

**SARATOGA NATIONAL HISTORICAL PARK
ALTERNATIVE TRANSPORTATION STUDY
PHASE II**

Final Report



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October 2005

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I. Introduction

A. Historic context

Saratoga National Historical Park (Saratoga NHP) preserves the historic sites associated with the surrender of British forces at Saratoga in 1777. This battle was a turning point in the fight for American independence. The park provides interpretation of the battlefield and other sites associated with the events and people of the military campaigns in the Champlain-Hudson and Mohawk Valleys.¹

Saratoga NHP consists of four non-contiguous sites. The Battlefield Unit is located in Stillwater, overlooking the Hudson River. The three other sites are the Saratoga Monument, the Schuyler Estate, and Victory Woods; together these three sites comprise the Old Saratoga Unit. The Old Saratoga Unit sites are located within the adjacent villages of Schuylerville and Victory and the Town of Saratoga, approximately eight miles north of the Battlefield.

B. Overview of this study

The goal of this study is to develop an alternative transportation system (ATS) that will enhance the visitor experience and understanding of the historic context of Saratoga NHP while protecting the Park's natural and cultural resources. The ATS should also link the Park's resources with other local historical and recreational assets. A successful ATS will enhance the visitor experience by providing on-board interpretation, reducing traffic congestion, and reducing conflicts with bicyclists and pedestrians.

This study considers developing new connections as well as integrating existing trail networks and other public facilities. While the primary goal of the study is to connect the Saratoga NHP units, the study has sought input from groups such as Old Saratoga on the Hudson, the Erie Canalway, and Lakes to Locks Passage as well as local officials in order to complement and support the work that these groups are doing in the area.

Study findings are presented in the remaining chapters of this report. The first step in this study, discussed in Chapter 2, was to create an inventory of key locations in the area and identify existing linkages between the sites. Chapter 2 also contains a review of the current visitation patterns at Saratoga NHP as well as a review of current ATS activity at comparable locations across the country. An evaluation of ATS alternatives is included in Chapter 3. Chapter 4 contains recommendations for an ATS at Saratoga NHP. Summary and conclusions are presented in Chapter 5.

¹ Saratoga National Historical Park General Management Plan Newsletter. Fall 2001.

II. Inventory and Analysis

A. Identification and Description of Key Locations

This section presents an inventory of the key points of interest in the Old Saratoga Unit and the surrounding region. Figure A-1 provides an overview of the region and Figure A-2 shows the location of the points of interest within the Old Saratoga Unit. (Figures A-1 through A-13 are included in Appendix A.) The remaining sections of this chapter describe the sites identified on Figures A-1 and A-2.

1. Visitor Orientation Sites

Five potential sites for a visitor orientation center were identified in the July 2002 Draft General Management Plan. These sites were: the Schuyler Estate, Victory Mill, the Town of Saratoga Offices, the Village Sand Pile, and the old school. The Mill site has been occupied by another developer and the old school is being redeveloped as offices; therefore, these sites are no longer being considered for a visitor orientation center. The Village Sand Pile and the Town Offices are essentially on the same site at Fort Hardy Park. Early in this study, Lock 5 was also considered as a possible visitor orientation site. However, it was decided that the Lock 5 site was too far removed from the other points of interest in the area to accomplish the goals of the visitor orientation site. Therefore, two sites remain under consideration: the Schuyler Estate and Fort Hardy Park.

The two visitor orientation sites were evaluated based on numerous criteria, which are described below. The evaluation criteria are based on those included in the General Management Planning Support Package (March 2003), with additional criteria added for this analysis. Following the descriptions of the criteria, the evaluation of the two sites is presented in Table 2.1.

Evaluation Criteria:

Transportation

- Roadway access and driveways: The site shall be located on roadways that have appropriate capacity available. Sight distance, existing driveway configuration, traffic on roadways serving the site, potential new driveway configurations, and vehicle access were evaluated. Current traffic was obtained in terms of Average Annual Daily Traffic (AADT).
- Sight distance: The site shall meet the standards of the New York State Department of Transportation. Standard sight distance measurements were made at each location.
- Pedestrian access: Safe and convenient pedestrian connections to other points of interest shall be provided at the site. Existing and potential connections to the Schuylerville Business District, other trails and other potential locations of interest were evaluated.
- Bicycle access: Bicycle access to the site shall be provided by bicycle lanes, adequate roadway shoulders, and/or multi-use trails. Existing bicycle facilities and access were evaluated.

- **Parking:** Existing parking and/or available land to create new parking areas should have sufficient capacity to accommodate the expected parking demand. Potential parking locations and access to sites were evaluated.
- **Potential transit access:** The site shall provide areas for shuttle or bus access, turn-around, and passenger queuing.
- **Potential water access:** Linkages to the Hudson River Corridor and the Erie Canalway National Heritage Corridor shall be provided at the site. The evaluation of each site was based on the expected degree of site modification and new construction that would be necessary to provide water access.
- **Traffic volume on adjacent roadway:** The visitor orientation center should be located to so that there is a high potential to capture traffic passing by the site.
- **Possible site transportation issues:** Overall evaluation of site and identification of transportation issues associated with each site.

Site Development

- **Facility size:** The site shall include an existing building of a size and condition that can be modified appropriately, and/or have sufficient buildable land to support a new facility to meet size requirements.
- **Drop-off/entry plaza:** The site shall have sufficient area to create an appropriate drop-off zone and pedestrian plaza at the facility's main entry. The drop-off zone shall be sized to accommodate cars as well as buses and other alternative transportation systems. The pedestrian entry plaza shall be of adequate size to provide small gatherings and accommodate desirable amenities and take into account the requirements of the Americans with Disabilities Act (ADA).
- **Loading/service area:** New or existing facilities shall have an appropriately sized area for loading and general services and shall be located so that it is well hidden from the visitor. The area shall also be easily accessible and accommodate all size of delivery/service vehicles.
- **Utilities:** Sewer, water, electric, telephone, cable, fiber optics and possible other utilities shall be available, modified and/or installed new on-site. For each of the sites evaluated it is assumed that there are utility services on-site or in the immediate area.
- **Proximity to Battlefield Unit:** The site shall encourage tourists to visit the Saratoga NHP Battlefield Unit as well as the Old Saratoga Unit sites and the local historic sites in the Old Saratoga region.
- **Interpretive opportunities/historic context:** On-site opportunities for related interpretive themes are not critical for the development of the physical structures but may be a critical factor in the overall success of the facility. The site shall be capable of supporting such opportunities.
- **Potential for shared use:** The site location shall be supportive to other potential users.

- Centralized location: The site shall be centrally located in relation to the Old Saratoga Unit sites and the other local historic sites. A centralized location will provide convenient access to the Schuylerville business district and municipal offices. The site should provide a hub for other historic sites and activities.
- Visual Impacts: The site shall support the development of a facility in a manner that minimizes visual impacts.
- Land Use: The site shall support the development of the facility in a manner that is consistent and complementary to the current and planned future uses of the site and off-site uses.
- Floodplain: The site shall provide adequate development opportunities above the 100-year floodplain.
- Wetlands: The site shall provide adequate development opportunities free from wetland impacts.
- Topography: The site shall provide adequate slopes (less than 15%) for development opportunities.
- Soils: The site shall provide adequate soil types for development.
- Hazardous Wastes: Site development shall not be limited by known hazardous wastes.

Table 2.1 – Evaluation of Alternative Sites for a Visitor Orientation Center

Evaluation Criteria	Alternative Sites	
	Schuyler Estate	Fort Hardy Park
<i>Transportation*</i>		
Roadway access & driveways	+	0
Sight distance	0	0
Pedestrian access	+	+
Bicycle access	+	-
Parking	0	0
Potential transit access	+	+
Potential water access	-	0
Traffic volume on adjacent roadway	-	+
Possible site transportation issues	+	0
<i>Transportation subtotal</i>	3	2
<i>Site development</i>		
Facility size	+	+
Drop-off/entry plaza	+	+
Loading/service area	+	+
Utilities	0	+
Proximity to Battlefield Unit	+	0
Interpretive opportunities/historic context	+	+
Potential for shared use	-	+
Centralized location	0	+
Visual Impacts	-	+
Land Use	+	+
Floodplain	+	-
Wetlands	0	+
Topography	+	+
Soils	0	0
Hazardous Wastes	0	-
<i>Site development subtotal</i>	6	9
Total	9	11

Key: + = Good = 1 point, 0 = Average = 0 points, - = Poor = -1 point

* Transportation evaluation based on information contained in Section 3.0 of the Draft Saratoga NHP General Management Planning Support Package, July 2002, and a site visit to Lock 5 conducted in September 2004.

Table 2.1 shows that the two prospective sites are nearly equivalent based on an overall assessment, although each of the sites has advantages and disadvantages based on particular criteria. It is noted that the evaluation presented in Table 2.1 gives equal weight to each criterion and does not account for differences in the importance of the criteria; therefore, this evaluation should be considered as one factor in the decision-making process and should not be the sole basis for making a final decision on the location of the visitor orientation center. Also, the redesign of Fort Hardy Park, which may include locating the visitor orientation center and the Town of Saratoga and Village of Schuylerville offices at the park, is predicated on the Village finding an alternate location for the athletic fields that are currently located in Fort Hardy Park. The Village

will need to either purchase land for new athletic fields or enter into an agreement with the school district to allow public use of the school's facilities.

The cost for site development and construction of the visitor orientation center is estimated to be \$2.5 million for either of the sites discussed above. This estimate does not include costs for land surveying, environmental analysis, design and engineering, permitting, construction inspection, or the removal of the existing New York State Department of Transportation facility at the Schuyler Estate. Interpretive displays at the visitor orientation center are also not included in the cost estimate.

Figure A-3 illustrates selected site development criteria for the Schuyler House and Figure A-4 presents a site development concept for the visitor orientation center at this location. Figures A-5 and A-6 show site development criteria and a concept plan for the Fort Hardy Park site.

2. Saratoga National Historical Park Sites

There are four Saratoga National Historical Park (Saratoga NHP) sites in this study. Three of these sites – the Schuyler Estate, Saratoga Monument, and Victory Woods – comprise the Old Saratoga Unit and are located near the Villages of Schuylerville and Victory. The fourth site is the Battlefield Unit, which is located approximately eight miles south of the Village of Schuylerville.

Schuyler Estate

The Schuyler Estate is located on Route 4, just south of the Village of Schuylerville in the Town of Saratoga. Tours of the house, which was the country estate of American General Philip Schuyler, are led by park rangers. Parking is provided and restrooms are available. The Schuyler Estate is currently open Memorial Day through Labor Day, Wednesday to Sunday, 9:30 AM to 4:30 PM, plus one weekend in October for special commemorative events.

Saratoga Monument

The Saratoga Monument is located west in the Village of Victory on Burgoyne Avenue (County Road 338). Parking is available at the Monument. The Monument offers views of the surrounding villages and the Hudson River and is ornamented with scenes of the American Revolution. The Monument is staffed by an NPS ranger and operates during the same hours as the Schuyler Estate.

Victory Woods

Victory Woods is located on Route 32 in the Village of Victory. No improvements have been made to Victory Woods yet. The site is currently undergoing an archeological assessment and cultural landscape assessment. No parking is to be allowed on this property.

Battlefield Unit

The Battlefield Unit can be accessed from Route 4 or Route 32. There is a visitor center at the Battlefield, which is generally open daily year-round. Parking is available near the visitor center. The Battlefield tour road is open seasonally (April through November) and offers a self-guided auto tour with ten tour stops.

3. Canal Related Sites

Lock 5

Lock 5 is a working lock located on the Hudson River north of the Village of Schuylerville and is under the jurisdiction of the New York State Canal Corporation. There is currently a private tour boat company that operates from a dock at Lock 5 and offers various tours on the Hudson River north and south of the lock. There is a grassy picnic area between Lock 5 and the junction lock (not in operation), which is just to the west of Lock 5.

