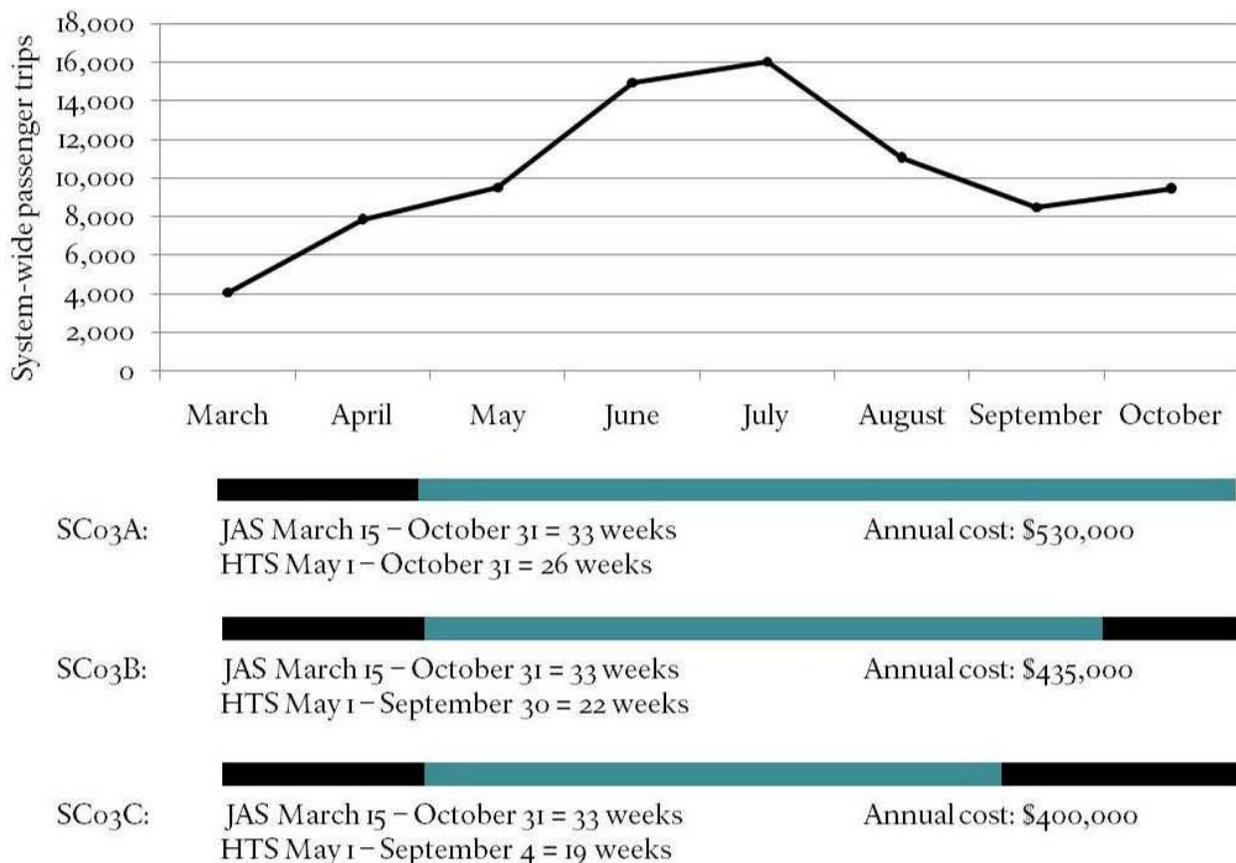
Combining SC01 with SC02 results in additional cost savings beyond either of these two concepts individually. The following service concepts, shown in Figure 37, are examples of possible combinations:

- **Service Concept 03A** – Combine SC01A and SC02A. The HTS would run May 1st through October 31st, a reduction of seven weeks. The JAS would continue to run mid-March through October. Both systems would operate from 10:00 a.m. to 6:00 p.m., a one-hour reduction in service and a five-hour reduction in service hours per day, from 39.5 to 34.5. This service concept reduces the annual cost to \$530,000, a savings of \$130,000 over the 2009 cost.

- **Service Concept 03B** – Combine SC01B and SC02A. The HTS would run May 1st through September 30th, a reduction of 11 weeks. The JAS would continue to run mid-March through October. Both systems would operate from 10:00 a.m. to 6:00 p.m., a one-hour reduction in service and a five-hour reduction in service hours per day, from 39.5 to 34.5. This service concept reduces the annual cost to \$435,000, a savings of \$225,000 over the 2009 cost.
- **Service Concept 03C** – Combine SC01C and SC02A. The HTS would run May 1st through September 4th, a reduction of 14 weeks. The JAS would continue to run mid-March through October. Both systems would operate from 10:00 a.m. to 6:00 p.m., a one-hour reduction in service and a five-hour reduction in service hours per day, from 39.5 to 34.5. This service concept reduces the annual cost to \$400,000, a savings of \$260,000 over the 2009 cost.

Figure 37
Service concept 03 alternatives

Source: NPS and Volpe Center



Advantages

Combining SC01 with SC02 may result in significant additional cost savings over either component concept alone.

Disadvantages

The effects of combining multiple types of service reductions are difficult to predict. Although it is likely that on their own, SC01 or SC02 would reduce the number of passenger trips, it is not clear whether combined service reductions would result in additive or combinatorial passenger trip reductions. In other words, it is possible the number of passenger trip reductions of a combined service reduction would be

greater than the total reductions of each of the independent reductions, and if passenger trips fall significantly, the transportation service may not be cost effective to provide. In addition to environmental impacts and reduction in transportation service, interpretive opportunities would be diminished.

Stakeholder feedback

Some stakeholders were interested in exploring such combined service concepts further, primarily as a means of cost savings. Others were apprehensive that combined service reductions may also reduce passenger trips below a threshold where it would no longer make sense to provide the service at all.

