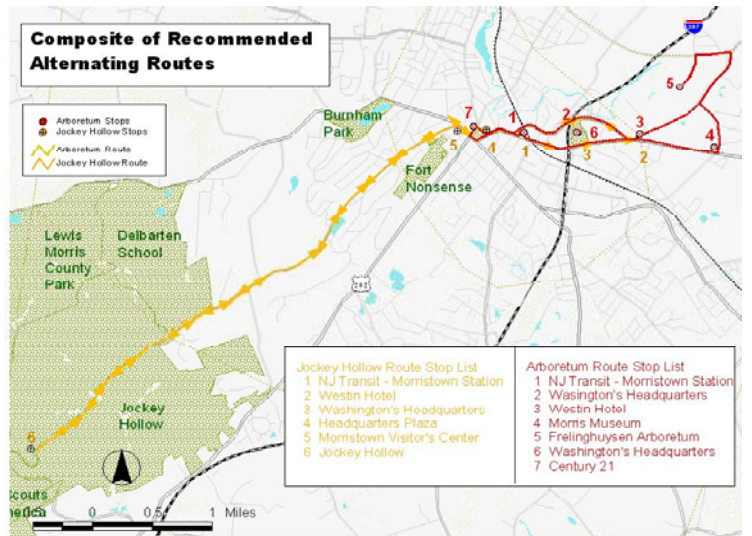




# Morristown

## Alternative Transportation Study

### Phase II



PMIS No. 89903  
October 2005



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# Contents

Report notes iii

Acknowledgments iv

Definitions v

## Section 1: Introduction 1

Morristown overview 1

Alternative transportation planning 2

Project purpose and rationale 3

## Section 2: Summary of Alternative Transportation Study, Phase I 4

Concept-design for an ATS 4

*Intercept Parking Distributor Circuit (IPDC) 5*

*Town Green main transportation hub 5*

*Common set of access points to the ATS 5*

*Separate "Park" and "Local" ATS shuttle route circuits 6*

Operational considerations for the ATS 6

## Section 3: Context and external factors impacting Phase II 8

Approach to Phase II 8

## Section 4: The planning "charrette" workshop 9

The stakeholder teams' transit design proposals 10

## Section 5: Analysis 17

Overlay and adjustments to teams' transit design proposals 17

Presentation of transit route design options 19

*Route 1 20*

*Routes 2 and 3 22*

## Section 6: Recommendations 25

## Section 7: Partnerships, funding, and transit service fee structure 29

Partnerships 29

Funding 29

Fares 30

## Section 8: Next Steps 31

## **Appendices**

**Appendix 1: Invitational letter sent to potential workshop participants 33**

**Appendix 2: Stakeholder teams 35**

**Appendix 3: Workshop scenario scripts 37**

**Appendix 4: Stop-specific considerations and concerns 41**

Jockey Hollow 41

Washington Headquarters 41

Headquarters Plaza 41

New Jersey Transit – Morristown Station 41

Town Green 41

Morris Museum 42

Westin Hotel 42

Frelinghuysen Arboretum 42

Morristown Visitor Center 42

Historic Speedwell 42

Foster Fields 42

General Concerns/Issues 43

## Report notes

This report was prepared by the U.S. Department of Transportation John A. Volpe National Transportation Systems Center, in Cambridge, Massachusetts. The project team was led by David Spiller, of the Service and Operations Assessment Division, and included Benjamin Rasmussen, of the Planning and Policy Analysis Division, and Elizabeth Bent, of CASE, LLC.

This effort was undertaken in fulfillment of PMIS 89903, *Implementation Plan for Alternative Transportation at Morristown National Historical Park*. The project statement of work was included in the September 2004 interagency agreement between the National Park Service and the Volpe Center (NPS agreement F4505041114).