Old Champlain Canal

The old Champlain Canal runs from Lock 5 to the Schuyler Estate, although it is not navigable over the entire course due to siltation and embankments that now carry roads over the old canal. The Village of Schuylerville has developed a walking trail along the old canal towpath, known as Schuyler's Canal Park Towpath Trail. The towpath trail links the Schuyler Estate and Lock 5, and passes by a series of historical sites that are outlined in a brochure available at the Visitor's Center. Information signs are also posted along the trail. The old canal turning basin is located just south of Route 29.

4. Other Local Historic Sites

Pocket Parks

The Pocket Parks – a series of proposed small parks to interpret historical areas in Schuylerville and Victory – are a project of the Lakes to Lock Passage. Each of the Pocket Parks provides limited parking and interpretive signs. Some provide additional amenities such as picnic tables and seating. Each of the proposed Pocket Parks is described below.

Colonel Morgan Park

Located on County Road 338 between Route 29 and the Saratoga Monument, this site offers views of the Old Saratoga area along with a New York State Museum marker and a cemetery. "Drive-by" interpretation was deemed appropriate for this site, which could be included in a brochure or audio tour.

American Lines

This site is located at the intersection of Route 29 and County Road 338, offering a gateway to visitors arriving in Schuylerville from the west. There is a sign here listing attractions in the Old Saratoga area. Suggestions for improvements to the site include silhouettes of soldiers and a walking path.

German and Canadian Encampments

This site is located on Route 29 in Schuylerville, west of Route 4. The site can be used to interpret the encampment of British forces and the nearby railroad station.

Early French & Indian War Forts and Burgoyne Sword Surrender Site
These sites are located on Route 4, south of the Schuyler Estate, and may serve as a southern gateway to the area with a community kiosk.

Mill Park

Located along Fish Creek in the Village of Victory, this site offers views of Fish Creek and the opportunity to interpret the mills and the development of the village.

Route 32 Village Gateway

This site, located just south of the Village of Victory, would provide a gateway to the area for visitors traveling from the Battlefield Unit to Schuylerville on Route 32.

Fort Hardy Park

Fort Hardy Park is currently owned by the Village of Schuylerville and is located on the historic site of Fort Hardy. This park is much larger than the other Pocket Parks. Schuyler's Canal Park Visitors Center is located in Fort Hardy Park. The park also currently contains a gazebo and short boardwalk, a sandy area for launching small watercraft on the river, and multiple baseball fields. Schuyler's Canal Park Towpath Trail passes along the western edge of the park. The Town of Saratoga offices are located adjacent to the park. Parking is provided at Fort Hardy Park and restrooms are available in the Visitors Center.

Stark's Knob

Stark's Knob, located north of the Village of Schuylerville, is a unique geologic formation of volcanic origins. The area also has historical significance in the Battles of Saratoga. The Stark's Knob Scientific Reservation is under the management of the New York State Museum. Limited parking is available along Route 4 at the Stark's Knob/Knox Trail Pocket Park, from which visitors can then walk to the knob itself.

Villages of Schuylerville and Victory Tour Sites

The brochure published by the Old Saratoga/New Schuylerville Association, entitled "A Walking and Driving Tour of the Villages of Schuylerville and Victory," lists numerous historical sites within the area. Many of these sites have been identified under other categories above, such as the NPS sites and the Towpath Trail sites. Additionally, the tour includes numerous historic markers that commemorate events of the American Revolution and buildings of significant historical architecture.

Hudson Crossing

The Hudson Crossing project is focused on the development of an educational park on the island near Lock 5 and on land on the eastern bank of the Hudson

River north of Lock 5. Currently, the Adirondack School is located in the area east of the river. Future plans include the development of the Hudson River Environmental Education Center and camping grounds on the island. The reopening of the Dix Bridge to pedestrian and bicycle traffic in order to allow a connection across the river from Lock 5 is also part of the future plan.

Victory Mill and mill remnants along Fish Creek

Victory Mill, located in the Village of Victory on land that juts into Fish Creek, is not open to the public but is an important historic site to view from outside. There are also mill remnants along the banks of Fish Creek, which provide a glimpse of the area's industrial history. The banks of the creek are wooded and existing trails leading to the water have become overgrown.

Schuylerville Business District

Many small shops are located along Broad Street in the Village of Schuylerville, with a concentration of shops between Burgoyne Avenue and Ferry Street. These unique shops provide another destination for visitors.

5. Other Regional Historic Sites

Historical sites exist beyond the Villages of Schuylerville and Victory as well. Of course, foremost among these is the Saratoga NHP Battlefield Unit in Stillwater. The large number of other regional historic sites and the large geographic area over which they are spread make it impossible to consider each site explicitly within this study. However, this study, and visitors to the Village of Schuylerville and Saratoga NHP, should be aware that additional points of interest exist in the region that are worth exploring. The establishment of formal connections to these sites presents a potential topic for future studies, provided that these regional sites desire to increase their visibility and attract additional visitors. These regional sites include:

- The Saratoga National Cemetery in the Town of Saratoga
- The historic carriage route to Saratoga Lake
- Natural springs in Quaker Springs
- Washington County sites (Towns of Greenwich and Easton)
- Historic Saratoga Springs and Racetrack

B. Inventory of Transportation System Linkages between Sites

This section presents an inventory of existing and planned transportation linkages between the key points of interest identified above. These linkages are also illustrated on Figure A-2.

1. Existing Linkages

a) Vehicular

The main roadways serving the area are New York State Route 4, New York State Route 32, New York State Route 29, and County Road 338 (Burgoyne Avenue). Route 4 is the major north-south connection through the area and provides a connection between the Battlefield Unit and the Old Saratoga Unit. Route 32 provides a connection between the

Village of Victory and the Village of Schuylerville. The Battlefield Unit also has an entrance from Route 32. At the southern edge of the Village of Schuylerville, Route 4 and Route 32 join and become Broad Street, which is the main street through the village. These two routes split again north of the village, with Route 4 crossing over the Hudson River. Route 29 is the major east-west connection from Schuylerville to Interstate 87 (Adirondack Northway) and the City of Saratoga Springs, approximately ten miles to the west. Traveling from the west, Route 29 intersects Broad Street on the northern end of the Village of Schuylerville, turns south along Broad Street, and then continues over the Hudson River along the southern edge of Fort Hardy Park. The portion of Route 29 west of Broad Street is called Spring Street and the portion of Route 29 east of Broad Street is called Ferry Street within the Village of Schuylerville. Burgoyne Avenue provides a connection between the main business district of Schuylerville (on Broad Street) and the Saratoga Monument, west of the downtown area.

b) Transit

Currently there is no transit service available to transport visitors between the various points of interest in the Old Saratoga Unit or to the Battlefield Unit.

c) Pedestrian and Bicycle

Route 4 is designated as Bicycle Route 9. Due to the high speeds of vehicles on Route 4, this route provides a feasible bicycle connection between the Battlefield Unit and the Old Saratoga Unit only for experienced cyclists.

Sidewalks are provided along both sides of Broad Street within the main business district of Schuylerville. Route 32 has a sidewalk along one side near Victory Woods, although pedestrians must cross the street just before reaching the intersection with Broad Street. The sidewalk on Spring Street extends only a limited distance west of Route 4. East of Route 4, a sidewalk exists on the south side of Ferry Street, requiring pedestrians to cross Ferry Street in order to access Fort Hardy Park. This is a busy road and can be a difficult crossing. A sidewalk on one side of Burgoyne Avenue extends almost to the Saratoga Monument. The limits of these sidewalks are depicted on Figure A-2.

The only maintained off-road path is the Schuyler Canal Park Towpath Trail. This 1.5 mile trail extends from the Schuyler Estate to Lock 5 along the eastern edge of the Old Champlain Canal. The path is continuous except for a break between the Post Office and the Town Hall where pedestrians must navigate through parking lots and cross Route 29. This is a soft-surface (unpaved, stabilized turf) trail.

d) Waterways

The Old Champlain Canal is currently not available as a transportation link. Fish Creek runs along Route 32 and passes by Victory Woods and the Schuyler Estate before connecting to the Hudson River. There is a dam on Fish Creek west of the Schuyler Estate that prevents watercraft from passing between the creek and the Hudson River. There is a public boat launch on the Hudson River at the northern end of Fort Hardy Park and an area for launching small watercraft in the park. There is a marina just south of the Ferry Street bridge over the river. A private tour boat company offers trips along the Hudson River leaving from a dock at Lock 5. Currently, there is no docking available near the Battlefield Unit.

2. Planned Linkages

There is a path on the property owned by Reliant Energy, which is located on the south side of Fish Creek across from Victory Woods. The path provides a connection from Route 4, just across the road from the Schuyler Estate, to Evans Street (a local road on the south side of Fish Creek that intersects Route 4 south of the Schuyler Estate) and the Mill Park pocket park. The trail is currently overgrown and not easy to navigate. Reliant Energy has expressed willingness to allow public use of the trail if an outside group will invest in improving the trail.

The Schuylerville Harbor Project is interested in restoring the Old Champlain Canal, the harbor (turning basin), and the junction lock. The ultimate goal of the project is to restore the old junction lock to working order and make the canal navigable from the junction lock to the dam on Fish Creek, with docking available near the downtown area. This project would involve removal of sediments in the canal to restore its original depth, construction of multiple docking areas, and construction of multiple bridges over the canal.

The Dix Bridge, north of Lock 5, is currently closed to all traffic. This bridge connects Saratoga and Washington Counties and is within the area that is planned to become Hudson Crossing. The purpose of the Hudson Crossing project is to create a bi-county park and environmental education center. The feasibility of reopening the bridge to pedestrians, snowmobilers, and bicyclists was studied as part of the Hudson Crossing master plan. The bridge is listed on the National Historic Register.

Reconstruction of Routes 4/32 and Route 29 within the Village of Schuylerville is planned as part of a New York State Department of Transportation (NYSDOT) project (PIN 1089.58.121). The project includes Broad Street from Fish Creek on the south to the village boundary on the north, Ferry Street between Broad Street and the Hudson River, and Spring Street between Broad Street and the western village boundary. The limits of this project are shown on Figure A-2. Preliminary plans include: sidewalks, street trees, and ornamental lighting on both sides of Broad Street; a sidewalk on the south side of Spring Street; and sidewalks on both sides of Ferry Street. Construction of the project is currently scheduled for 2008.

C. Current Utilization Patterns

A detailed examination of visitor reporting, visitor usage, and visitor experience at Saratoga NHP was performed by ConsultEcon and a full account of that work is included in Appendix B. A summary is presented in this section.

Total visitation at Saratoga NHP is the sum of visitors to the Battlefield Unit, the Saratoga Monument and the Schuyler Estate. Visitors to the Battlefield Unit fall into various categories, including tour road visitors, outdoor recreation visitors, and visitors to the Visitor Center when the tour road is closed. Total vehicles on the Battlefield tour road are counted and adjusted for vehicle occupancy and non-recreational trips to compute the number of visitors using the tour road. Hikers, bicyclists, skiers, snowshoers, and horseback riders are counted as outdoor recreation visitors.

1. Annual visitation

In 2003, the National Park Service Public Statistics Office reported 106,862 recreational visits to the Saratoga NHP. This figure placed Saratoga NHP high in the middle-third of all U.S. National Parks for annual visitation volume in 2003. Data in Appendix D in this report finds that Saratoga NHP had an estimated 114,007 recreational visits in calendar year 2004. This represents a 6.7 percent increase over recreational visitation in 2003.

2. Daily and seasonal variations

In 2003, approximately 55% of total visitation occurred on weekends and holidays. The Schuyler Estate and the Saratoga Monument are closed from November through April. Both of these sites saw the majority of their visitors in 2003 during July and August. The Battlefield tour road is generally closed during the months of December, January, February, and March and almost 90% of tour road visits in 2003 occurred between May and October. The number of outdoor recreation visitors is weather-dependent and fluctuates according to season, with skiers and snowshoers limited to the winter months and hikers, bicyclists, and horseback riders prevalent during the warmer months.