Service Concept 04 (SC04) – Reduce days-per-week of service

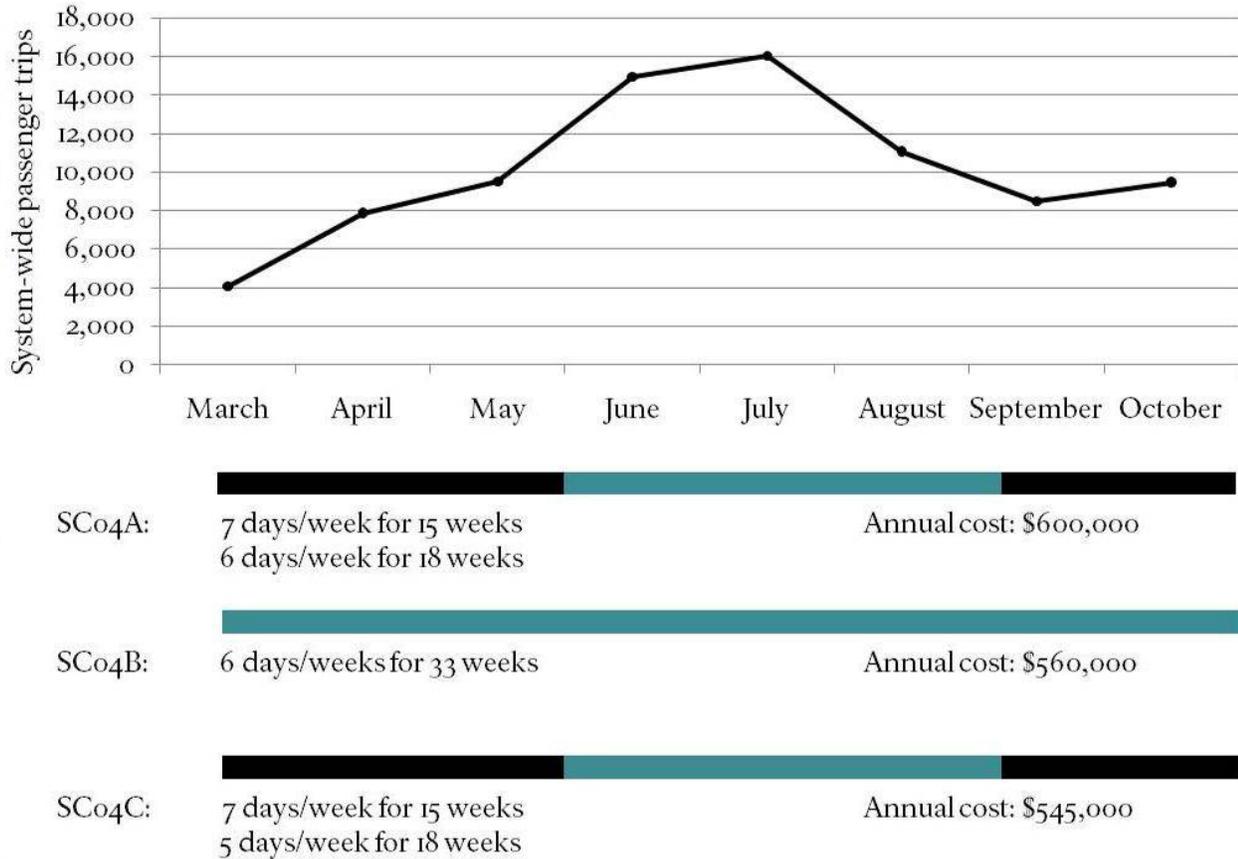
As noted in

Figure 16, the HTS and JAS are more popular on Sunday through Wednesday than on Thursday through Saturday. This service concept, shown in Figure 38, seeks to reduce costs by reducing the numbers of days per week the HTS and JAS are in operation. Because Friday and Saturday have the lowest average ridership, one or both of these days would be cut under the following variations:

- **Service Concept 04A** – Both the HTS and JAS would run six days a week, Sunday through Friday, prior to Memorial Day and after Labor Day, for a total of 18 weeks. Both the HTS and JAS would run seven days a week between Memorial Day and Labor Day, for a total of 15 weeks. This service concept reduces the annual cost to \$600,000, a savings of \$60,000 over the 2009 cost.
- **Service Concept 04B** – Both the HTS and JAS would run six days a week, Sunday through Friday, for the entire operating season from mid-March through October, for a total of 33 weeks. This service concept reduces the annual cost to \$560,000, a savings of \$100,000 over the 2009 cost.
- **Service Concept 04C** – Both the HTS and JAS would run five days a week, Sunday through Thursday, prior to Memorial Day and after Labor Day, for a total of 18 weeks. Both the HTS and JAS would run seven days a week between Memorial Day and Labor Day, for a total of 15 weeks. This service concept reduces the annual cost to \$545,000, a savings of \$115,000 over the 2009 cost.

Figure 38
Service Concept 04 alternatives

Source: NPS and Volpe Center



Advantages

This concept would result in modest cost savings.

Disadvantages

This concept would introduce variations in the operating schedule and would be more complicated to communicate to visitors than the current schedule. The cost reductions are modest but may be less than other concepts that introduce greater cost reductions at lesser inconvenience to riders. In addition to environmental impacts and reduction in transportation service, interpretive opportunities would be diminished.

Stakeholder feedback

The stakeholders expressed a general preference for consistency. Because this concept would introduce variation, or inconsistency, the group suggested it would not be practical.

Service Concept 05 (SC05) – Discontinue the Yorktown HTS

Traditionally, visitation at Historic Jamestowne is higher than that at Yorktown Battlefield. As shown in Table 5, Historic Jamestowne has fewer parking spaces than Yorktown Battlefield, and there is a history of demand for parking at Historic Jamestowne occasionally exceeding the supply of parking spaces. This service concept seeks to reduce costs by eliminating shuttle service to Yorktown. The concept would

decrease daily service hours by 16 hours, from 39.5 to 23.5 hours, and reduce annual costs to \$395,000, a cost savings over 2009 of \$265,000.

Advantages

This concept results in a significant cost reduction of over 40 percent.

Disadvantages

Despite generating significant cost savings, this concept would force all potential riders to reach Yorktown Battlefield in personal automobiles. In addition to generating negative environmental impacts, this concept would create additional congestion on the Colonial Parkway and in Yorktown. This concept would deprive potential riders of the interpretive program currently available on the Yorktown HTS.

Stakeholder feedback

Stakeholders generally did not prefer this concept. One stakeholder commented that choosing to drop either Jamestown or Yorktown HTS would be arbitrary and that both sites should have similar service.

Service Concept 06 (SC06) – Discontinue the Jamestown and Yorktown HTS

As shown in Figure 10, the number of passenger trips for the JAS is higher than that of the Yorktown HTS and similar to or higher than that of the Jamestown HTS. This concept seeks to reduce costs by eliminating both the Jamestown and Yorktown HTS routes. Because the JAS shuttle would not be required to make the final HTS return trip in the afternoon, the JAS hours could be reduced to eight hours each day. This concept would decrease daily service hours by 31.5 hours, from 39.5 to eight hours, and reduce annual costs to \$135,000, a cost savings over 2009 of \$525,000.

Advantages

This concept results in a significant cost reduction of almost 80 percent compared with 2009 costs.

Disadvantages

Despite generating significant cost savings, discontinuing HTS to both Jamestown and Yorktown would force all potential riders to reach both areas in personal automobiles. In addition to generating negative environmental impacts, this concept would create additional congestion on the Colonial Parkway and in Yorktown. This concept would deprive potential riders of the interpretive program currently available on the HTS. Eliminating HTS service to Historic Jamestowne in particular would increase parking demands on the already limited parking lot at the Historic Jamestowne Visitor Center. Although additional parking is available at the nearby Jamestown Information Station, additional days of parking overflow may burden NPS employees with additional traffic management duties and may negatively affect the visitor experience for those who unexpectedly must park offsite.

Stakeholder feedback

Stakeholders did not favor elimination of the HTS but recognize it as a possible measure in achieving significant cost savings.

Service Concept 07 (SC07) – Discontinue the HTS and operate the JAS on parking overflow days only

This concept is similar to elimination of the HTS but also includes removal of the JAS except on parking overflow days. As discussed in SC06, eliminating the HTS would result in an increase in the number of days demand exceeds capacity at the Historic Jamestowne Visitor Center parking lot. These are the days on which the JAS would run. This situation has happened three or four days a year for the past few years, but to generate a cost estimate for this concept, a greater number of days must be assumed. There are 33

weeks in the current operating season. Perhaps without the HTS, overflow conditions may occur once a week for 20 weeks.

The current operating cost for an unpredictable, on-demand shuttle service will likely be much higher than the \$73 per service hour of the current system. Perhaps this amount would increase as much as 33 percent to 100 percent to \$100 to \$150 per service hour.

Under these assumptions, annual cost for an on-demand shuttle system could range from \$16,000 to \$24,000. If this concept were pursued, additional analysis would verify or update these figures.

Advantages

This concept would result in a significant cost reduction of over 95 percent compared with 2009 costs.

Disadvantages

Disadvantages of this concept are identical to those of SC06 with the addition of several considerations. First, Colonial NHP does not have a way to predict which days will produce overflow parking conditions at Historic Jamestowne, and the park may have a difficult time finding a shuttle operator who can provide on-demand shuttle service. A related disadvantage is that this concept will place additional logistics, schedule, and planning demands on park staff to attempt to predict and/or respond to parking overflows.

Stakeholder feedback

Stakeholders recognized this concept as challenging to operate. The shuttle operator, CWF, notes it cannot provide this type of service. CWF does not have drivers available that can respond to on-demand requests.

Service Concept 08 (SC08) – Decrease the HTS frequency

This concept seeks to introduce cost savings by reducing service frequency of the HTS from 30 to 60 minutes. Essentially each HTS route would operate with one shuttle vehicle instead of two, reducing total daily service hours from 39.5 to 25.5. Annual costs would be \$425,000, a cost savings over 2009 of \$235,000

Advantages

This concept results in a cost reduction of roughly 35 percent compared with 2009 costs.

Disadvantages

This concept would remove as many as 28 HTS shuttle trips per day and potentially double average wait time. Passenger trips would be expected to decline, and congestion, emissions, and parking overflows would increase.

Stakeholder feedback

This concept was overwhelmingly rejected by stakeholders. They noted passenger trips increased significantly when the frequency increased from 60 to 30 minutes in 2006 and that service greater than 30 minutes is unattractive to riders

Service Concept 09 (SC09) – Incorporate the JAS into the Jamestown HTS

This concept seeks to reduce costs by eliminating the JAS and incorporating JAS stops including Historic Jamestowne Visitor Center, Glass House, JYF's Jamestown Settlement, and the Jamestown Information Station (when necessary) into the Jamestown HTS route. The service frequency for these stops would be reduced from four shuttles per hour to two shuttles per hour, and it may be necessary to remove the stop at JYF's Jamestown Settlement to comfortably achieve two shuttles per hour. The Jamestown HTS would

run between 3:00 p.m. and 5:00 p.m. This concept would reduce annual costs to \$530,000, a cost savings over 2009 costs of \$130,000.