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## Definitions

The following terms are used in this report:

ADA	Americans with Disabilities Act
AT	Alternative transportation
ATP	Alternative Transportation Program
ATS	Alternative transportation system
CLR	Cultural Landscape Report
DCP/EA	Development Concept Report/Environmental Assessment
DOT	Department of Transportation
GMP	General Management Plan
MORR	Morristown National Historical Park
NEPA	National Environmental Policy Act
NJT	New Jersey Transit
NPS	National Park Service

## Section 1: Introduction

*This document summarizes the Phase II planning effort conducted by the Volpe National Transportation Systems Center (the Volpe Center) to articulate a viable park-community pilot transit service for Morristown National Historical Park. This effort was conducted under the auspices of the National Park Service's Alternative Transportation Program.*

### Morristown overview

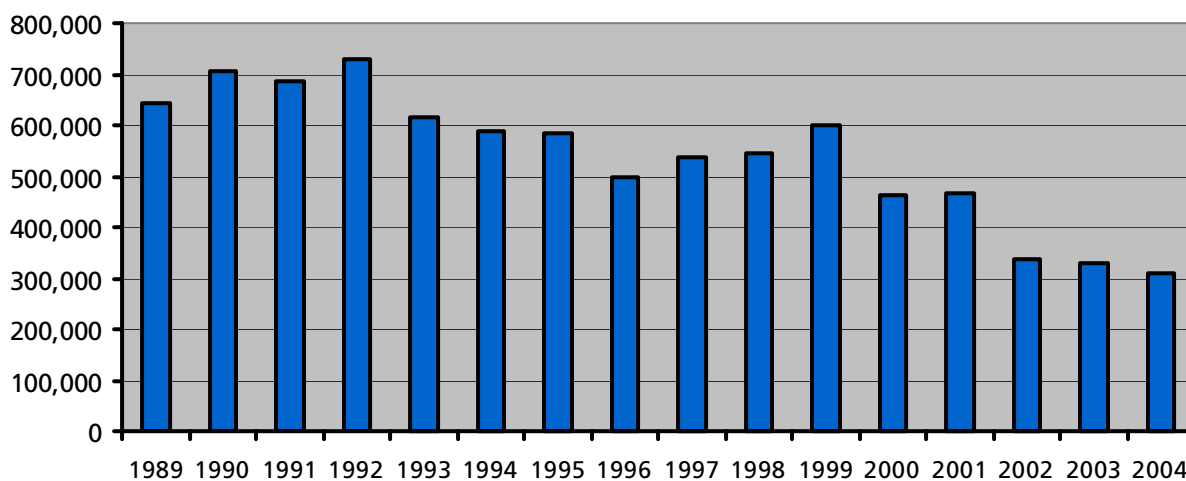
The nation's first National Historical Park is located in and around Morristown, New Jersey. Morristown is located in north-central New Jersey, thirty miles from New York City. Morristown National Historical Park consists of four units that played important roles during the Revolutionary War—Washington's Headquarters, Fort Mifflin, Jockey Hollow Encampment Area, and New Jersey Brigade Encampment. These units provide a unique opportunity for visitors to enter into the lives of Revolutionary War soldiers and local villagers as they survived two grim winter encampments and prepared to meet the British army.

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### Chart 1

#### Annual Visitation for Morristown National Historical Park, 1989 – 2004

Source: NPS Public Use Statistics Office



Though declining, the park attracts approximately 360,000 visitors annually (Chart 1), with October being its peak month for visitation (Chart 2).<sup>1</sup> The park depends heavily on access by private vehicles. The current reliance on private automobiles for unit access adds approximately 105,000 vehicles per year to local traffic, contributes to noise and air pollution, and increases the risk of accidents. On an average weekend day during peak visitation months, park visitors may account for more than 734 vehicles.<sup>2</sup> Morristown and Morris County are struggling to cope with increasing traffic. Several efforts are underway to explore regional transit services, transit-oriented development with a proposal for a “transit village” near the Morristown train station, and re-routing of traffic through Morristown’s Central Business District (CBD).