3. Usage of park units

As shown by Figure 2.1, the Battlefield Unit attracts many more visitors than the Saratoga Monument and the Schuyler House, with Battlefield tour road, Battlefield outdoor recreation, and Battlefield Visitors Center visits combined accounting for approximately 90% of recreational visits in 2003. More than half of the recreational visits to Saratoga NHP in 2003 included the Battlefield tour road. A significant portion of 2003 recreational visits to the park fell into the outdoor recreation category, which includes hikers, bicyclists, skiers, snowshoers, and horseback riders. Most of the outdoor recreation visits were by hikers (approximately 20,700 visitors) or bicyclists (approximately 11,700).

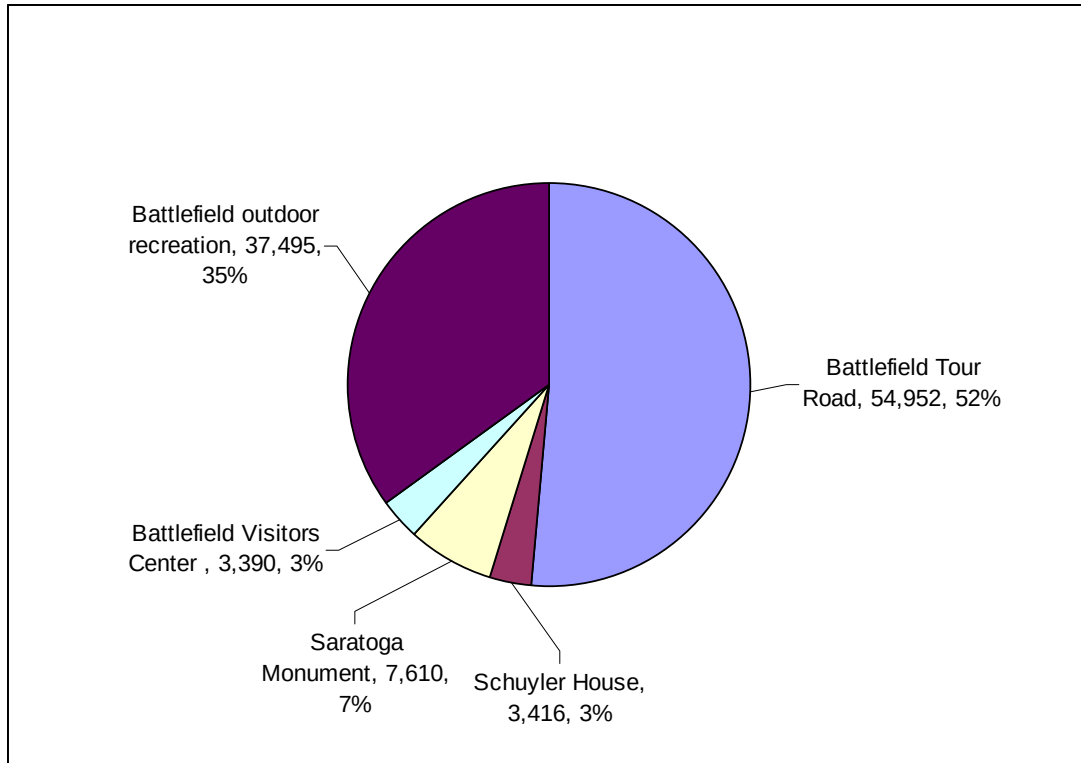


Figure 2.1: 2003 Recreational visitation at Saratoga NHP by park unit and usage*

*Note that Battlefield Visitors Center counts only represent visits when the tour road is closed. Outdoor recreation visits include hikers, bicyclists, skiers, snowshoers, and horseback riders.

4. Visitor characteristics

Studies were conducted in 1995 and 2001 to determine characteristics of typical visitors. Some of the main conclusions from these studies were:

- Approximately 40 percent of visitors come from outside of New York State
- Over 60 percent of visitors come in family groups
- First-time visitors account for over 50 percent of the park's visitation
- The typically length of a visit is 1 to 4 hours
- Most visitors use the Route 32 entrance to the Battlefield Unit
- Most visitors reported that Saratoga NHP was their primary destination; other primary destinations included Saratoga Springs, Saratoga Race Track, Lake George, and Saratoga National Cemetery.
- The approximate regional distribution of visitors arriving at the park was: 33% from the north, 42% from the south, 17% from the west, and 7% from the east.

5. Visitor satisfaction

Visitor satisfaction surveys are conducted annually. Based on results from the 1998 through 2003 surveys, visitors were generally satisfied with their experience. For each of the survey years, 90% or more of the respondents rated the quality of facilities, services, and recreational opportunities at Saratoga NHP as "good" or "very good," with less than 10% of respondents giving these items a ranking of "average," "poor," or "very poor."

6. Summary and implications for ATS at Saratoga NHP

As expected, a majority of visitors come to the park on weekends and holidays; therefore, daily visitation for weekends/holidays and weekdays should be considered separately when evaluating the demand for an ATS service. The Battlefield Unit attracts a far greater number of visitors than the Old Saratoga Unit sites (Saratoga Monument and Schuyler Estate); hopefully connecting the sites with an ATS will encourage more of the Battlefield Unit visitors to fully experience all units of the park. Outdoor recreation visits already account for a large percentage of total recreational visits and consideration should be given to increasing the availability of multi-use trails in the area. This may encourage current hikers, skiers, snowshoers, bicyclists and horseback riders to extend their stay in the area as well as to attract additional outdoor enthusiasts to the area. The overwhelming majority of visits occur throughout the warmer-weather months of May through October, so a year-round transit service is probably not warranted. Trails may still continue to be used throughout the winter, though.

A majority of visitors are first-time visitors and a significant proportion of visitors are from outside of New York State. These visitors are likely to be unfamiliar with the area, which underscores the need to provide visitors with information about nearby historic sites as well as to strengthen the connection between the various NPS sites. Most visitors access the Battlefield Unit from Route 32, indicating that they are not visiting the Old Saratoga Unit sites as part of their visit (this is supported by the data in Figure 1.1, as well) and underscoring the need for a centralized visitor orientation center to provide information on all of the local attractions. Visitors to the park are generally pleased with their experience.

D. Review of Current ATS Activity at Other Sites

1. ATS at Comparable National Park Service Sites

Discussions of alternative transportation systems (ATS) activities across the U.S. typically include the successful systems operating at large parks such as Zion, Acadia, and Yosemite. These parks see millions of visitors each year and shuttle buses have been implemented in order to decrease traffic congestion or respond to excess parking demand, thereby enhancing the visitor experience. In contrast, Saratoga National Historical Park (NHP) attracts fewer than 200,000 visitors per year, as discussed in the previous section. The interest in ATS at Saratoga NHP stems from the need to connect multiple, discontinuous units of the park and provide visitors with information regarding the historical significance of the park and its surrounding area. There are also waterways and points of interest in the neighboring villages and towns that could be better integrated with the Saratoga NHP in order to provide a more complete visitor experience and understanding of the historic significance of the area.

The purpose of this task was to compile information on ATS at other National Parks, which could eventually be used to identify potential ATS solutions for Saratoga NHP. Ideally, these sites should be similar to Saratoga NHP based on size, visitations, the type of visitor experience, and setting. Visitations were considered first, since this variable would directly affect the demand for ATS and the type of service that could reasonably be offered. Using information available on the National Park Service (NPS)

Public Use Statistics website², a list of over thirty NPS Battlefields and Historical Parks with fewer than 500,000 recreational visits in 2003 was compiled. This list was then compared to the Field Reports available from the Federal Lands Alternative Transportation Systems Study, Volume 3: Summary of National ATS Needs³. These Field Reports summarize the results of research conducted by Cambridge Systematics and BRW Group for the Federal Highway Administration and the Federal Transit Administration concerning ATS needs for numerous Federal lands. Field Reports were not available for every NPS site, though. Only thirteen of the sites with fewer than 500,000 recreational visitors were included in the Field Reports. The transportation systems at these thirteen sites were further investigated using the Field Reports, the individual park websites,⁴ and telephone interviews.

Most of the parks investigated consist of multiple sites, requiring visitors to travel between geographic units in order to fully experience the park – similar to the Saratoga NHP. Transit access is available to seven of the parks, although in some cases only limited portions of the park can be accessed by local public transportation. Bicycle and pedestrian access is mixed – some parks have designated walking/biking trail systems or benefit from a location in dense urban areas that encourages walking and biking, while a few parks actually prohibit or discourage bicycles within the park. Four parks currently provide transportation service; these services are described below. Detailed research results are included in Appendix C.

Harpers Ferry National Historical Park (Harper's Ferry, West Virginia)

Due to severe parking restraints, Harpers Ferry NHP has seen great success with its shuttle bus service. In 2003, there were approximately 264,000 recreational visits to the park, making it one of the smaller parks to operate a successful ATS service. The shuttle bus began operating between a new off-site parking lot and the “Lower Town” area (an historic residential/commercial area) in 1990 in order to relieve overcrowding in the previous parking lot. Typically, four buses run each hour, operating on a fixed-route, dedicated public roadway. The vast majority of visitors use the shuttle service, as parking in the Lower Town area is extremely limited. (Commuter rail access to the park is available and on weekends limited parking is available at the rail station, which is within walking distance of the park.) A walking trail between the parking lot and the Lower Town is nearly complete. Bicycles are discouraged within the park. There is no additional charge for the shuttle service on top of the park entry fee. The service uses standard 35-foot urban transit buses. Although the park owns the six buses used for the shuttle service, operation and maintenance are provided through a contract with the regional transit authority.⁵ Funds for operating the service come from the park's general operating budget and do not have a dedicated source. However, there has been some thought given to adding \$1.00 to the park entry fee

² <http://www2.nature.nps.gov/mpur/>

³ Cambridge Systematics, Inc. and BRW Group, Inc. August 2001. Federal Lands Alternative Transportation Systems Study, Volume 3: Summary of National ATS Needs. Available at <<http://www.fta.dot.gov/library/policy/fedland/v3/appc.html>> Accessed July 16, 2004.

⁴ <http://data2.itc.nps.gov/parksearch/atoz.cfm>

⁵ Telephone conversation with Ken Starnes, Harper's Ferry NHP, August 3, 2004.

or dedicating \$1.00 of the current entry fee to an account that would be used for maintenance and replacement of the buses in the future.

Pecos National Historical Park (Santa Fe, New Mexico)

The Pecos NHP in New Mexico is a rather small park when ranked by visitation numbers – only about 38,000 recreational visits in 2003 – but consists of multiple sites spread over a large region. Access to the park is only feasible by car, as the park is quite remote, and parking is provided at two lots. Also, biking is not allowed within the park. Three different tours are operated using standard minivans or a 15-passenger van rented from the General Services Administration. There is typically one van tour each day and visitors must make a reservation in order to get a seat on the tour. Rangers drive the vans and provide information onboard; they also lead walking tours in some areas of the park. Due to capacity limitations and the requirement to make prior reservations, it was estimated that only 5% of visitors use the van service. There is no fee for the service in addition to the normal park entry fee.⁶

Adams National Historical Park (Quincy, Massachusetts)

Adams NHP consists of three sites, including a visitor's center, near Boston. The urban environment surrounding the historic sites makes driving to and parking at each site difficult. Currently, the park runs a trolley service between the sites. The NPS purchased three trolleys for use at the park, although currently only two are being used. One trolley is generally in service at any time, with the second trolley used as a relief vehicle. A private contractor is responsible for drivers and maintenance of the trolleys. No interpretation is provided on the trolley due to past difficulties maintaining the quality of narratives provided by non-NPS employees and current lack of funding to provide NPS staff on the trolleys (tours are available off the trolley at each of the sites). The trolley runs on a continuous thirty-minute loop with scheduled arrivals at each site at regular intervals. Total visitation to the park was approximately 207,000 in 2003, with just under 27,000 trolley visits and 57,000 site tours. There is currently no fee for use of the trolley, although the park does charge an entrance fee. The park is exploring the possibility of increasing the entrance fee, with the additional amount being dedicated to transportation services. Funding for the trolley comes from the park's general operating budget. In the future, Adams NHP would like to form a partnership with other local agencies to run the third trolley as a local "heritage trolley" route. There is also a serious proposal to begin a water transport service between Boston NHP, Harbor Islands State Park, and Adams NHP.⁷

Marsh-Billings Rockefeller National Historical Park (Woodstock, Vermont)

Marsh-Billings Rockefeller NHP is a relatively new park, having opened in 1998. In 2003, Marsh-Billings Rockefeller NHP saw approximately 33,000 visitors. Marsh-Billings Rockefeller NHP does not have a parking lot on site, but visitors may park at the Billings Farm and Museum Visitor Center parking lot, which is

⁶ Telephone conversation with Lorenzo Vigil, Pecos NHP, August 3, 2004.