Advantages

This concept results in a cost reduction of roughly 20 percent compared with 2009 costs.

Disadvantages

Service frequency among Jamestown stops would decline from the current 15 minutes to 30 minutes. To provide service to and from Jamestown shuttle stops, HTS shuttles would have to make the Jamestown stops in both directions (both to and from the Colonial Williamsburg Visitor Center). Service changes would be confusing for visitors and could detract from their experiences.

Stakeholder feedback

Stakeholders were hesitant to alter or drop the JAS for three reasons. First, the JAS has higher ridership than both the Yorktown and Jamestown HTS. Second, stakeholders perceived the popularity of the JAS is due to its high frequency (four trips per hour) and were reluctant to reduce frequency to twice an hour.

Service Concept 10 (SC10) – Eliminate the JAS

This concept seeks to reduce costs by eliminating the JAS. It would eliminate stops at Glass House, Jamestown Settlement, and Jamestown Information Station. Daily service hours would be reduced from 39.5 to 32 and annual costs would be reduced to \$535,000, a savings of \$125,000 over 2009 costs.

Advantages

This concept results in a cost reduction of roughly 19 percent compared with 2009 costs.

Disadvantages

Visitors who take the HTS to Jamestown could not access any of the other nearby attractions including Glass House and Jamestown Settlement. The overflow parking lot at Jamestown Information Station would be served by the HTS on parking overflow days, thus stressing the Jamestown HTS schedule and resulting in possible delays. This option would be confusing for visitors and difficult for NPS staff to manage.

Stakeholder feedback

Stakeholders rejected this concept for the same reasons as SC09.

Service Concept 11 (SC11) – Discontinue all service

This concept discontinues all HTS and JAS service.

Advantages

Discontinuation of all HTS and JAS service would save \$660,000.

Disadvantages

Discontinuation of all HTS and JAS service would result in increased congestion and emissions, elimination of interpretive services along the Colonial Parkway, and degraded visitor experience for the visitors that value the transportation service provided by the shuttles. Visitors parking at the Jamestown Information Station would have no way besides walking to reach the attractions at Jamestown, and the frequency of overflow parking days would increase due to the removal of the HTS. Discontinuation of the

HTS and JAS would stymie the significant efforts made in implementing these systems and would force a future effort to implement shuttle service from scratch.

Stakeholder feedback

Stakeholders implied that visitors who park at the Jamestown Information Station must be provided a motorized transportation alternative to reach Jamestown attractions. Discontinuation of all service would be action of last resort.

Alternative service concept analysis

The following analysis of the alternative service concepts, summarized in Table 13, seeks to address this goal. First, based on their advantages, disadvantages, costs, and stakeholder acceptability, the following concepts may be removed from consideration:

- SCo4, SCo5, SCo8, SCo9, SCo10, and SCo11 are deemed unacceptable by stakeholders and should be deprioritized from consideration.
- SCo7, discontinuation of all service except on parking overflow days, significantly reduces service and may not be logistically possible. This concept should be removed from consideration.
- SCo2, reduction of hours of operation, though acceptable to stakeholders and relatively harmless to the visitor experience, has a relatively minor financial cost savings and should be removed from consideration.

Three concepts, SCo1, SCo3, and SCo6, remain. The following if-then analysis may guide decision makers given the above considerations and goal:

- **If maintaining high levels of service is most important, then SCo1 may be the best option.** This concept provides the least cost reduction but also the least derivation from the current service offered. SCo1 maintains the administrative, logistic, and operational functions of the shuttle system so that when the funding outlook improves, service may be restored or improved relatively easily.
- **If striking a balance between maintaining high level of service and introducing cost reductions is most important, then SCo3 may be the best option.** SCo3, a combination of SCo1 and SCo2, diminishes service more than SCo1 but has slightly better cost savings. Decision makers considering this option must decide whether the additional cost savings are worth the cuts in service brought both by shortening the operating season and shortening the hours-per-day of the system. Like SCo1, SCo3 maintains the administrative, logistic, and operational functions of the shuttle system so that when the funding outlook improves, service may be restored or improved relatively easily.
- **If cost reductions are paramount, the SCo6 may be the best option.** Although it significantly pares down service, SCo6 achieves significant cost savings of roughly 80 percent, mitigates effects of an anticipated increase in parking overflows at Historic Jamestowne Visitor Center, and continues administrative and operational functions of the shuttle. Since SCo6 would result in the discontinuation of the HTS routes, these functions would be maintained to a lesser degree. Pursuing SCo6 would therefore cause it to be more difficult for NPS to restore service once the funding outlook improves.

Table 13
Summary of alternative service concepts

Source: Volpe Center

Service Concept	Short description	Advantages	Disadvantages	Estimated annual cost	Stakeholders' acceptability
SCo1	Reduce operating season	Uncomplicated schedule; cost savings	Increased reliance on personal automobiles	\$450,000 – \$560,000	Acceptable
SCo2	Reduce hours of operations	Uncomplicated schedule; cost savings	A not-insignificant number of visitors will be affected	\$500,000 – \$580,000	Acceptable
SCo3	Combine of reduction in season with reduction in hours	Cost savings	Unpredictable decrease in passenger trips	\$400,000 – \$530,000	Acceptable
SCo4	Reduce days-per-week of service	Modest cost savings	Complicated schedule	\$545,000 – \$600,000	Unacceptable
SCo5	Discontinue Yorktown HTS	Significant cost savings	Force Yorktown HTS riders into personal automobiles; remove interpretive opportunity on Yorktown HTS route	\$395,000	Unacceptable
SCo6	Discontinue Jamestown and Yorktown HTS	Significant cost savings	Same as SCo5 but for both HTS routes; increase congestion, emissions, and parking overflows at Historic Jamestowne	\$135,000	Acceptable
SCo7	Discontinue HTS and operate JAS on parking overflow days only	Significant cost savings	Same as SCo6; significant operations and logistics challenges with parking and on-demand shuttle scheduling	\$16,000 – \$24,000	Acceptable (if possible)
SCo8	Decrease HTS frequency	Cost savings	Reduce attractiveness of HTS service; increase congestion, emissions, and parking overflows at Historic Jamestowne	\$425,000	Unacceptable
SCo9	Incorporate JAS into Jamestown HTS	Cost savings	Complicated schedule; increased wait times	\$530,000	Unacceptable
SCo10	Eliminate JAS	Cost savings	Significantly decreased visitor access to Jamestown attractions	\$535,000	Unacceptable
SCo11	Discontinue all service	Cost elimination	Same as SCo7	\$0	Unacceptable

Section 7: Conclusions

Colonial NHP currently operates a shuttle system that is popular with visitors; provides transportation, access, and interpretation to visitors; mitigates parking overflow conditions at Historic Jamestowne; and mitigates traffic congestion and vehicle emissions.

While the shuttle system is currently funded with congressional appropriations, that funding is set to run out in September 2010. There are several reasons to seek continuing the shuttle system beyond September 2010:

- As evidenced by the visitor survey,²⁷ Colonial NHP visitors value the service benefits provided by the shuttle system;
- NPS and the American public value the environmental benefits of transit on public lands;
- NPS and park visitors value the interpretive opportunities afforded by the current shuttle system;
- NPS worked hard to implement the current shuttle system, particularly given the complex relationships among stakeholders and federal, state, and local rules regarding federal funding; and
- Revival of a discontinued shuttle system will be more difficult than continuing the existing system or even a scaled-down system.

Given these considerations, NPS should strive to continue to offer the shuttle system to Colonial NHP visitors. While possible sustainable funding strategies to continue the shuttle system exist, they may not mature prior to September 2010. To guarantee continuation of the shuttle system into FY 2011, NPS should move forward with a three-pronged strategy:

1. **Work with the Northeast Region Office.** Work with the Northeast Region Office to obtain clarification about the time period over which Colonial NHP may spend the congressionally appropriated money. Doing so would allow the park additional time to develop a sustainable revenue stream.
2. **Alter the existing service concept.** Alter the existing service concept in such a way that saves operations and maintenance expenses and allows the shuttle system to operate with only the congressionally appropriated money through FY 2011.
3. **Seeking sustainable revenue streams.** Continue working with partners to identify revenue streams that will allow the shuttle to operate beyond 2011 without congressional appropriations.