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<sup>1</sup> Average of visitation for 2001, 2002, 2003, and 2004. Source: National Park Service, Public Use Statistics Office.

<sup>2</sup> Computed by dividing peak month visitation for October 2004 in half to obtain weekend visitation (approximately half of the visitation occurs on weekends) and dividing weekend visitation by eight (the number of weekend days per month) to obtain average weekend day visitation then dividing by 3.7 passengers per vehicle to obtain the number of vehicles. The passengers per vehicle (3.7) is the reference datum cited in the Morristown *public use counting and reporting instructions*.

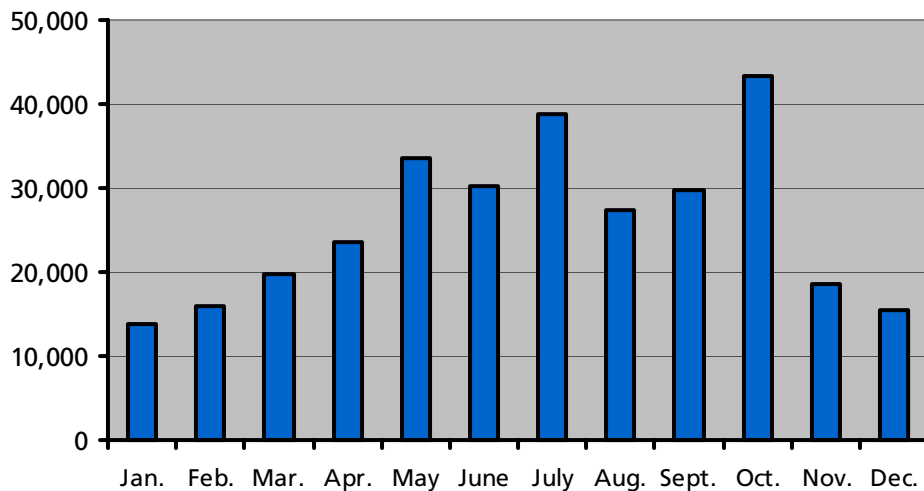


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## Chart 2

### 2004 Monthly Visitation for Morristown National Historical Park

Source: NPS Public Use Statistics Office



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Morristown's original 1934 General Plan recognized the difficulties posed by disconnected units. It proposed a parkway running along Mount Kemble Ridge connecting Jockey Hollow with the town via Fort Nonsense. The intention was to spare visitors the "intermingling of traffic" during their visit, present "beautiful scenic effects," and to "further enable the visitor to gain an appreciation for the region as a whole." Difficulties in land acquisition prevented this parkway from being developed. The park's 1976 Master Plan determined that interpretation and visitation in the 1,320 acre Jockey Hollow unit should revolve around a shuttle bus system. Much of the system was constructed, including the one-way tour road, central parking, a remote comfort station, and several waysides. However, the shuttle bus system was never operated and no action was taken to improve connections between park units. The eight-lane I-287, running parallel to several park units, was in the planning stages at the time the Master Plan was completed.

The combination of one-way roads, heavy traffic, and complicated intersections makes arrival at the Washington Headquarters unit very difficult, confusing, and even dangerous for out-of-town visitors. Distances between the four units vary between 1 and 15 miles. Travel between the park's principal units (Washington's Headquarters and Jockey Hollow) can take longer than anticipated to cover approximately 15 miles, about half of that on I-287 which is frequently choked with commuter and truck traffic. Washington's Headquarters lies little more than a mile from Fort Nonsense near Morristown's historic Green, but to arrive by auto requires several disorienting merges and left and "U" turns along congested urban roads. Pedestrian access is perhaps more difficult given discontinuous sidewalks, the I-287 overpass, and a railroad underpass. Frustration with traffic congestion and difficulty navigating between the units on winding and numerous different roads results in many visitors cutting short their visits before they have seen all of the units.