⁷ Telephone conversation with John Stanwich, Adams NHP, July 27, 2004.

directly across the street from the park. There is a steep hill that visitors must climb from the Farm parking lot to the park. This hill is difficult for elderly or disabled visitors to climb; therefore, the park uses eight-passenger vans to transport visitors up the hill when needed. Although this could be considered an “on-demand”-type service, it is actually only used when tour buses arrive with many visitors who cannot walk up the hill. The van service has no set schedule; when needed, arrangements are made for the van, driven by a ranger, to meet a tour bus at the parking lot.⁸ This service is funded through the park’s general operating budget.

A fifth park, Lowell National Historical Park, was also investigated, although its visitation was above 500,000 recreational visits. This park was of interest due to its successful trolley and canal boat services, detailed below.

Lowell National Historical Park (Lowell, Massachusetts)

Lowell NHP is one of the smaller sites often cited as a successful ATS operation, with about 685,000 recreational visits in 2003. Lowell NHP operates both historic trolleys and canal boats between the multiple historic sites within downtown Lowell, Massachusetts. While the main purpose of the trolleys is to provide a transportation service between points of interest in the park, the main purpose of the canal boats is to provide an interpretive service to visitors. The canal boats are driven by boat masters from the US Coast Guard. Rangers provide information on canal tours and interpretive signs guide visitors between the trolleys and the canal boats.⁹ The trolley service is free, but the interpretive canal boat tours cost \$8.00 for adults.¹⁰ Fees from the canal boat tours are used to pay for operation of the service, including paying the boat captains. Money to operate the trolley comes from the park’s general operating budget, although the capital costs for acquiring the trolleys were paid with non-NPS funds, such as ISTEA money. In 2003, approximately 4700 people took a canal tour and over 10,000 people utilized the trolley service.¹¹

A feasibility study for expansion of the trolley system was completed in December 2002. This study explored expanding the trolley system from its current 1.5 mile route to a five or six mile route. The intention is for the expanded system to be operated through a partnership between the City of Lowell, the local metropolitan planning organization, the local transit agency, and the Seashore Trolley Museum. The current trolley is operated by NPS and runs on a fixed schedule meant to coincide with the canal tour departures.¹²

⁸ Telephone conversation with John Gilbert, Marsh-Billings Rockefeller NHP, July 23, 2004.

⁹ U.S. Dept. of Transportation Volpe Center. 2003. National Park Service Accomplishments in Alternative Transportation. Available at <<http://www.nps.gov/transportation/alt/documents/atpaccomplishments.pdf>> Accessed July 16, 2004.

¹⁰ U.S. Dept. of Transportation Volpe Center. 2003. Partnering for Success: Techniques for working with partners to plan for alternative transportation in National Park Service units.

¹¹ Telephone conversation with John Marciano, Lowell NHP, September 7, 2004.

¹² Telephone conversation with Christine Briggs, Lowell NHP, July 21, 2004.

General ATS needs at NPS sites

There were some recurring themes in the ATS needs identified in the Field Reports for the NPS sites. Since most parks consisted of multiple sites, the need for better linkages between the sites was mentioned frequently. Typically, a shuttle bus was the desired mode for transporting visitors between sites, although two locations did consider the possibility of waterborne transportation on a river or a creek. Bicycle and pedestrian path improvements were also frequently mentioned as an ATS need, as was better signage for orienting visitors. From telephone conversations with park staff it was apparent that many parks would like to implement more organized tours, both to provide transportation and interpretive information to the visitors, but that lack of staff and funding prevented the parks from offering these services.

2. ATS at non-NPS sites

ATS activities at non-NPS sites were not researched in great depth. However, over the course of this project, several examples of ATS activities at non-NPS sites were found. Brief descriptions of these ATS examples are included below.

- Niagara Falls (Ontario) People Mover – Motor coaches travel a 19-mile loop along the Niagara Parkway with 22 designated stops. Headways are approximately 20 minutes. Visitors pay a single day-use fee and can get on and off any people mover bus at any stop along the route throughout the day. The service generally runs daily from April through October.
- Lake Placid, NY, personal electric vehicles – Visitors to this Adirondack village can rent electric vehicles that can be used on local streets to reach many tourist attractions.
- Onondaga Lake Park (Syracuse, NY) tram – An open-air tram makes a 2.5-mile loop on a paved path also used by bicyclists and in-line skaters in this county park. There are five stops along the route. The purchase of the two tram vehicles was sponsored by a local grocery store and rides are free (although there is a suggested donation of \$1 per ride).

3. Research Conclusions

The primary purpose of ATS at Saratoga NHP will be to enhance the visitor experience by providing linkages between the various park units and other local historic sites. While there are plenty of examples of ATS use in the National Parks, most of these parks see far more visitors each year, and thus have much greater demand on their transportation systems, than Saratoga NHP. Although the sample of NPS sites was limited, some similarities did emerge. For parks with multiple units, facilitating connections between these sites and providing interpretation for the visitors are common concerns. The parks are also interested in improving bicycle and pedestrian connections and providing better signage to direct visitors to the park and to assist circulation within the park. Where ATS does exist, it is generally in the form of a shuttle bus or van operating on a regular

schedule. The one example of an “on demand”-type operation at an NPS site is provided as a service to mobility-impaired visitors and is not available to most visitors.

Although there are examples of successful trolley and/or boat tour services in the discussion above, there are factors in each of these examples that limit the applicability to Saratoga NHP:

- Lowell NHP operates a highly successful trolley and canal boat system. Although Lowell is one of the smaller parks with successful ATS, its visitation is still significantly higher than Saratoga NHP.
- Harper’s Ferry has a visitation level more comparable to Saratoga NHP; however, the shuttle service at Harper’s Ferry is successful in large part due to the extremely limited on-site parking.
- Adams NHP also operates a successful trolley service with relatively low visitation. The location of multiple park sites within a dense urban environment, where driving and parking are difficult, encourages visitors to take advantage of the trolley service.

Examples of ATS were also found at non-NPS sites, although research into these sites was only cursory. The non-NPS sites offer additional ideas to consider in developing an ATS for Saratoga NHP, such as developing partnerships with local businesses to fund ATS service or offering electric vehicles for individuals or small groups to rent.

The final conclusion of this research is that there are few examples to follow of ATS service that are directly applicable to the situation at Saratoga NHP. Existing ATS examples may be used as a starting point to generate new ideas that will be more appropriate to the situation at Saratoga NHP. In order to provide transportation that enhances the visitor experience at Saratoga NHP, new and creative solutions will need to be employed.

III. Evaluation of Alternatives

A. Overview of potential ATS linkages

This section provides an overview of ATS options for Saratoga National Historical Park. Potential ATS linkages were identified in the Old Saratoga Unit and the Battlefield Unit based on the location of key points of interest, the inventory of existing and planned transportation linkages, and the overall project goals.

An ATS should be designed to achieve the following project goals:

- Concentrate visitor use
- Focus parking in non-sensitive areas
- Reduce auto travel
- Improve access
- Encourage increased visitation to the Saratoga Monument, Schuyler House, Victory Woods, and associated sites

Other considerations that should also be taken into account when evaluating ATS options include:

- Use of existing or planned facilities
- Availability of right-of-way
- Level of service provided between critical sites
- Connections with other Unit activity centers and attractions
- Traffic impacts on existing roadways
- Parking requirements
- Integration with existing land use and economic development plans
- Opportunities for interpretation of NPS sites and the overall historical context of the region

Potential ATS options are described in this section in terms of these goals and considerations. The ATS options can be grouped into three categories of projects: facilities improvements, audio tours (in private automobiles), and transit service. A framework of potential ATS options is shown in Figure A-7. As illustrated by this figure, facilities improvements will allow for multiple modes of travel between the points of interest in the Old Saratoga Unit and between the Old Saratoga Unit and the Battlefield Unit. Figure A-7 also illustrates potential transit connections between these sites.

1. Facilities improvements

Facilities improvements will allow visitors to use their own personal bicycles, canoes, kayaks, or vehicles to travel between sites as well as to walk, run, or hike. Facilities improvements would also create opportunities for rental services, most likely run by private concessionaires.

a) Docking facilities

The Hudson River presents a natural linkage between the Old Saratoga Unit and the Battlefield Unit. Water-based ATS could take advantage of the existing dock at Lock 5. NPS owns property along the Hudson River at the Battlefield Unit that could be used for a docking facility and will soon acquire waterfront property at the Schuyler Estate that could also be used for this purpose. New docking facilities at the NPS units would complement the tour boat docking facility proposed in the Fort Hardy Park Master Plan. With these improvements, NPS would be able to pursue a partnership with a tour boat operator to transport visitors between the Old Saratoga Unit and the Battlefield Unit. Visitors also would be able to travel between sites in canoes or kayaks, either personally-owned or rented. Visitor parking would be concentrated at the new visitor orientation center and the main dock at Fort Hardy Park or Lock 5, with very limited parking at the dock near the Battlefield Unit. When choosing a site for a docking facility at the Battlefield Unit, consideration should be given to the dock's visual impacts and the safety of visitors crossing Route 4.

b) Sidewalk improvements

Sidewalk improvements are necessary to allow visitors to safely walk between sites within the Old Saratoga Unit. There is the potential to work with the NYSDOT to accomplish sidewalk improvements since the NYSDOT has an upcoming project (PIN 1089.58.121) that includes Route 4 and Route 29 within the Village of Schuylerville. Sidewalk improvements will need to consider ADA requirements. Improved sidewalks within the Village of Schuylerville will encourage visitors to patronize the local businesses and may reduce automobile traffic if visitors choose to leave their cars in one location during their visit.

c) Multi-use paths

Multi-use paths would have a paved surface and could be used by walkers, runners, bicyclists, and in-line skaters. Multi-use paths could also be used by cross-country skiers and snowshoers in the winter months.

Two opportunities for multi-use paths have been identified:

- Improve the existing Schuyler Canal Park Towpath Trail from a soft-surface trail to a multi-use path.
- Construct a new multi-use path connecting the Schuyler Estate to the Battlefield Unit.