Three cost-saving alternative service concepts have been identified by Volpe Center:

- **Shortening the operating season.** This concept provides the least cost reduction but also the least derivation from the current service offered.
- **Shortening the operating season and the daily operating hours.** Decision makers considering this option must decide whether the additional cost savings are worth the cuts in service brought both by shortening the operating season and shortening the hours-per-day of the system.
- **Discontinuing the HTS routes and continuing the JAS.** Although it significantly pares down service, this concept achieves cost savings of roughly 80 percent, mitigates effects of an anticipated increase in parking overflows at Historic Jamestowne Visitor Center (in part due to the discontinuation of the HTS), and continues administrative and operational functions of the shuttle. This concept may provide enough funding for the JAS to run through 2013, by which time the funding and operating environments will likely have changed dramatically.

If Colonial NHP and NPS elect to continue the shuttle system, they should increase marketing efforts. Despite its popularity among visitors, many riders noted they learned about the system only by chance.

²⁷ “Colonial National Historical Park Shuttle Service Survey Report,” The Volpe Center, February 2010

There may be significant numbers of visitors to Colonial NHP who would choose to use the shuttle system if they knew about it prior to arrival. To further improve ridership and service to visitors, Colonial NHP could market the shuttle in the following ways:

- Highlight the service on the park website;
- Include route maps in the park brochures;
- Post route maps at the shuttle stops;
- Improve signage and information provided at the Colonial Williamsburg Visitor Center; and
- Publicize the service in the Historic Triangle area.

Ultimately, a champion for the continuation of the shuttle system must step forward and take action. This champion could be from the park, NPS Northeast Region Office, NPS Washington Office, or even one of the park's partner organizations. The champion and decision makers may review the evaluation of funding scenarios and alternative service concepts (summarized in Table 11 and Table 13, respectively) and make an informed set of decisions regarding the future of the Colonial NHP shuttle system.

Appendix A: Calculation of Combined Visitation Estimate

The 2004 Phase II study “Alternative Transportation System Study Phase Two Final Report” (Cambridge Systematics) estimated overlap in visitation between Yorktown and Jamestown at 23 percent. Using this factor and Table A-1 as a guide, combined visitation may be estimated as follows:

1. Identify the maximum and minimum of the Historic Jamestowne and Yorktown visitation figures.
2. Assuming 23 percent of the maximum visitation overlaps with that of the minimum, calculate 23 percent of the maximum visitation. If this value is more than the visitation of the minimum site, record the value of the minimum site. This represents the total overlap between the two sites.
3. Calculate the difference between the overlap for both the maximum and minimum sites. These figures represent the individuals who went only to the maximum or only the minimum site.
4. Add the overlap figure and the differences together to arrive at a combined visitation estimate.

Table A-1
Calculation of Combined Visitation Estimate

Source: NPS and Volpe Center

Year	Historic Jamestowne	Yorktown	Maximum	Minimum	23% of Max., or Min.	Minimum Diff.	Maximum Difference	Combined Estimate
2000	378,960	318,934	378,960	318,934	87,161	231,773	291,799	610,733
2001	330,884	313,575	330,884	313,575	76,103	237,472	254,781	568,356
2002	279,131	277,183	279,131	277,183	64,200	212,983	214,931	492,114
2003	256,335	227,345	256,335	227,345	58,957	168,388	197,378	424,723
2004	268,671	219,769	268,671	219,769	61,794	157,975	206,877	426,646
2005	190,910	215,672	215,672	190,910	49,605	141,305	166,067	356,977
2006	191,706	245,925	245,925	191,706	56,563	135,143	189,362	381,068
2007	440,346	275,108	440,346	275,108	101,280	173,828	339,066	614,174
2008	288,221	181,272	288,221	181,272	66,291	114,981	221,930	403,202

Appendix B: Stakeholder meeting agenda, November 10, 2009

Figure B-1
Stakeholder meeting agenda, November 10, 2009

Source: Colonial NHP and Volpe Center

Colonial National Historical Park	
<p>Agenda: Evaluating Service Options and Funding Alternatives for the Jamestown/Yorktown Historic Triangle Shuttle and Jamestown Area Shuttle Yorktown Battlefield Visitor Center Conference Room</p> <p>Tuesday, November 10, 2009 9:00 AM – 12:00 PM</p>	
• Welcome and Introductions - <i>Park</i>	15 minutes
• Project Overview - <i>Volpe</i>	10 minutes
▪ Project goal: To evaluate the efficacy of the shuttle, investigate alternative service concepts, and develop a business plan for continuing shuttle operations past 2010	
▪ Work completed to date	
▪ Workshop goal: To discuss ideas for service options and funding possibilities for the continuation of the shuttle system	
• Existing Service Overview - <i>Volpe and Park</i>	15 minutes
▪ Service characteristics	
▪ Funding	
▪ Evaluation results	
▪ Survey results	
• Future Funding Possibilities - <i>Volpe, Park, and Participants</i>	45 minutes
▪ List of funding possibilities	
▪ Discussion of the merit/likelihood of these or other possibilities	
• Future Service Characteristics - <i>Volpe, Park, and Participants</i>	45 minutes
▪ List of possible changes in service characteristics	
- Hours of operation	
- Frequency/headway	
- Weeks/months of operation	
▪ Discussion of the merit/likelihood of these or other possibilities	
• Next Steps - <i>Volpe and Park</i>	10 minutes
▪ Pursue future funding possibilities and alter service characteristics as necessary	
• Adjourn	

Appendix C: Stakeholder meeting attendees, November 10, 2009

Skip Brooks

Deputy Superintendent, Colonial NHP

Mark Carter

Assistant County Administrator, York County, Williamsburg Area Transit Authority Board Member

Dorothy Geyer

Natural Resource Specialist, Colonial NHP

Jim Holloway

Museum Education Services Director, Jamestown Yorktown Foundation

Sarah Jones

Shuttle Operations, Colonial Williamsburg

Louis Malon

Director of Preservation Services, Preservation Virginia

Danny McDaniel

Director of Security and Safety, Colonial Williamsburg Foundation, Williamsburg Area Transit Authority Board Member

Doug Powell

Assistant County Administrator, James City County, Williamsburg Area Transit Authority Board Member

Mark Rickards

Executive Director, Williamsburg Area Transit Authority

Dan Smith

Superintendent, Colonial NHP

Lee Whitby

Shuttle Operations, Colonial Williamsburg

Marycarol White

Director of Financial and Management Services, York County

Appendix D: Peer Examples

The Volpe Center team reviewed the financing of transportation systems operating in other national parks and national historic sites to see what knowledge may be transferrable to Colonial NHP. Four parks were chosen to provide a range of examples of different funding sources used. The peer examples include the Roosevelt-Vanderbilt National Historic Sites (NHS), Acadia National Park (NP), Gettysburg National Military Park (NMP), and the Lewis and Clark National Historical Park (NHP).