#### **Alternative transportation planning**

Since its 1976 Master Plan, the park has believed that a sustainable Alternative Transportation System (ATS) would make a visit to park units more enjoyable and facilitate the park's efforts to provide quality interpretation of their historical significance. An ATS for the park that is integrated with transit services serving other community needs could contribute to the sustainability of park operations, protect park resources, and contribute to the efforts of local government to meet the needs of residents, employees, and visitors. Providing a convenient means of traveling among park units would give visitors an expanded opportunity to understand the importance of the units. In addition to facilitating movement, an ATS can deliver interpretive narration or other informational media presentations that explain the units and their relationships with each other and to the community. Additional benefits from an ATS include reduced

automobile congestion within the park, reduced conflict between automobile and non-motorized traffic within each unit and on access roads to each unit, reduced parking lot congestion, and of particular importance, improved access to the park for those who do not drive or own a car.

### **Project purpose and rationale**

In 2001, the Volpe Center conducted an initial “Phase I” alternative transportation plan. The Phase I study resulted in a consensus-based *concept-plan* and long-run vision for a network of routes serving both the park and the local community and supported the decision-making process for the primary selection of modes and preferred routes and system management. The findings supported a combined park and town shuttle to serve Washington’s Headquarters, Fort Nonsense, and Jockey Hollow with connections to the Morristown train station and Town Green as well as service to several local cultural sites and hotels.

The Morristown city, county, and business communities support developing an ATS system. Follow-up planning, design, and implementation work is essential to successfully carry out the recently completed GMP’s vision (2003) and to revalidate the concept-plan before moving forward to implement a first segment. The recent GMP endorsed the Phase I concept design for an ATS at Morristown.

This “Phase II” study builds upon the earlier effort. Key objectives of this study are to

- Identify and evaluate opportunities for collaboration with other local sites and institutions.
- Design a stakeholder collaborative process that can define the detailed characteristics of a pilot transit service consistent with the general concept-plan articulated in Phase I, including optimal routes, stops, and schedules.
- Identify site circulation design issues and site improvements for transit stops.
- Provide estimates of the capital, operating, and maintenance costs of a pilot transit service.
- Articulate specific actions for “next steps” and a joint park-community process to carry them out.

## Section 2: Summary of Alternative Transportation Study, Phase I

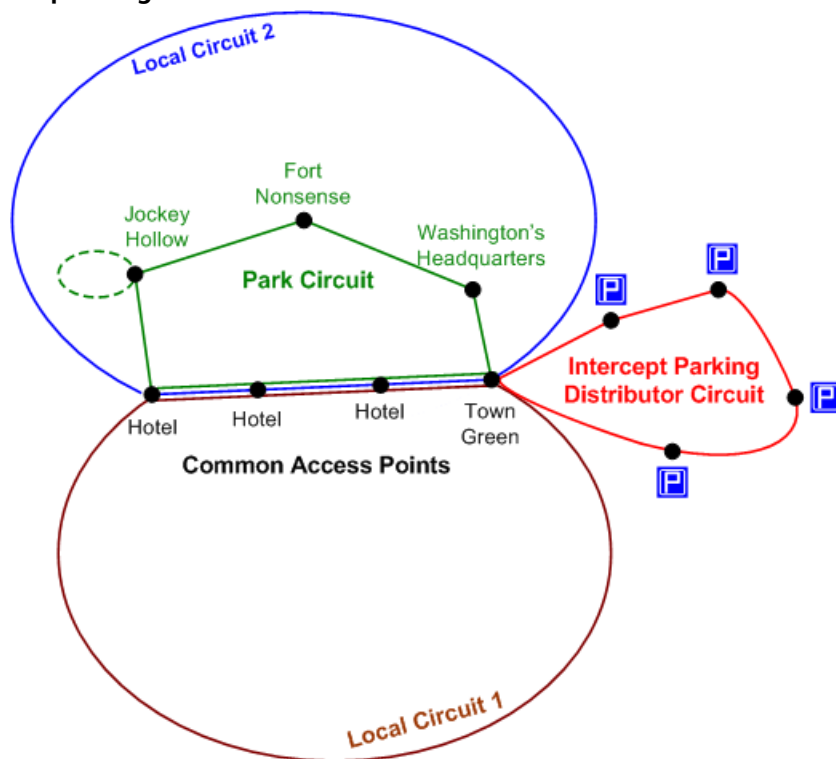
The Phase I study sought to achieve the following objectives:

- Maximize protection of park and local historical and environmental resources.
- Improve visitor safety and enhance the visitor's experience through integration of discrete park units via a shuttle service, thereby providing a coherent interpretative theme.
- Maximize use of existing public infrastructure and programs.
- Maximize public-private benefits to facilitate equitable cost sharing.
- Maximize cost-effectiveness (i.e., maximum ridership at minimum life-cycle cost).
- Ensure compatibility of the design with Morristown and Morris County tourism and economic development goals and community needs for transit connectivity between residential neighborhoods and work and shopping activity centers.
- Create an integrated design, but one that allows maximum autonomy to proceed independently in implementing elements of the transit system.

### Concept-design for an ATS

A schematic of the concept-design for the ATS, developed during the Phase I planning effort, is illustrated in Figure 1.

**Figure 1**  
Phase I schematic concept-design for ATS



\* See US DOT/ Volpe Center, *Morristown Alternative Transportation Study*, December 2001.

Responding to the objectives articulated above, Phase I included the following essential elements:

- An Intercept Parking Distributor Circuit (IPDC)
- A Town Green main transportation hub
- A common set of access points to the ATS
- Separate “Park” and “Local” ATS shuttle route circuits

Each of these elements is described in more detail below.

### *1. Intercept Parking Distributor Circuit (IPDC)*

There are a number of public parking facilities already within the CBD or at the periphery of the CBD in Morristown. Plans are already in place to replace the Maple Street parking structure. Discussion with local stakeholders indicated that it may be possible to add capacity via one or two additional stories and still comply with existing zoning limits. Vehicular access to Morristown is via I-287, and Routes 24 and 202. It would be desirable to intercept visitor traffic on these arterials prior to its mixing and adding to local street congestion within the CBD. The Morristown Partnership\* has developed a new signing program as part of its marketing and tourist enhancement activities. The concept-design developed in Phase I proposed to use some or all of the existing public parking facilities (and planned enhancements) as designated “intercept” parking facilities for the ATS. By distributing the intercept parking function to the existing facilities, there is less likelihood of creating a single bottleneck or point of congestion on the local streets. Multiple arterial access routes into Morristown also necessitate a distributed and decentralized design for the intercept parking function.

The Phase I ATS concept-design also proposed to augment the signing program with guidepost or orientation path finding signs<sup>†</sup> on each of the arterial access routes to the designated intercept parking facilities. An *Intercept Parking Distributor Circuit* shuttle service would shuttle patrons to and from each of the designated intercept parking facilities and the main transportation hub at the Town Green.

### *2. Town Green main transportation hub*

The concept-design proposed to use the Town Green, a historic element in its own right, as the main “transportation hub.” All four ATS shuttle loop routes or circuits would start and terminate at the hub. Its central location, excellent pedestrian and bicycle access, and amenities and landscape treatment make it a perfect location for access to and interchange among the ATS routes. The lovely setting of the Green also would ameliorate and alleviate the inconvenience of passenger waiting time. Along three sides of the Green is perimeter parking. Under the concept-design proposed, one side of the Green would be set aside and signed for ATS vehicles. Other amenities, such as attractive bus shelters might also be added. For the four ATS shuttle-loop circuits envisioned (see Figure 1), approximately 400 ft. would be needed to site four curbside bus bays that would permit independent entry and exit at 7 mph.<sup>‡</sup> The reversal of the current one-way traffic flow pattern or allowing a contra-flow pattern for ATS vehicles so that ATS vehicles could load/unload at the curb adjacent to the Green would be a necessary accommodation if the Green were to be used as the “transportation hub” for the ATS system. The mitigation of “lost” parking spaces along the edge used for ATS vehicle stops would also be necessary.