A multi-use path between Lock 5 and the Battlefield Unit would not only create a linkage between Saratoga NHP units but would also be a significant recreational attraction in the region. This path would give visitors the opportunity to run, bike, skate, etc., over approximately 10 miles of a relatively flat, paved surface without any conflicts with vehicular traffic. This option could utilize portions of an existing trail along the Champlain Canal. However, there will likely be right-of-way issues with an extended multi-use path because various public and private entities have ownership of the canal between the Schuyler Estate and the Battlefield Unit. Parking could be concentrated at any point of interest along the path.

d) Soft surface trails

Soft surface trails would not be paved and could be used by runners, hikers, and snowshoers. These trails are appropriate in areas where there are significant grades or where a multi-use path would be too intrusive in the landscape. Soft surface trails require significantly less initial investment and ongoing maintenance than multi-use paths. Three opportunities for soft surface trails have been identified:

- Conservation easements on the Saratoga Apple property present the opportunity for trails linking Route 4 (near Lock 5) to the Saratoga Monument (with a crossing on Route 29).
- Trails could also be used to access Victory Woods, both from Route 32 in the Village of Victory and from the Saratoga Monument. A trail from the Saratoga Monument to Victory Woods would allow parking to be concentrated at the Monument.
- The trail on the Reliant Energy property could link the Schuyler Estate to the Village of Victory and the Mill Park pocket park. Some brush would need to be cleared from this trail and the trail should be clearly marked.

e) Vehicle connections

All of the sites of interest are easily accessible by automobile except for Victory Woods. Parking will not be allowed on the NPS Victory Woods property. One option for accessing this site is to create a small parking area on the Village of Victory property at the end of Monument Drive, adjacent to Victory Woods; however, this would bring traffic through a residential area. Another option is to create a small parking area off of Route 32 on the north side of Victory Woods on property owned by the Revolutionary Land Corporation. Both of these options would require coordination with the property owners in order to acquire easements or purchase land. Parking and vehicular access will need to be relatively unobtrusive. Primary access to Victory Woods will most likely be provided by trails from the Saratoga Monument; however, a closer parking area should be provided for visitors with limited mobility.

f) Dix Bridge improvements

Currently, the Dix Bridge is closed to all traffic. With improvements, the bridge could be reopened to pedestrians and bicyclists. This would provide a link between the Old Saratoga Unit sites and other sites of interest and recreational opportunities in Washington County, on the east side of the Hudson River.

g) Battlefield tour road

The Battlefield tour road currently has a paved shoulder that is wide enough to allow bicyclists and hikers to share the road with automobiles. A steep grade and sharp curve at the end of the tour road present a challenge to bicyclists who want to complete a loop tour. Also, the tour road does not end at the Visitor's Center; rather, it ends in an intersection with the park entrance road. Visitors must travel on the entrance road to complete the loop. The entrance road is a two-lane roadway without paved shoulders and although it is owned by the park, local traffic uses the road as a shortcut between Route 4 and Route 32. This configuration raises safety concerns regarding conflicts between bicyclists and automobile traffic. Possible solutions to this issue include routing

bicyclists along a local road (Lohnes Road) that runs parallel to the park entrance road and/or designating a section of the park entrance road as a one-way road.

2. Audio tours

An audio tour, on compact disc (CD), is currently available for purchase (\$6.95) to people who wish to tour the Battlefield Unit in their own vehicles. The existing audio tour provides details about all ten tour stops and includes fife and drum music. The tour can take as little as 30 minutes or as long as two hours, depending on how much time people take outside of their cars to walk each site. The audio tour concludes by informing visitors that there are additional Park sites – the Saratoga Monument and the Schuyler Estate – located north of the Battlefield in the Villages of Schuylerville and Victory. However, the tour does not go on to provide details about these sites. An upgraded audio tour should include information about the Old Saratoga Unit sites. Cell phone audio tours are another possibility that is being used in the Minute Man National Historical Park and a few cities in the U.S. This option would encourage visitors to visit multiple units of the park and would utilize the existing Battlefield tour road. An audio tour could also be used by school groups that visit the Park and tour the Battlefield on their own school bus.

3. Transit service options

Transit service at Saratoga NHP should be designed to meet three purposes:

- To provide visitors an alternative means of touring the Battlefield Unit, with the opportunity for more interpretation than can be provided on a self-guided audio tour.
- To provide visitors a means of traveling between the Old Saratoga Unit sites and the visitor orientation center other than driving their private vehicles to, and parking at, all of the sites of interest.
- To provide a connection between the Old Saratoga Unit and the Battlefield Unit, which will encourage visitors to extend their stay and experience all units of the park.

Two basic options exist for transit service: scheduled tours or continuous loop service. Visitors on a scheduled tour would remain on the same vehicle throughout the tour, although they may get on and off as a group at designated stops along the route. The vehicle would wait for the group at any stops. With a continuous loop service, the transit vehicle would continually travel the set route and visitors could get on and off as they pleased at the designated stops. Both of these options were considered for the Battlefield Unit, the Old Saratoga Unit, and the connection between the two units. The recommendations for each service are discussed below.

a) Scheduled Battlefield tour

A continuous service at the Battlefield Unit would need to run at short headways – ten to fifteen minutes – so that visitors would not feel stranded at tour stops. This short headway would require multiple vehicles and drivers, making it prohibitively expensive for the park to run; therefore, a scheduled tour service is recommended for the Battlefield Unit. Initially, the tour service could be limited to weekends and holidays, when

visitation and potential demand is greatest. Departures would need to be at regularly scheduled times and all visitors would need to begin the tour at the same location. This type of service would concentrate parking in a single location and reduce private automobile traffic on the tour road. Visitors would gain the convenience of only having to park their car once and, potentially, the opportunity to hear interpretation from a park ranger or guide.

As demand increases, additional tours could be added on weekends/holidays or the service could be run on weekdays. This service would have the same benefits as the introductory service, but would be able to serve more visitors.

b) Continuous Old Saratoga Unit loop

An Old Saratoga Unit transit route should include, at a minimum, the NPS sites (Schuyler Estate, Saratoga Monument, Victory Woods) and the proposed visitor orientation center. This service should run at relatively short (less than 30 minute) headways to give visitors flexibility and make the service convenient to use. As demand increases the service frequency could be increased and/or additional stops could be added to the route. A continuous loop service will allow visitors to start at any point along the route and get on and off at any location. Parking would not necessarily need to be concentrated at a single location, although parking would still be focused at tour stops. Visitors would also be able to walk between some sites with the option of boarding the transit service at any site.

c) Battlefield Unit – Old Saratoga Unit connection

A Battlefield Unit-Old Saratoga Unit connector service could be designed as an extension of the Battlefield tour service or as an extension of the Old Saratoga Unit service. The connector service could also be provided as a third, unlinked service, although this would require the purchase of an additional vehicle. The connector service would need to be scheduled to coincide with the Battlefield tour service. Visitors who choose to take a boat tour or travel along the multi-use path may also use the connector service in one direction.

d) Vehicle options

Numerous options are available for transit vehicles. The vehicles used in an ATS service should include the following characteristics:

- Wide doors and aisles for easy boarding
- Large windows for greater visibility for visitors
- Tested reliability and strength for long life
- Equipped to meet ADA standards including wheelchair capabilities
- Potential to use alternative fuels
- Adequate capacity to meet demand
- Ease of drivability for use by park personnel
- Ability to carry passengers' bicycles

Table 3.1 below summarizes selected characteristics of vehicles that could be used for the ATS at Saratoga NHP.

Table 3.1 – Potential ATS Vehicle Characteristics

Vehicle type	Seated capacity	Fuel options	Capital cost*	Design lifespan	Other notes
40-ft. transit	39-47	Diesel, CNG, LNG, hybrid electric, propane	\$250,000-\$500,000	12 years/500,000 miles	Limited maneuverability (large turning radius)
35-ft. transit	30-35	Diesel, CNG, LNG, diesel-electric hybrid	\$250,000-\$500,000	12 years/500,000 miles	
30-ft. transit	27-30	Diesel, CNG, LNG, diesel-electric hybrid, natural gas-electric hybrid, propane	\$175,000-\$250,000	10 years/350,000 miles	
22-ft. transit	22	Diesel, CNG, battery electric, hybrid electric	\$125,000-\$200,000	7 years/250,000 miles	Typically do not require a commercial drivers license (CDL)
Trolley replica	Comparable to transit buses of similar length	Diesel, CNG, battery electric, hybrid electric	Varies based on size and fuel system		The 30-foot model is typical; other lengths are available.
Tram	28-78 (depends on number of modules)	Electric, gasoline, diesel, propane	Varies based on size and fuel system		Typically used on closed-loop roadways or low-speed public roadways
Specialty/cutaway	Approx. 24	Gasoline, diesel, CNG	\$50,000-\$200,000		Typically do not require a CDL

*The cost of purchasing the vehicle is highly dependent on the configuration and the fuel type chosen.

Note also that these are figures from 2003.

CNG = compressed natural gas

LNG = liquefied natural gas

Source: "Transit Vehicles for National Parks: Selection Factors and Technologies," prepared by William P. Chernicoff and edited by staff of the Volpe National Transportation Systems Center, U.S. Department of Transportation, March 25, 2002 (updated March 2003). Available at <http://www.nps.gov/transportation/alt/vehicletech.htm>. Accessed 3/31/2005.

B. Specification of ATS facility and operating characteristics

1. Details of facilities improvements

a) Docking facilities

Three potential sites for a tour boat docking facility at the Battlefield Unit were identified: directly across from the Battlefield Unit entry road on Route 4, directly across from the Taylor House on Route 4, and River Road. A fourth option may exist if the Park Service is interested in forming a partnership with the Town of Stillwater, which recently acquired a riverfront parcel just south of the Battlefield Unit entrance on Route 4 for a passive recreation area; however, this option is not explored in detail here. Table 3.2 below compares the Battlefield Unit entry road, Taylor House, and River Road sites

based on transportation and site development criteria. Site development criteria are also illustrated on Figure A-8. Figure A-9 presents the site development concept for each of the three sites.

Table 3.2 – Evaluation of Alternative Sites for a Tour Boat Docking Facility at the Battlefield Unit

Evaluation Criteria*	Alternative Sites		
	Battlefield Entry Road	Taylor House	River Road
<i>Transportation</i>			
Roadway access	0	+	+
Sight distance	-	0	0
Pedestrian access	-	0	-
Bicycle Access	-	0	-
Potential transit access	0	0	0
<i>Transportation Subtotal</i>	-3	1	-1
<i>Site Development</i>			
Visual Impacts/Viewshed	+	-	0
Floodplain	-	-	-
Wetlands	-	0	-
Topography	+	+	+
Soils	0	0	0
<i>Site Development Subtotal</i>	0	0	-1
TOTAL	-3	0	-2

*The technical aspects of the evaluation criteria listed in this table are the same as those described for the visitor orientation site (preceding Table 1.1) in the previous chapter.

Key: + = Good = 1 point

0 = Average = 0 points

- = Poor = -1 point

The evaluation presented in Table 3.2 indicates that the Taylor House site provides the most advantages for a tour boat docking facility at the Battlefield Unit. However, development of a boat dock at the Taylor House site may be dependent on the completion of proposed improvements to this site. Also, this site seems to have the least visual screening and therefore will have the greatest impact on the viewshed. The evaluation presented in Table 3.2 weights all criteria equally. Since the visual impact is of particular importance to the Park Service, the Taylor House site may not be the ideal location for a boat dock even though this site received the highest rating in Table 3.2.

Cost estimates were developed for each of the three potential docking facility sites as follows:

- Battlefield Entry Road: \$60,000
- Taylor House: \$70,000
- River Road: \$90,000

Each of these estimates includes costs for vehicular and pedestrian access, parking, and the boat dock.

b) Sidewalk improvements

Specific sidewalk improvements that are needed include:

1. Sidewalk extension to the Saratoga Monument on Burgoyne Avenue. The existing sidewalk on the north side of Burgoyne Avenue nearly reaches the Monument but would require a short extension and a crosswalk in order for visitors to walk to the Monument. A longer extension would be necessary on the south side of Burgoyne Avenue.
2. Sidewalk extension to Stark's Knob and Lock 5 on Route 4, with crosswalk at Lock 5. This extension may be limited to the east side of Route 4 due to grades on the west side of the road.
3. Sidewalk construction on the north side of Route 29 (Ferry Street) from Route 4 to Fort Hardy Park.
4. Improved pedestrian crossing on Route 29 (Ferry Street) at Fort Hardy Park. Ideally, this pedestrian crossing should be accommodated with an underpass. One option may be to incorporate a pedestrian walkway through the new culvert planned for this location as part of the NYSDOT reconstruction project; however, the feasibility of this option has not been fully investigated.
5. Pedestrian crossing on Route 32 at Victory Woods.
6. Sidewalk construction on Evans Street and Pine Street. (This would provide a connection from the Fish Creek trail [see Section (d) below] to Route 32. A pedestrian bridge over Fish Creek would provide a shorter connection.)