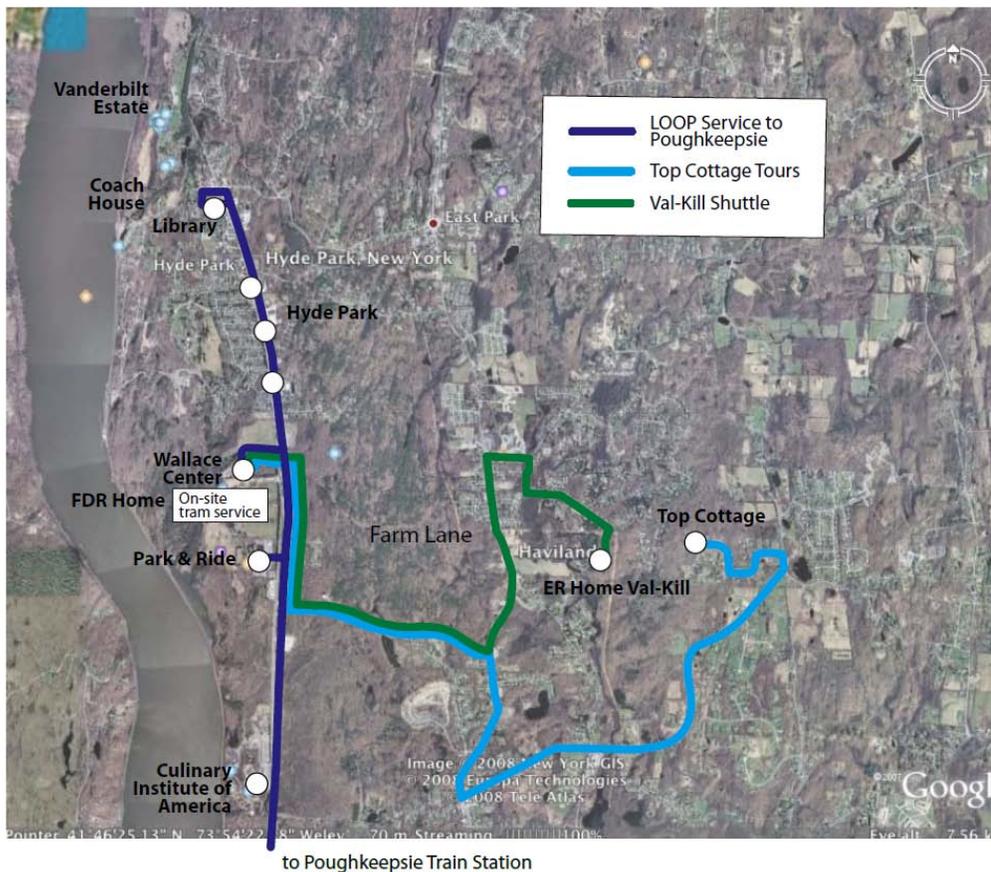
Roosevelt-Vanderbilt national historic sites

Description

Roosevelt-Vanderbilt NHS comprises the home of Franklin D. Roosevelt, the Vanderbilt Mansion, the Eleanor Roosevelt NHS, and Top Cottage. NPS offers a fare-free, guided shuttle service between the national historic sites during the May to October operating season called the Roosevelt Ride. The itinerary of the Roosevelt Ride begins daily at the Poughkeepsie Metro North commuter rail station to accommodate visitors arriving by train from New York City and other cities and continues throughout the park, accessing Top Cottage and Val-Kill, shown in Figure D-1. Visitors that do not arrive by train can also board the Roosevelt Ride within the park. Depending on staffing levels and availability, the shuttle operates daily and can run at 30 minute to one hour headways. Free public parking is also available at all of the sites. Top Cottage is the only site that must be accessed by shuttle.

Figure D-1
Map of Roosevelt Ride

Source: Roosevelt-Vanderbilt national historic sites



Roosevelt-Vanderbilt NHS has over 500,000 visitors annually, 12 miles of roads and trails, 777 acres of historic landscapes, 50 to 60 staff, and more than 50 historic structures. Table D-1 shows the entrance fees charged at Roosevelt-Vanderbilt NHS.

Table D-1
Entrance fees at Roosevelt-Vanderbilt NHS

Source: NPS

Site	Entrance Fee Per Person
FDR Home and Presidential Library/Museum	\$14.00
Vanderbilt Mansion	\$8.00
Val-Kill	\$8.00
Top Cottage	\$8.00
Annual Park Pass	\$40.00
Children (15 and younger)	Free

Funding Sources

The Roosevelt-Vanderbilt shuttle service received initial funding from the Alternative Transportation in Parks and Public Lands Program (ATPPL). The ATPPL funds were used to begin a multi-year pilot shuttle service and then used for implementation of the service. The projected operating expense for the continuation of the shuttle service is \$253,000 in 2010, \$141,216 in 2011, and \$144,493 in 2012²⁸. As the ATPPL funds run out after the 2010 operating season, the shuttle service will institute a transportation fee as a part of the entrance fee to fund continuing expenses. A list of the funding sources and their amounts are listed below. An estimated percentage breakdown of operating revenues by funding source is provided in Figure D-2.

- **Alternative Transportation in Parks and Public Lands Program (ATPPL):** The ATPPL program, now known as the Paul S. Sarbanes Transit in Parks (TRIP) program, is a federal grant program funding planning and implementation projects for alternative transportation systems (ATS). Roosevelt-Vanderbilt national historic sites received funding in 2007 for a multi-year pilot shuttle service (\$226,800)²⁹ and received funding in 2008 for implementation of ATS (\$630,000)³⁰.
- **Transportation fees:** Once funding from ATPPL runs out in 2010, approximately \$2.75 from each entrance fee will be put into a transportation account to fund continuing operations and maintenance costs³¹. This amount will be used strictly for transportation purposes.

²⁸ Roosevelt-Vanderbilt National Historic Sites ATS Phase III Plan. Tom Crikelair Associates. Final report submitted to National Park Service. May 27, 2009.

²⁹“FY 2007 ATPPL Project Selection”. Federal Register, October 15, 2007. Vol. 72 (198)

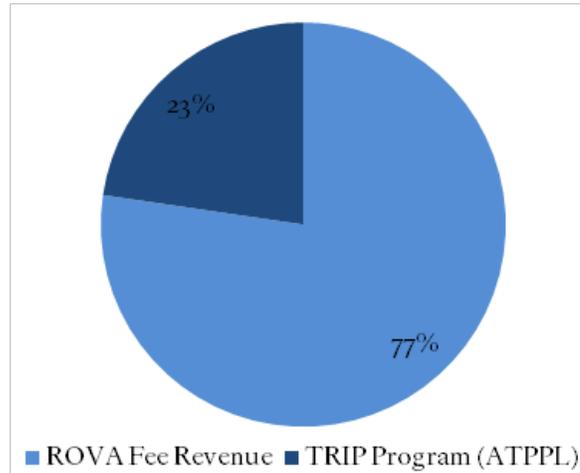
³⁰“FY 2007 ATPPL Project Selection”. Federal Register, October 10, 2008. Vol. 73 (198)

³¹ Scott Rector, Chief of Interpretation. Roosevelt-Vanderbilt National Historic Site. October 2009.

Figure D-2

Percentage of operating revenue by funding source (2011 projections)

Source: Roosevelt-Vanderbilt national historic sites³²



Partnerships

The Roosevelt-Vanderbilt NHS has partnerships with local organizations that provide advocacy and volunteers. The partners assist in raising funds to support the park and its resources³³. Strong partnerships help garner support for the park and have been able to validate the need for the shuttle service. Some of the partners participate in operating the national historic sites in addition to raising funds for the sites. Partners for the Roosevelt-Vanderbilt NHS are listed below.

- Beatrix Farrand Garden Association
- The Eleanor Roosevelt Center at Val-Kill, Inc.
- Franklin and Eleanor Roosevelt Institute
- Franklin D. Roosevelt Presidential Library and Museum
- Frederick W. Vanderbilt Garden Association, Inc.
- Honoring Eleanor Roosevelt
- Hudson River Valley National Heritage Area
- Roosevelt-Vanderbilt Historical Association

Summary

Similar to Colonial NHP, the Roosevelt Ride relied heavily on federal funding (ATPPL funds) to begin and operate its shuttle system. As the shuttle system faced a decrease in federal funding, Roosevelt-Vanderbilt NHS identified entrance fees as a feasible financing option. The national historic sites, along with the local partners, recognized the need to continue the shuttle service and the value it provides to its visitors. The Roosevelt Ride presents an appropriate example of using fee revenue for funding once federal funding expires.

Acadia National Park

Description

Acadia NP provides a fare-free shuttle bus called the Island Explorer. Initiated in 1999, the Island Explorer represents the coordinated efforts of Acadia NP, the Maine Department of Transportation

³² Roosevelt-Vanderbilt National Historic Sites ATS Phase III Plan. Tom Crikelair Associates. Final report submitted to National Park Service. May 27, 2009.

³³ Roosevelt-Vanderbilt National Historic Sites. General Management Plan. 2009

(MaineDOT), the Mount Desert Island League of Towns, L.L. Bean, Friends of Acadia, Downeast Transportation, local businesses, the FHWA, and the FTA³⁴. The shuttle operates daily from late June through Columbus Day and connects the national park to nearby hotels, campgrounds, village centers, and destinations within the park. Operated by Downeast Transportation, the Island Explorer runs buses along eight different routes and services both visitors and residents throughout the area. Buses begin operating at 6:45 a.m. and operate until midnight on many routes³⁵. See Figure D-3 for a route map.

³⁴ Innovative Transportation Planning Partnerships to Enhance National Parks and Gateway Communities. Requested by AASHTO, Standing Committee on Planning. Prepared by Texas Transportation Institute. Cambridge Systematics, Inc. October 2009.

³⁵ Ibid.

Figure D-3
Map of Island Explorer
 Source: Acadia NP



Acadia NP comprises of 40,000 acres along the coast of Maine, Mount Desert Island, and other islands. The park has over 2.2 million annual visitors and 44 miles of carriage roads³⁶. Acadia NP charges an entrance fee for its visitors, shown in table D-2.

³⁶ Ibid.

Table D-2
Entrance fees at Acadia NP

Source: NPS

Site	Entrance Fee Per Person
Entrance pass (1 vehicle)	\$20
Entrance pass (1 individual)	\$5
Acadia n annual pass	\$40

Funding Sources

Acadia NP relies on diverse funding sources to finance the Island Explorer. The park has used ATPPL funding, FTA funding, and congressional appropriations. The shuttle buses were initially purchased using Congestion Mitigation and Air Quality (CMAQ) funds³⁷. The park, local towns, and the Friends of Acadia provided the local match for these funds³⁸. The Island Explorer continues to receive financial support from state and local government, local businesses, and organizations to fund the shuttle service. In addition to receiving funding from external sources, Acadia NP charges a transit fee that is part of its park entrance fees. These fee revenues contribute to a dedicated transit account that funds the continuation of the Island Explorer. The operating expenses for the Island Explorer were approximately \$1.2 million in 2008³⁹. A list of current funding sources is provided below. An estimated percentage breakdown of operating revenues by funding source is provided in Figure D-4.

- **Entrance fees (transit fee):** the park contributes a portion of their entrance and tour fees to the Island Explorer shuttle service. Approximately 50 percent of the shuttle service funding is received through fees⁴⁰.
- **FTA 5311 funding:** This program (49 U.S.C. 5311) provides formula funding to states for the purpose of supporting public transportation in areas of less than 50,000 populations. The program is focused on funding transportation in rural areas and communities. This funds approximately 20 percent of total operating expenses⁴¹.
- **Municipal appropriations:** the town of Bar Harbor contributes approximately half of all municipal support the shuttle receives.
- **Corporate support:** L.L. Bean provides \$200,000 per year to Friends of Acadia to support the Island Explorer project, which is scheduled to continue at least until FY 2012. The funding from L.L. Bean has in part been used to extend service later in the fall, to introduce a bicycle express service, and to match federal funds⁴².
- **Business direct service:** Hotels and campgrounds that receive front door service pay annual fees to Downeast Transportation. Downeast Transportation mails invoices to these businesses at the start of each summer. Fees for direct service are also paid by Bay Ferries, the Bar Harbor-Winter Harbor Ferry, and the College of the Atlantic. There is a plan to add \$1,000 per year in annual fees for several motels and non-profit organizations that utilize the service that do not currently provide any financial support.

³⁷ Innovative Transportation Planning Partnerships to Enhance National Parks and Gateway Communities. Requested by AASHTO, Standing Committee on Planning. Prepared by Texas Transportation Institute. Cambridge Systematics, Inc. October 2009.

³⁸ Ibid.

³⁹ Island Explorer Short Range Transit Plan. Prepared for NPS and Maine DOT. Tom Crikelair Associates. May 21, 2007.

⁴⁰ Ibid.

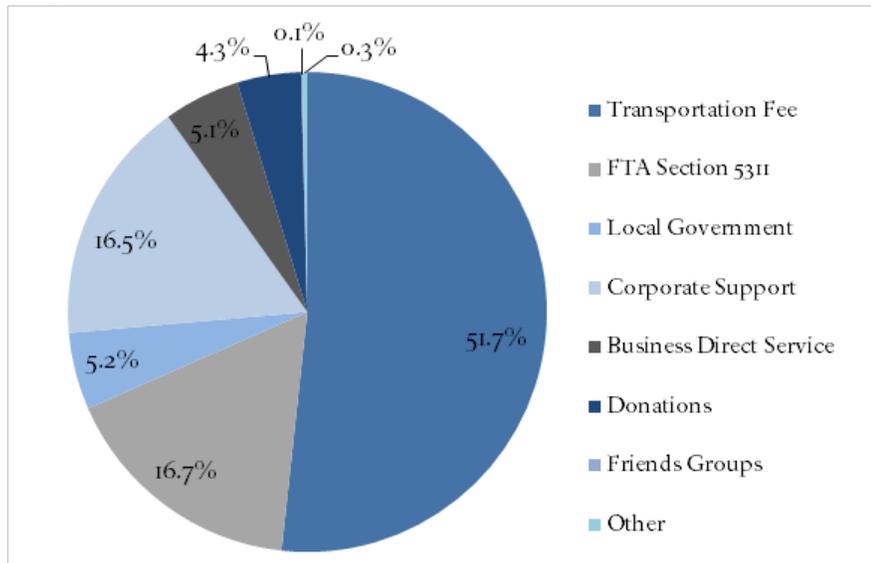
⁴¹ Ibid.

⁴² Innovative Transportation Planning Partnerships to Enhance National Parks and Gateway Communities. Requested by AASHTO, Standing Committee on Planning. Prepared by Texas Transportation Institute. Cambridge Systematics, Inc. October 2009.

- **Business donations:** local businesses such as the Acadia Corporation make an annual donation to the Island Explorer.
- **Individual donations:** Individuals provide private donations to the shuttle service.

Figure D-4
Percentage of operating revenue by funding source (2009 estimates)

Source: Acadia NP and Volpe Center⁴³



Partnerships

Acadia NP is able to successfully operate and finance the shuttle because of its strong partnerships to local organizations that also realize the value of the transportation system. Acadia NP's multiple partners were integral to implementing the shuttle system and continue to be involved in the planning and future survival of the shuttle. Acadia NP represents a good example of a national park that collaborates with a diverse group of local partners to focus on sustainability of its shuttle system. Some Acadia NP partners include:

- **Maine Department of Transportation (MaineDOT):** Maine DOT provided state funding, assisted in securing federal funding, and provides ongoing operating assistance through the FTA 5311 program⁴⁴.
- **Mount Desert Island League of Towns:** The Mount Desert Island League of Towns consists of Bar Harbor, Southwest Harbor, Mount Desert, Tremont, Trenton, Lamoine and Cranberry Island. The League supported and coordinated with the park to implement the shuttle service.
- **Local Communities:** Certain local communities (Bar Harbor, Southwest Harbor, Mount Desert, and Tremont) provide operating funding for the Island Explorer.
- **Friends of Acadia:** A non-profit charitable organization, Friends of Acadia, is actively involved in planning and implementing the Island Explorer. It facilitated the corporate sponsorship with L.L. Bean.

⁴³ Island Explorer Short Range Transit Plan. Prepared for NPS and Maine DOT. Tom Crikelair Associates. May 21, 2007. and Volpe Center.

⁴⁴ Innovative Transportation Planning Partnerships to Enhance National Parks and Gateway Communities. Requested by AASHTO, Standing Committee on Planning. Prepared by Texas Transportation Institute. Cambridge Systematics, Inc. October 2009.

- **Downeast Transportation:** Downeast Transportation is the non-profit transit provider that operates the Island Explorer.
- **L.L. Bean:** L.L. Bean is an outdoor apparel and equipment company. It is the sole corporate sponsor of the Island Explorer and displays its logo on the shuttle buses.
- **Local Businesses:** Local businesses in towns in the park and adjacent communities provide support for the Island Explorer. Certain businesses contribute funding for stops in front of their businesses.

Summary

The success of the Island Explorer stems from a couple of factors: strong local partnerships, diversity in funding sources, and financial commitment or support from the park. Acadia NP relies on continuing support from local communities, businesses, and non-profit organizations to help provide funds for a shuttle service that serves some of the businesses directly and serves the greater community. To complement the partnerships, the park displays its commitment to the shuttle service by dedicating a portion of its fee revenue. The range of different funding sources allows the Island Explorer to succeed and add value for riders.