The location of each of these sidewalk improvements is shown on Figure A-10.

c) Multi-use paths

Table 3.3 below outlines the characteristics of the proposed multi-use path improvements. Both of the proposed multi-use path options present the opportunity for wayside interpretive signs.

Table 3.3 – Multi-Use Path Details

ID	Path	Length	Grade	Right-of-way issues	Trailhead access	Construction issues	Linkages to key sites	Safety issues
A	Improved Canal Park Towpath Trail	1.5 mi.	level	Path already exists	Fort Hardy Park, Lock 5, Schuyler House	Pedestrian walkway at Rt. 29, other construction on Ft. Hardy Park site	Fort Hardy Park, Lock 5, Schuyler House	Rt. 29 crossing
B	Extended path (Battlefield to Schuyler Estate)	10 mi.	level	May be significant – ownership of adjacent properties varies	Schuyler House, Rt. 4 near the Battlefield	Bridges over canal, new construction	Battlefield, Canal Park Towpath	Rt. 4 crossing

As noted in Table 3.3, there are likely to be right-of-way issues with the extended multi-use path. Figure A-11 illustrates the parcels within the canal corridor that are owned by public entities. The remaining parcels are owned by various private individuals. Some sections of the canal were filled for the construction of Route 4. As shown on Figure A-11, the sections of the canal that still remain run along both the east and west sides of Route 4. Therefore, users of a multi-use path that follows the canal alignment will need a safe way to cross Route 4 north of the Battlefield Unit. The alternative is for the entire path to be constructed on one side of Route 4, but this will

force the path to cross numerous private properties. A path on the east side of Route 4 would require pedestrians to cross Route 4 at the Battlefield Unit, where there is high-speed traffic. This crossing could also serve the boat docking site at the Battlefield Unit. A path on the west side of Route 4 would require users to cross Route 4 in Schuylerville near the Schuyler House, where traffic speeds may be lower.

The multi-use paths are shown on Figure A-10 and are labeled according to the ID given in Table 3.3.

d) Soft surface trails

Three options have been identified for soft surface trails, as detailed in Table 3.4 below. All of these trails could include wayside interpretive signs.

Table 3.4 – Soft Surface Trail Details

ID	Trail	Approx. length	Grades	Right-of-way issues	Trailhead access	Construction issues	Linkages to key sites	Safety
A	Lock 5 to Saratoga Monument	2 mi.	significant	Apple orchard property owner has expressed interest in a conservation easement	Rt. 4 near Lock 5, Route 29 at Saratoga Apple, Saratoga Monument	Steep grades, ADA accessibility	Lock 5, Saratoga Monument	Rt. 29 crossing, Rt. 4 crossing, sidewalks to trailheads on Rt. 4 and Rt. 29
B	Saratoga Monument to Victory Woods	0.25 mi.	significant	Easement through cemetery	Saratoga Monument, Victory Woods	Steep grades, future build-out of cemetery	Saratoga Monument, Victory Woods	
C	Fish Creek trail	0.5 mi.	rolling terrain	Reliant Energy is interested in providing an easement	Rt. 4 near the Schuyler Estate		Schuyler Estate, Victory Woods, historic mill sites	Rt. 4 crossing at Schuyler Estate, Rt. 32 crossing at Victory Woods

The soft-surface trails are also shown on Figure A-10, labeled according to the ID given in Table 3.4. The alignments shown are only approximations and actual trails may follow a modified alignment. Any new trail connections are subject to agreement with private landowners.

The cost of providing access to Victory Woods was estimated at \$140,000, which includes \$100,000 for the trail from the Saratoga Monument to Victory Woods, \$30,000 for a small parking area at the end of Monument Drive, and \$10,000 for a trail connection to the sidewalk on Route 32.

e) Vehicle connections

Figure A-12 presents site development criteria for the Victory Woods site. Figure A-13 presents an access development concept for Victory Woods, which illustrates the potential for a small parking area at the end of Monument Drive and/or off of Route 32.

f) Dix Bridge improvements

Improvements to Dix Bridge are being pursued as part of the Hudson Crossing project.

g) Battlefield tour road

Three options were considered to provide bicyclists with a complete loop tour, as described below. These options are shown on Figure 3.1.

Figure 3.1: Battlefield tour road bicycle accommodations.

Option 1: Re-route bicyclists onto Lohnes Road.

Under this option, bicyclists would only need to travel on the park entrance road for a short distance (less than 500 feet) between the entrance road/tour road intersection and the entrance road/Lohnes Road intersection. Bicyclists could then travel on Lohnes Road, heading west toward the Visitor Center. A short connector link for bicyclists/pedestrians would be provided between the Visitor Center and Lohnes Road. Lohnes Road is a low-volume local road with a few single-family homes.

Option 2: Designate the park entrance road as one-way westbound from the Lohnes Road intersection to Route 32.

Under this option, the entrance road would be designated as one-way westbound between Lohnes Road and Route 32. This would allow designation of a bicycle lane without widening the road. Bicyclists would still need to travel on the entrance road with two-way traffic for the short section between the end of the tour road and Lohnes Road. Two-way traffic should be maintained from Route 4 to Lohnes Road so that residents on Lohnes Road still have convenient access to Route 4. Westbound traffic flow on the entire tour road is necessary so that a transit vehicle can easily reach the Battlefield visitors center after picking up passengers at the proposed boat dock on Route 4. (Since two-way traffic will be maintained on the portion of the entrance road east of the tour road intersection, the vehicle will be able to return to the dock after completing the tour.)

This option would prohibit eastbound through traffic on the park entrance road, forcing local traffic to use Route 32 (south of the Battlefield Unit), Lohnes Road, or other local roads to make a connection between Route 4 and Route 32. Vehicle counts conducted by Saratoga National Historical Park at various points on the park entrance road during the winter months (when very few people visit the Battlefield visitor's center and the tour road is closed) indicate that there are approximately 2000 vehicles per month that would be forced to use alternate routes if a section of the entrance road were designated as one-way.¹³ Using a conservative assumption that all of this commuter traffic occurs on weekdays (20 days per month), this results in approximately 100 vehicles per day being displaced from the park entrance road for the eastbound trip. This would not be a significant increase in traffic even if all of the displaced commuters used Lohnes Road.

Option 3: Additional bicycle connection from tour road to entrance road.

In addition to the problem of bicyclists sharing the tour road with two-way traffic, the existing tour road also has a steep grade (from tour stop 10 to the end of the tour road) and a sharp curve near the end. When the tour road is closed to vehicular traffic, the end of the tour road is gated and bicyclists have struck the gate due to limited sight distance and high speeds. One alternative is to create a bicycle connection between the tour road and the entrance road just before the tour road overpass (between tour stops 8 and 9). There appears to have been a road here at one point, as shown in Figure 3.2. The drawback of this option is that it would increase the distance that bicyclists would be

¹³ SNHP Public Use Reporting and Counting instructions state that there are inductive loop traffic counters installed on the entrance lane of the park entrance road at Route 4 and Route 32 and on the entrance lane of Phillips Road leading to the park entrance road. At the Route 32 entrance there were 2354 vehicles recorded in December 2003 and 1996 vehicles recorded in January 2004.

forced to travel on the two-way section of the entrance road. Bicyclists would also be unlikely to visit tour stops 9 and 10 (or would need to back-track on the tour road); however, the majority of bicyclists are likely recreational visitors who may not stop at the tour stops. This option could be implemented in combination with Option 1 or Option 2.

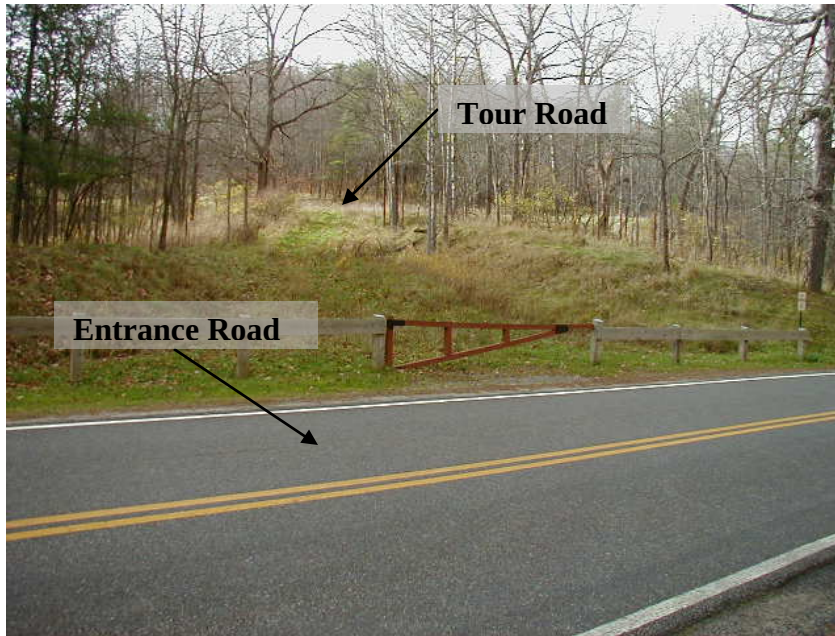


Figure 3.2: Potential bicycle connection from Tour Road to entrance road.

All three of the above options will still require bicyclists to share the entrance road with two-way traffic for a short section between the bicycle connection point and Lohnes Road. This section will need to be widened to provide a bike lane or parallel multi-use path.

2. Audio tour details

Two options for audio tours have been identified: cell phone tours and CD/cassette tape tours.

Currently, Minute Man National Historical Park in Massachusetts, offers cell phone tours in partnership with Spatial Adventures (www.spatialadventures.com). Visitors pay a fee (\$5.99 for one hour of narration at Minute Man NHP) to access a dedicated park phone number (visitors are also responsible for the normal airtime and roaming fees charged by their wireless carrier). Visitors call the phone number at each designated tour stop to hear narration for that stop. This service could be used by visitors touring the park by any mode, either in a personal automobile or on foot, by bicycle, etc. In considering this option further, a thorough evaluation of cell phone coverage in Park units should be accomplished. The park could receive a portion of the proceeds from this service.

The other option for audio tours is a CD/cassette tape that visitors could rent or purchase and play in the own car. Given the relatively low cost of reproducing CD's, it may be simplest to offer the CD's for purchase.

With either medium, the audio tours offer the park and visitors flexibility. The park has the option of designing multiple themed tours for visitors to choose from. Visitors gain the flexibility of touring the park at a time most convenient to them and the option to listen to as few or as many (within the time allotted) tour stop narrations as they choose. The audio tours could be designed to include stops on the Battlefield tour road as well as information about the historical sites in Old Saratoga, encouraging greater visitation at the Old Saratoga Unit sites.

Approximate costs were estimated for developing and producing an audio tour with accompanying map/brochure based on a project that the consultant completed for another NPS site.

Table 3.5 – Estimated Audio Tour Costs

Task	Estimated cost
Audio tour development (research, development of text, graphic design)	\$35,000
Audio tour production and fabrication (production, narration, music, fabrication of 500 CD's and 250 cassettes)	\$12,000
Map/brochure for auto tour (concept plans, research, graphic design, production packages)	\$20,000*

*Assumes that wayside exhibits/signs are already in place

The costs in Table 3.5 were developed for a CD/cassette-based tour. Much of this cost would also be applicable to cell phone-based tours; however, information provided by Spatial Adventures indicates that production costs for a cell phone tour are approximately \$1000. Additional costs for providing a cell phone audio tour would include a one-time hosting set-up fee of approximately \$350-\$750 (dependent on particular options chosen by the Park) and a monthly hosting fee of \$10-\$20.