Gettysburg National Military Park

Description

The Gettysburg NMP uses Freedom Transit, a bus shuttle service, to provide transportation for visitors from the Museum and Visitor Center to different historic points in downtown Gettysburg via three fixed routes. The shuttle system provides park visitors with access to the Historic Gettysburg Train Station, the Majestic Theater, and other points of interest. Operated by a division of the Adams County Transit Authority (ACTA), Freedom Transit charges fares for all riders. ACTA is an existing para-transit service with a long history of operating in the area. ACTA partnered with Freedom Transit to create fixed route service using three trolleys along three routes shown in Figure D-5. The shuttle system began service in June of 2009.

The Freedom Transit service is unique in that it provides transportation services to areas in Gettysburg that are not necessarily affiliated with the national park. Visitors and residents of Gettysburg can use this public transportation system to access different points around the city, including hotels, restaurants, and other downtown Gettysburg attractions. The transit system charges a fare for riders, including passes for multiple trips, shown in Table D-3. Gettysburg NMP charges entrance fees for its visitors (see Table D-4). Gettysburg NMP has approximately 1,328 monuments, covers 5,900 acres, attracts over 1.4 million visitors, and has a \$100 million facility housing the museum and visitor center⁴⁵.

⁴⁵ “Gettysburg National Military Park”. National Park Service website. <http://www.nps.gov/gett/index.htm>

Figure D-5
Map of Freedom Transit
 Source: Freedom Transit

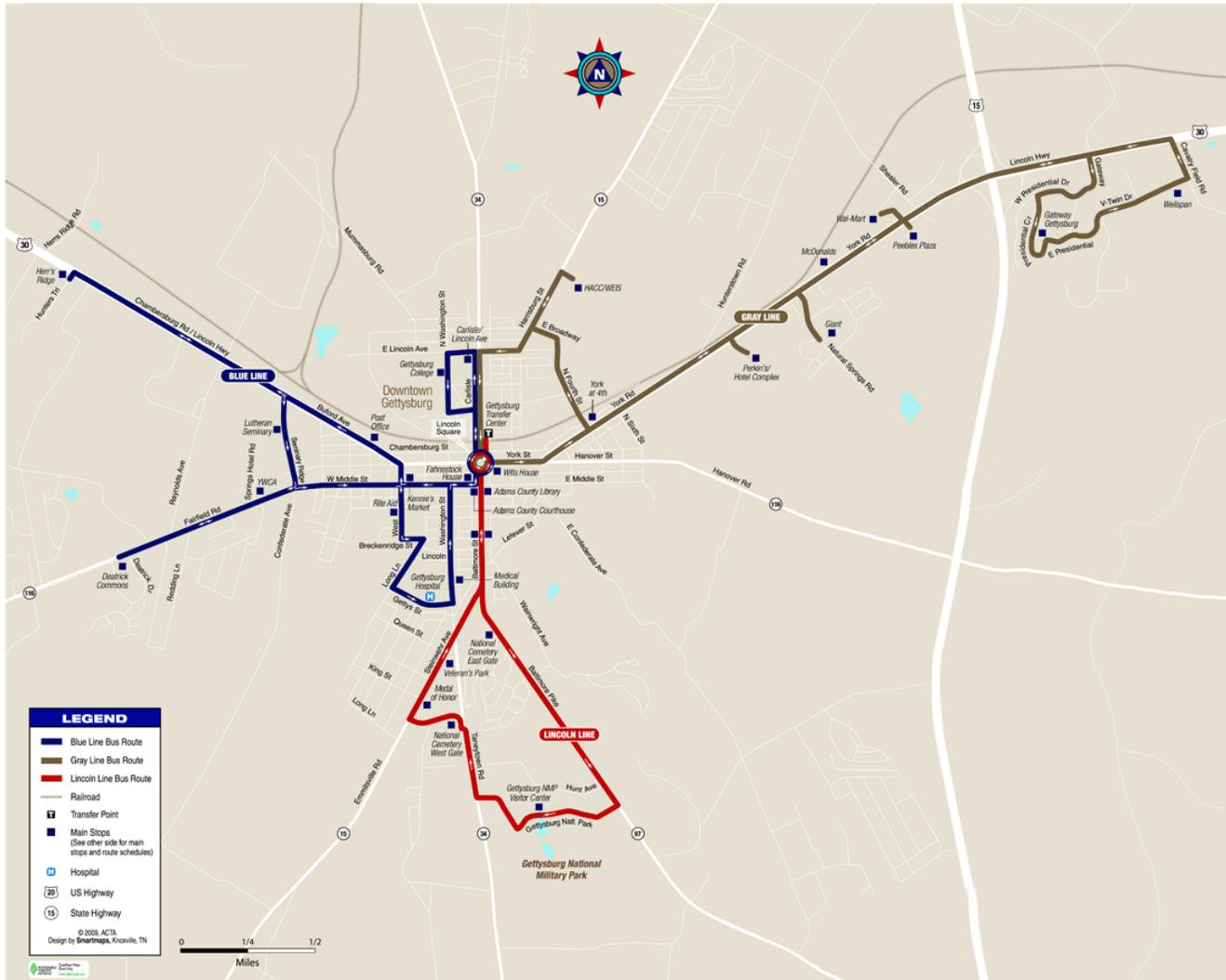


Table D-3
Transit fares for Freedom Transit
 Source: Freedom Transit

Site	Current Rate	Rate (07/01/10)	Rate (07/01/11)
Cash Fare	\$1.00	\$1.10	\$1.25
All day pass	\$3.00	\$3.00	\$3.50
10 ride pass	\$9.00	\$10.00	\$11.25

Table D-4
Entrance fees Gettysburg NMP

Source: NPS

Site	Current Rate
Adult: museum, exhibits, film, cyclorama	\$10.50
Seniors and active military: museum, exhibits, film, cyclorama	\$9.50
Youth (6-18): museum, exhibits, film, cyclorama	\$6.50
Children under 6: museum, exhibits, film, cyclorama	Free

Funding Sources

Freedom Transit uses a combination of ATPPL funding, transit fares, federal, state, and local government funding to implement the public transit service. The transit service serves the broader public community in addition to park visitors and therefore received some funds from its state transportation agency. The Gettysburg NMP also partnered with ACTA to receive funding from the ATPPL program for vehicle acquisition and other implementation costs. A list of funding sources is provided below. An estimated percentage breakdown of operating revenues by funding source is provided in Figure D-6.

- **Alternative Transportation in Parks and Public Lands Program (ATPPL):** Received funding in 2007 to procure trolleys and construct bus stops (\$787,353)⁴⁶.
- **Transit fares:** The trolley system charges a fare for riders, and expects to implement fare increases over the next several years.
- **State and local government support:** The Pennsylvania department of transportation and the borough of Gettysburg provided funding for the system⁴⁷.
- **CMAQ funds:** The CMAQ program provides funding to state department of transportation, metropolitan planning organizations, and transit agencies to invest in projects that reduce air pollutants from transportation related sources⁴⁸.
- **Advertising:** Freedom Transit charges \$500 per year for a one year contract to advertise one 24" x 11" sign in each of the three trolleys.

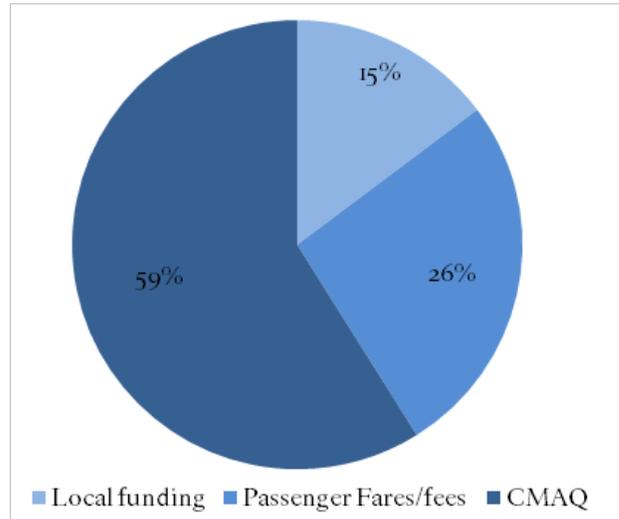
⁴⁶ "FY 2007 ATPPL Project Selection". Federal Register, October 15, 2007. Vol. 72 (198)

⁴⁷ 2007 ATPPL Application, Gettysburg National Military Park and conversation with Geoffrey Spangler, Freedom Transit November 2009.

⁴⁸ Ibid.

Figure D-6
Percentage of operating revenue by funding source (2009 estimates)

Source: ATPPL and Freedom Transit⁴⁹



Partnerships

Freedom Transit partners with several local organizations to provide support for the transit system. Many businesses, hotels, and restaurants throughout downtown Gettysburg are directly served by the transportation system and therefore have a direct interest in its success. Several of Freedom Transit's partners are listed below.

- Main Street Gettysburg
- Gettysburg Foundation
- Majestic Theater
- Gettysburg Convention and Visitors Bureau
- Shriver House Museum
- Gettysburg Battlefield Tours

Summary

Freedom Transit provides an example of a transit system that not only serves Gettysburg NMP, but also the broader Gettysburg community. The transit system serves residents in addition to visitors and charges a fare for the service. Although it secured significant funding from the FTA through the ATPPL program, the transit system was able to obtain funding from state and local government partners which contributed to the capital expenses of the system. From the outset, Freedom Transit was looking to other funding sources, in addition to federal funds, and was able to secure a more diverse range of financial support.

Lewis and Clark National Historical Park, Fort Clatsop

Description

Fort Clatsop is a national memorial within Lewis and Clark NHP and is located on Fort Clatsop Road in the outskirts of Astoria, Oregon. Astoria and neighboring communities are popular tourist destinations, but the main visitor attraction at Fort Clatsop is the fort replica, the site where Lewis and Clark spent the winter of 1805-1806. The park and local communities implemented the Explorer shuttle system to prepare

⁴⁹ 2007 ATPPL Application, Gettysburg National Military Park and conversation with Geoffrey Spangler, Freedom Transit November 2009.

for the 200th Anniversary of the Lewis and Clark Expedition that would attract over 1 million visitors between 2004 and 2006⁵⁰.

The Explorer is a fare-free, intra-park shuttle operating only during the summer months (Figure D-7). The shuttle transfers visitors from the parking lot at Netul Landing when the Fort Clatsop visitor center parking lot is full and stops at other destinations within the park, popular campgrounds, and Sunset Beach. The Explorer is operated by the Sunset Empire Transportation District (SETD). In the past, the SETD operated the intra-park shuttle and two regional transit service routes from neighboring communities to the park. Park attendance has decreased in recent years and the park reduced its shuttle service. The park currently operates one loop route serving the visitor center, specific campgrounds, and hiking trails. Fort Clatsop supports approximately 20 full time and seasonal staff, attracts over 230,000 annual visitors, and covers over 100 acres⁵¹.

⁵⁰ Innovative Transportation Planning Partnerships to Enhance National Parks and Gateway Communities. Requested by AASHTO, Standing Committee on Planning. Prepared by Texas Transportation Institute. Cambridge Systematics, Inc. October 2009.

⁵¹ Fort Clatsop Administrative History. National Park Service. 2006.

Figure D-7
Map of the Explorer

Source: Sunset Empire Transportation District



Funding Sources

The Explorer received over \$2 million in FTA funding for starting and implementing the shuttle system, which included the construction of a transit center and additional shuttle parking in Astoria⁵². Funding for continuing the shuttle service comes from the ATPPL program and the park. The SETD receives capital funding from the ATPPL program of approximately \$40,000 to \$50,000 annually to lease the vehicles. The total annual operations expense is approximately \$60,000 to \$70,000 annually, leaving the park to fund the difference between federal funding and the total operations expense⁵³. A list of funding sources is below. A percentage breakdown of operating revenue by funding source is not provided.

- **Transit fees:** A \$2 transit fee was imposed during the summer months to generate revenue for the Explorer. This fee was added to entrance fees and generated revenue for the shuttle service (see Table D-5)⁵⁴. The seasonal transit fee has recently been discontinued and service levels have been reduced⁵⁵.
- **Alternative Transportation in Parks and Public Lands Program (ATPPL):** capital expenses for the shuttle service are funded by the ATPPL program. In 2006, the park received \$50,000 to fund shuttle bus leasing from the SETD⁵⁶. In 2007, the park received \$43,000 to fund shuttle bus leasing from SETD⁵⁷. In 2008, the park received \$43,000 to fund shuttle bus leasing from SETD⁵⁸.
- **Park Funds:** The park funds between \$10,000 and \$20,000 to fill any gap in financing that occurs from the ATPPL funds and operating and maintenance expenses⁵⁹.

Table D-5
Entrance fees Lewis and Clark NHP

Source: NPS

Site	Current Rate
Ages 16 – older (7 day pass)	\$3.00
15 and younger	Free

Partnerships

Lewis and Clark NHP worked with several different partners to plan and implement the Explorer shuttle system. The partners collaborated most heavily in preparation for the 200th Anniversary celebration of the Lewis and Clark expedition, which brought together the local community in support of the park⁶⁰. Lewis and Clark NHP continues to work with these partners today in operating the shuttle system. A list of partners is included below.

⁵² Innovative Transportation Planning Partnerships to Enhance National Parks and Gateway Communities. Requested by AASHTO, Standing Committee on Planning. Prepared by Texas Transportation Institute. Cambridge Systematics, Inc. October 2009.

⁵³ Discussions with Fort Clatsop, Lewis and Clark NHP, National Park Service. November 2009.

⁵⁴ "Fort Clatsop, Review of Summer 2005 Operations." Prepared by the Volpe Center for the National Park Service. September 2005.

⁵⁵ Ibid.

⁵⁶ "FY 2006 ATPPL Project Selection". Federal Register, September, 2006. Vol. 71 (176)

⁵⁷ "FY 2007 ATPPL Project Selection". Federal Register, October, 2007. Vol. 72 (198)

⁵⁸ "FY 2008 ATPPL Project Selection". Federal Register, October, 2008. Vol. 73 (198)

⁵⁹ Discussions with Fort Clatsop, Lewis and Clark NHP, National Park Service. November 2009.

⁶⁰ Innovative Transportation Planning Partnerships to Enhance National Parks and Gateway Communities. Requested by AASHTO, Standing Committee on Planning. Prepared by Texas Transportation Institute. Cambridge Systematics, Inc. October 2009.

- **Western Federal Lands Highway Division:** Staff from Western Federal Lands and NPS assisted in the planning process for the initial shuttle bus service and parking facility. They continue to assist with securing funding for the seasonal shuttle and work with NPS and SETD.⁶¹
- **Sunset Empire Transportation District (SETD):** The SETD provides public transit services in the Clatsop County communities and operates the Explorer shuttle.
- **Pacific Transit:** Pacific Transit provides public transit services to communities within Pacific County, WA, and Astoria, OR. Staff from Pacific Transit assisted in the initial planning activities for the Explorer and provided service linking to SETD service.
- **Oregon Department of Transportation (ODOT):** ODOT provided funding for new signage and traveler information for the shuttle system when initially implementing the system.
- **Lewis and Clark Bicentennial Association:** The Lewis and Clark Bicentennial Association received a grant from the Community Transportation Association (CTAA) to develop a marketing plan for the Explorer shuttle bus system.⁶² The grant was approximately \$35,000 and funded the creation of a marketing campaign that was initiated in 2003.⁶³ The Bicentennial Association was also involved in public outreach.
- **Local organizations and businesses:** Local organizations and businesses participated in the planning activities surrounding the implementation of the shuttle. The Columbia River Maritime Museum, the Astoria Visitor Center, the Astoria Warrenton Chamber of Commerce, the Seaside Chamber of Commerce, American West Steamboat Company, and Sundial Special Vacations were some of the groups that participated.⁶⁴

Summary

Similar to Colonial NHP, the Explorer shuttle came to existence around a special historical event for the park. The park secured federal grant funding for the shuttle and charged a seasonal transit fee to operate the service. Recently, decreased park visitation called for a reduction in service levels of the shuttle system and an elimination of the transit fee. The park has adapted to these changes and continues to operate the Explorer using ATPPL funds and financial support from the park.

⁶¹ Ibid.

⁶² Ibid.

⁶³ Ibid.

⁶⁴ Innovative Transportation Planning Partnerships to Enhance National Parks and Gateway Communities. Requested by AASHTO, Standing Committee on Planning. Prepared by Texas Transportation Institute. Cambridge Systematics, Inc. October 2009.

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