3. Operating characteristics for transit service

a) Battlefield tour service

A scheduled tour will require a single vehicle, with interpretation of the Battlefield Unit provided on-board and at tour stops. The full automobile tour, stopping at all eleven tour stops, takes about 2.5 to 3 hours (assuming 10 to 15 minutes at each stop). In order for the tour service to be attractive to a large number of visitors, an abbreviated tour service is recommended. Limiting the tour to five stops, as suggested in the park's literature, and allowing 10 minutes of dwell time at each of these stops would result in an 80 minute tour. Interpretation of the remaining tour stops could be provided on-board the vehicle. (Visitors desiring the full tour would still have the option of the self-guided automobile tour.) Table 3.6 below summarizes the recommended operating characteristics of a scheduled Battlefield tour service.

**Table 3.6 – Operating Characteristics of
Scheduled Battlefield Tour Service**

Parameter	Value
Length of tour road	10.5 miles
Operating speed	20 mph
Travel time	32 minutes
Number of tour stops	5
Aggregate dwell time	50 minutes ¹⁴
Span of service	Once or twice daily, weekends & holidays
Operating season	May-October
Total cycle time	82 minutes
Required fleet size	1 vehicle

Note that the operating characteristics presented in Table 3.6 do not include a stop at the proposed boat dock. The potential for connecting the tour service to the proposed boat dock is discussed in Section C of this chapter (“Integration of ATS Options”).

b) Continuous Old Saratoga Unit loop

The recommended time to visit the Saratoga Monument is approximately 30 minutes, however visitors who choose not to climb the stairs at the Monument may complete their visit in less time. Tours of the Schuyler Estate last approximately 25-30 minutes. Visitors are likely to require up to 40 minutes at the Schuyler Estate in order to participate in a tour and walk the grounds. Since there are no sheltered seating areas for visitors at the Schuyler Estate or any concession area to visit after a tour, waiting time for transit passengers at the Schuyler Estate should be minimized (or such amenities should be added). The recommended headway for this service is 20 minutes, which will give visitors the option of a 20-minute or 40-minute stay at the NPS sites. Table 3.7 summarizes the recommendations for an Old Saratoga Unit continuous loop service. (Note that additional stops, such as Lock 5 or Stark’s Knob, could be added in the future; however, expanding the route would increase the total cycle time and may require the purchase of additional vehicles.)

¹⁴ Assumed 10 minutes at each stop for interpretation and passenger alighting/boarding. Tour is assumed to stop at 5 of the 11 total tour road stops.

**Table 3.7 – Operating Characteristics of
Old Saratoga Unit Continuous Loop Service**

Parameter	Value
Length of tour road	Approximately 3 miles ¹⁵
Operating speed	20 mph
Travel time	9 minutes ¹⁶
Stops	Visitor orientation center, Schuyler Estate, Saratoga Monument, Victory Woods
Aggregate dwell time	4 minutes ¹⁷
Terminal layover/recovery time	7 minutes
Span of service	10 AM to 4 PM, weekends and holidays
Operating season	May – October
Total cycle time	20 minutes
Minimum desirable headway	20 minutes
Required fleet size	1 vehicle

c) Battlefield Unit – Old Saratoga Unit connection

Route 4 or Route 32 could be used for the connector. If Route 4 is used, the connector service would be able to stop at the proposed boat dock at the Battlefield Unit. The connector service should be provided as an extension of either the Battlefield tour or the Old Saratoga loop service, meaning that the same vehicle would be used for the two services. In either case, the service should be coordinated with the Battlefield tours. If the connector were provided as an extension of the Battlefield tour service, visitors would most likely transfer to/from the Old Saratoga Unit loop service at the new visitor orientation center in Schuylerville. If the connector were provided as an extension of the Old Saratoga Unit loop service, visitors would transfer to/from the Battlefield tour at the boat dock (assuming the connector service is also coordinated with boat tours) or the Battlefield visitor's center. The advantages and disadvantages of each option are presented in Table 3.8.

**Table 3.8 – Comparison of Options for the Battlefield Unit - Old Saratoga Unit
Connector Service**

	Advantages	Disadvantages
Connector as part of Battlefield tour service	• Simplifies coordination between the tour service and the connector • Battlefield tour departures can be scheduled to account for the connector trip	• Will eliminate the option of a "tram"-type vehicle on the tour road service (Route 4 and Route 32 require a vehicle that can operate in mixed traffic on high-speed roadways)
Connector as part of Old Saratoga Unit service	• Would allow a "tram"-type vehicle to be used for the Battlefield tour service • Has potential to capture new visitors from the visitor orientation center in Schuylerville	• Will result in a gap in service on the Old Saratoga Unit route when the vehicle makes a trip to the Battlefield, decreasing the convenience of an Old Saratoga Unit loop service

¹⁵ Depends on exact route design/order of stops

¹⁶ Based on a travel time survey conducted by CME in December 2004, which included time to decelerate/accelerate at each stop.

¹⁷ Assumed 1 minute at each stop for passenger alighting/boarding.

The trip from the Old Saratoga Unit to the Battlefield Unit takes approximately 10 to 15 minutes¹⁸, not including loading/unloading time at the transfer point.

d) Scheduled tour of Battlefield Unit and Old Saratoga Unit

A scheduled tour of both the Battlefield Unit and the Old Saratoga Unit – in one trip - could be offered instead of the combination of services discussed above. Under this option, the Battlefield portion of the service would essentially be the same as that previously described in part (a) of this section. The same vehicle would be used for both the connection to the Old Saratoga Unit and for a tour of the Old Saratoga Unit. The vehicle would wait at each site in the Old Saratoga Unit while visitors tour the site. This service could be designed to begin and end at either the Battlefield Unit or the Old Saratoga Unit. Total time for this tour would be approximately 3.5 to 4 hours.¹⁹

C. Integration of ATS options

1. Docking facilities and transit service

Visitors arriving at the Battlefield Unit by boat will need to be provided with a way to travel around the Battlefield. Bicycle or personal electric vehicle (PEV) rentals are feasible options for touring the Battlefield Unit; however, these modes require a safe method for visitors to cross Route 4. Even if a safe pedestrian/bicycle crossing were provided, the steep grade from Route 4 to the tour road will prevent many people from reaching the tour road on foot or by bicycle. Therefore, a transit service is necessary to enable visitors to combine a boat trip with a Battlefield tour. One option is to run a shuttle bus from the boat dock to the Battlefield visitor's center. An alternative is to design the Battlefield tour road service with a stop at the boat dock. This will require that the Battlefield tour service use a vehicle that is capable of crossing and traveling on Route 4 (a high-speed operating environment).

The boat tour would provide an opportunity to give visitors information about the importance of the river to the historical events that the park commemorates. Visitors would then get a guided tour of the Battlefield Unit. Together, these two services would offer a more complete perspective of the area's history. Ideally, a transit service to connect the Battlefield Unit to the Old Saratoga Unit should also be offered, so that visitors would be able to complete the tours and return to the Old Saratoga Unit within a reasonable amount of time.

2. Multi-use trail and transit service

A multi-use trail between the Old Saratoga Unit and the Battlefield Unit presents a great recreational opportunity, along with providing visitors with wayside interpretation of the Hudson River, the Old Champlain Canal, and historic events of the area. A transit service running between the Old Saratoga Unit and the Battlefield Unit would encourage

¹⁸A travel time survey conducted by CME in December 2004 showed that the trip from the Old Saratoga Unit to the Battlefield Unit takes 13 minutes on Route 4 and 10.5 minutes on Route 32 at approximately 40-45 mph.

¹⁹ 80 minute Battlefield tour + 40 minutes at Schuyler Estate + 30 minutes at Saratoga Monument + 30 minutes at Victory Woods + 30 minutes round-trip travel time between Battlefield and Old Saratoga Unit

visitors to travel the full length of a multi-use trail in one direction, with the option of returning by transit.

D. Usage forecasts for ATS alternatives

Table 3.9 below presents a summary of demand estimation for the ATS options discussed above. Detailed demand estimation was performed by ConsultEcon and is included in Appendix D.

Table 3.9 – Summary of Demand Estimates for ATS Services and Facilities

ATS service	Mid-range usage estimate
Scheduled Battlefield Tour Service	31-43 visitors per day*
Continuous Loop Old Saratoga Unit Service	14-21 visitors per day*
Battlefield Unit -Old Saratoga Unit Connector Service	20-32 visitors per day*
Multi-use path, Schuylerville to Battlefield Unit	7800 visitors annually

*Weekends and holidays only, Memorial Day through Labor Day

These demand estimates include induced visitation from the proposed visitor orientation center in Old Saratoga and would change if the visitor orientation center was not located in Old Saratoga. The services are assumed to be free or to charge a nominal fee.

IV. Recommendations

This chapter outlines the recommendations of the study team for an alternative transportation system at Saratoga NHP, based on the evaluation of ATS options presented in the previous chapter. Some of these recommendations may not be implemented immediately; however, these recommendations can be used to:

- Identify opportunities for regional partnerships that will be beneficial to both the Park and the local community
- Provide guidance for implementing ATS components as these partnership opportunities develop.
- Provide guidance to potential concessionaires who may have an interest in providing specialized vehicle or bicycle tours

Recommendations are presented for each of the ATS categories discussed in the previous chapters. Also included in this chapter is a brief discussion of the opportunities that are available to the Park for marketing an ATS.

A. Facilities

1. Docking facilities

A tour boat docking facility at the Battlefield Unit would provide a waterway connection between Old Saratoga and the Battlefield.

The Taylor House site seems to have the most advantages. This site would allow tour boat passengers to visit the proposed tour stop 11 (assuming that provisions are made to allow pedestrians to safely cross Route 4). However, this site would likely require screening so that the viewshed from the battlefield would not be affected. The Battlefield Entry Road location is well-screened, but this site presents safety concerns for pedestrians crossing Route 4 where there is limited sight distance. The River Road location has better sight distance than the Battlefield Entry Road location, but is not as well screened.

A final choice on the location of the tour boat docking facility will depend on whether changes are made to the Battlefield Entry Road/Route 4 intersection that will allow for safe pedestrian access and whether adequate screening can be provided at the Taylor House site. Other considerations will be wetland impacts, river depth, and adjacent property impacts.

2. Sidewalk improvements

The reconstruction of sidewalks along Broad Street within the Village of Schuylerville, reconstruction and construction of sidewalks on Spring Street from Broad Street to the Village limit, and the construction of a new sidewalk on the north side of Ferry Street (adjacent to Fort Hardy Park) are included in NYSDOT's project PIN 1089.58.121. The Park Service should continue to coordinate with NYSDOT on this project and pursue the possibility of a pedestrian walkway under Ferry Street. Even if this grade separated walkway is not feasible, a safe pedestrian crossing on Ferry Street should be provided to connect the sections of the Canal Park Towpath Trail north and south of Ferry Street.

Opportunities for sidewalk improvements outside the boundaries of the NYSDOT were also identified, as previously discussed and illustrated on Figure A-10. These sidewalk improvements should be pursued in coordination with other local projects so that pedestrian connections are provided as new points of interest are developed in Schuylerville and Victory Mills. For example, as the trail network in Victory Woods is developed, a safe pedestrian crossing on Route 32 should be pursued so that pedestrians can use the sidewalk on the south side of Route 32 as a link between the Schuylerville business district and Victory Woods.

3. Multi-use paths

A multi-use path connecting the Battlefield Unit and the Old Saratoga Unit would be a great recreational asset to the community. A full discussion of the design and construction of a multi-use path is beyond the scope of this report. Constructing this path along the historic Champlain Canal alignment would require right-of-way acquisition or agreements with numerous private landowners. The multi-use path would also require substantial earthwork, which will greatly influence the final cost of the project. This would be a multi-million dollar project and the Park Service would need to partner with the local community to receive substantial funding, possibly through future transportation legislation.

Multi-use paths will require some ongoing maintenance. In the winter months, these trails would offer opportunities for cross-country skiing and snowshoeing if snow were not removed. Since the proposed paths cross land owned by multiple entities, a maintenance agreement would need to be established between the Park Service, local municipalities, and private landowners.

4. Soft surface trails

In the short-term, a trail connection should be provided from the Saratoga Monument to Victory Woods as the Victory Woods site is developed. This trail will provide a link between two of the Park's Old Saratoga Unit sites and encourage visitors to park at the Saratoga Monument and access Victory Woods on foot. Other trails in Old Saratoga should be pursued with local partners as part of a long-term goal of creating a local trail network. Although costs will be less for soft surface trails than for multi-use paths, the soft surface trails will still require earthwork and stabilization that will result in substantial costs. As with the multi-use path, agreements with private landowners would need to be established in order to build and maintain trails.

5. Vehicle connections

The primary access to Victory Woods should be the trail from the Saratoga Monument, allowing parking to be concentrated at the Monument. However, a small parking lot with direct access to Victory Woods should be provided for visitors with mobility limitations.

6. Battlefield tour road – Bicycle Enhancements

The Park Entrance Road should be designated as one-way westbound from Lohnes Road to the Route 32. This would allow for a dedicated bicycle lane on the one-way section and provide a safer environment for bicyclists. The short section of the Entrance Road

between the end of the Tour Road and the intersection with Lohnes Road would need to be widened to safely accommodate bicyclists on the shoulder of the road.

B. Transit service

Based on the estimated levels of demand, the following recommendations for transit service are offered:

Scheduled Battlefield Tour Service:

A scheduled Battlefield tour service should be pursued on an experimental basis, running once or twice per day on weekends and holidays during the summer months. This service would be provided with interpretation to add value to the visitor experience at the Park. If this service proves successful, it could be implemented on a permanent basis and possibly expanded to additional off-peak times.

Currently, the visitor center parking lot at the Battlefield Unit can accommodate 30 cars and 4 buses, with overflow parking available to accommodate up to 100 cars. As shown in Table 3.9, this service is expected to attract 31-43 visitors per day. Multiple visitors would be expected to arrive in the same vehicle. Also, these would not all be additional visitors, since some of the demand for the tour service would come from people who are already visiting the park. The Saratoga NHP General Management Planning Support Package recommends increasing the parking capacity at the visitor center by paving and striping the lower parking lot to accommodate a total of approximately 25 cars and 7 buses. This would provide adequate capacity to accommodate the demand for a scheduled Battlefield tour service.

Continuous Loop Old Saratoga Unit Service:

The demand for a continuous loop service in the Old Saratoga Unit should be re-evaluated as visitation increases. At this time, the expected demand does not justify implementing this type of service; however, increased visitation in the future – possibly influenced by the visitor orientation center, the Battlefield tour service, or other local developments – may make this a feasible option. If this service is implemented in the future, it is recommended that the service run with a headway of twenty minutes or less in order to conveniently accommodate varying lengths of stay at the Old Saratoga Unit sites. A single vehicle could be used to provide service to the Schuyler Estate, Victory Woods, the Saratoga Monument, and the visitor orientation center. Other sites such as Lock 5 or Stark’s Knob could be included if an additional vehicle were used (an additional vehicle would be necessary to maintain the short headways). A parking inventory and analysis at the Old Saratoga Unit sites and the potential visitor orientation center would be needed if this service were implemented.

1. Fee structure for ATS services

The demand estimates for the proposed transit services assumed that the Battlefield service would be free or charge a nominal fee (\$1 or \$2 per person) and that an Old Saratoga Unit service would be free (see Appendix D – Table 2, note 1 and Table 3, note 1). These services are not expected to recover their operating costs through user fees. Given the relative ease of driving one’s own vehicle on the Battlefield tour road and the

local roads and the availability of parking at the NPS sites, a transit service must offer visitors an enhanced experience for very little cost in order to attract riders.

2. Operating structure for transit service

Four options for funding the operation of a transit service were considered, as detailed in Table 4.1.

Table 4.1 – Operating Structures for Transit Service

Option	Cost estimate and details
1) NPS purchases vehicles and hires employees to provide service	See Table 3.1 for vehicle costs
2) NPS purchases vehicle, contractor provides service	\$40/hour plus the cost of the vehicle (see Table 3.1)
3) Contractor provides vehicle and service	\$435/day (7 hours of service, approx. 40-passenger vehicle, ADA compliant, standard fuel)
4) Partnership with local transit service provider	Discussions with CDTA indicate that this is currently not a feasible option

Options 2 and 3 above would be the most cost-effective for the Park. Since the service will initially be provided as an experimental service, it is recommended that the Park pursue option 3 (contractor will provide vehicle and service). This will allow the Park to evaluate the effectiveness of the service and with minimal financial risk. Should the Park decide to continue the service in the long-term, they may realize some slight cost savings by purchasing a vehicle and hiring a contractor to provide the service.

C. Audio tour

The audio tour should be updated and expanded to include discussion of the Old Saratoga Unit sites. By providing a cell phone tour, the Park will not incur the cost of fabricating CD's and/or cassette tapes. However, the Park Service should be sure that adequate cell phone service is available in the Park before pursuing this option.

D. Marketing of ATS facilities and services

It is recommended that the Park Service continue to utilize the existing marketing channels to advertise any ATS options that are implemented. Existing public information initiatives include the following (more details on these initiatives can be found in Appendix E):

- Press releases to local print, radio, and television outlets.
- Saratoga NHP's National Park Service web presence: <http://www.nps.gov/sara>
- NPS brochures, distributed at the Battlefield Unit and Old Saratoga Unit sites. Also distributed at visitor centers in Schuylerville, Stillwater, and Saratoga Springs.
- Friends of Saratoga Battlefield Newsletter

- Saratoga NHP Calendar of Events, distributed at the Battlefield Unit and Old Saratoga Unit sites, visitor centers, and regional NPS “sister sites” (Fort Ticonderoga, Mt. Independence, Bennington Battlefield)
- Event-specific fliers distributed by volunteers at local post offices, libraries, banks, and grocery stores
- Web-links and promotions with regional partners including the Museums of Saratoga Springs, Saratoga County Chamber, Lakes to Locks, Hudson Crossing, New York Independence Trail, 3 Valleys to Freedom, Mohawk Heritage Corridor, Lake Champlain Basin Program, Saratoga P.L.A.N., and Old Saratoga on the Hudson.
- Informal relationships with tour bus companies and special interest organizations

As the Park implements new services, increased communication with the regional partners listed above will be necessary to attract new visitors. The Park should promote itself as an additional point of interest for tourists that are already in the region. For example, horse racing fans who visit Saratoga Springs for an extended period of time could be encouraged to visit Old Saratoga and the NPS sites on days that there are no races through increased communication with the Saratoga County Chamber.

V. Summary & Conclusions

A. Impact on Natural and Cultural Resources

The Alternative Transportation Study (ATS) has been developed to be consistent with the Saratoga National Historical Park General Management Plan's (GMP) goals. As such, the preferred alternative (Alternative D) of the GMP and associated Draft Environmental Impact Statement provide the basis for determining the impact of the planned alternative transportation systems on natural and cultural resources. The GMP states that: "After a review of potential impacts to natural and cultural resources, visitor use and experience, park operations, and the socioeconomic environment, the team concluded that Alternative D best protects contributing resources, while enhancing public access to those resources". To supplement the findings of the GMP this study provides a cursory site analysis of the planned ATS systems. The ATS systems have been conceptually designed and evaluated to minimize potential impacts on natural and cultural resources. The planned ATS systems will require further design and analysis prior to implementation and an Environmental Assessment will be required to fully document the potential impact on natural and cultural resources. Additional studies that may be required prior to implementation of the planned ATS systems include but are not necessarily limited to the following:

- NYS Office of Parks Recreation and Historic Preservation compliance,
- hazardous material investigation,
- site topographic and feature survey,
- archeology analysis,
- water resources, wetlands, and floodplain analysis,
- soils analysis,
- detailed traffic analysis, and
- river depth analysis for boat docking facility.

It is anticipated that with further analysis and design, along with appropriate mitigation measures the planned ATS systems will not adversely impact natural and cultural resources.

B. Phasing Plan

The recommendations presented in the previous chapter were divided into two categories based on the suggested priority of the projects, as presented below. Short-term priorities are projects that will directly impact the Saratoga NHP sites and will complement other projects that are currently being progressed in the region. Long-term goals are projects that will benefit the region and the Park, but will require significant additional studies and collaboration with regional partners.

Short-term priorities:

- Improvements that complement the Victory Woods site development, i.e. the trail connection from the Saratoga Monument to Victory Woods, the trail connection from Victory Woods to the Route 32 sidewalk, and the vehicular access to Victory Woods (small parking lot).
- Experimental, scheduled Battlefield tour service
- One-way section of the Park entrance road, to better accommodate bicyclists
- Revised audio tour to include more information on the Old Saratoga Unit sites
- Continuing to work with regional partners on the regional visitor orientation center

Long-term goals:

- Multi-use path
- Docking facility
- Local trail network in the Old Saratoga Unit
- Sidewalk improvements in the Old Saratoga Unit
- Old Saratoga Unit transit service
- Expansion of the Battlefield tour service (increased frequency and/or off-peak times)

C. Cost Summary

Table 5.1 summarizes the cost estimates for the short-term priorities. Details of these estimates are included in the previous chapters of this report.

Table 5.1 – Summary of Cost Estimates for Short-Term Priorities

Project	Cost estimate
Victory Woods access (trails and parking)	\$140,000
Battlefield tour service	\$26,000/year for a contractor to provide vehicle and service on weekends & holidays May-October (approximately 60 days/year)
One-way section of Park entrance road	\$30,000
Revised audio tour	\$57,000-\$65,000 dependent on format (CD or cell phone)

It should be noted that all of these cost estimates are based on concept-level plans and that the actual costs for implementing these projects may differ from the estimates presented here.

D. Conclusion

This study investigated the potential for an alternative transportation system at the Saratoga National Historical Park. The study sought to develop an ATS that would enhance the visitor experience and understanding of the historic context of the Park while

also protecting the natural and cultural resources of the Battlefield Unit and the Old Saratoga Unit. Before potential ATS options were investigated, an inventory of regional points of interest and existing transportation links was conducted. A review of visitation statistics for Saratoga NHP revealed that the Battlefield Unit of the Park attracts a much greater number of visitors than the Old Saratoga Unit sites, emphasizing the need for an ATS that will encourage people to visit multiple units of the Park. Demand estimates for ATS alternatives based on the current visitation statistics showed that a continuous transit service is not the best option for Saratoga NHP at this time. This conclusion is in agreement with the results of research into ATS at other NPS sites of similar size. However, the study does recommend ATS options that should be short-term priorities for the Park, including an experimental Battlefield tour service, a revised audio tour, trails to connect the Saratoga Monument with Victory Woods, and changes to the Battlefield tour road to better accommodate bicyclists. The Park should also continue to work with its regional partners to pursue the proposed regional visitor orientation center. In the long-term, the Park should continue to work with regional partners to pursue larger projects such as a local trail network, a regional multi-use path, tour boat docking facilities, local sidewalk improvements, and an Old Saratoga Unit transit service.

Appendix A: Figures

- Figure A-1: Project location map.
- Figure A-2: Points of interest and transportation links.
- Figure A-3: Schuyler Estate site development criteria.
- Figure A-4: Schuyler Estate site development concept.
- Figure A-5: Fort Hardy Park site development criteria.
- Figure A-6: Fort Hardy Park site development concept.
- Figure A-7: Preliminary ATS framework.
- Figure A-8: Tour boat connection site development criteria.
- Figure A-9: Tour boat connection alternative concepts.
- Figure A-10: Proposed transportation links.
- Figure A-11: Property ownership along the Old Champlain Canal corridor.
- Figure A-12: Victory Woods site development criteria.
- Figure A-13: Victory Woods site development concept.

Appendix B:
Baseline Public Visitor Usage Analysis

Appendix C:
Review of ATS at other NPS sites

Appendix D:
Demand Estimates for Proposed ATS

Appendix E:
Saratoga NHP Public Information Initiatives