### *3. Common set of access points to the ATS*

Aside from the proposal for a main “transportation hub” at the Town Green where all four routes converge, there would be a common set of passenger access points for three other ATS circuits (excluding

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\* The Morristown Partnership is a Special Improvement District (SID), a non-profit organization created by municipal ordinance for the purpose of revitalizing the downtown business district.

† A new logo would also be developed for the ATS and paired with the universal blue “P” designator for public parking for those facilities designated as ‘intercept’ parking.

‡ The minimum design requirements for an on-street bus berth are  $L + 27$  yards, where  $L$  is the length of the design vehicle. See G. A. Giannopoulos, *Bus Planning and Operation in Urban Areas*, 1989.

the IPDC). These three shuttle-loop routes would service sites of local interest (including the park sites). The common access points shared by these routes are at the three major hotels in Morristown.

A direct tie-in of the ATS to the three major hotels would be important for several reasons: (1) the major hotels are a prime source of visitors and potential generators of patronage for the ATS; (2) it would allow shared use of the hotels' parking, site drop-off and loading zones, and lobby/waiting room amenities for the ATS; (3) it would permit convenient access to and interchange among the three ATS circuits, with each circuit acting as a feeder of patrons to the others; and (4) it would facilitate equitable cost-sharing among the private and public partners. Either the three major hotels would make direct contributions as corporate sponsors, or perhaps an innovative financing plan could be implemented, such as a room occupancy surcharge with a free pass to the ATS for the duration of a visitor's occupancy.

#### 4. Separate "Park" and "Local" ATS shuttle route circuits

The schematic concept-design initially proposed three separate ATS circuits: the *Park Circuit*, *Local Circuit #1*, and *Local Circuit #2* (as shown in Figure 1). Ultimately, the Phase I study consolidated the two local circuits into a consolidated single local circuit. The park circuit and IPDC would only operate during the peak season (May-October), while the local circuit would operate year-round.

There are a number of reasons for segmenting the system in this fashion. First, separate ATS routes would better satisfy the needs and requirements of the park and the town and county. The park could provide a better link between its separate units to better fulfill its interpretive goal by underscoring the importance of the park as an integrated and large-scale landscape exploited by the Continental Army to its advantage. A local circuit shuttle route would also address the visitor's difficulty with navigating between the separate park units on unfamiliar, confusing, and often-congested roads. The local circuit shuttle route would also better serve town and county objectives of providing alternative options for mobility between neighborhoods and economic activity centers and providing connectivity among the many historic and cultural sites in the town and county.

Second, the separate ATS circuits would allow planning and implementation to proceed autonomously by the park and the town and county. The two stakeholder groups would need only to establish a memorandum of understanding setting forth agreement on the number of common access points, the site location for them, and the site design facilities and modifications necessary to support the ATS at these locations. Additional consensus-building among the local stakeholders could lead to a better articulation of planning requirements for access and mobility and ultimately a detailed specification of what sites and activity centers require connectivity and specific route alignments. Separate ATS circuits allow this process to move forward on its own timeline. The park can move forward on its own immediate needs without dependency on this other planning process.

#### **Operational considerations for the ATS**

With limited resources, it is desirable to keep the cycle time—the time it takes for a vehicle to complete one complete cycle of the route—relatively short (e.g., sixty minutes) in order to provide an adequate frequency of service with a minimal number of ATS vehicles. From the passengers' perspective, there is also a need to balance the number of sites reachable by the service with the length of time a visitor is on the vehicle. That is, a shuttle route serving many stops will increase on average the in-vehicle time for a passenger between his/her origin and destination stop.

At the main transportation hub at the Town Green, a timed-transfer concept may be possible. The two ATS circuit routes could operate on a common cycle time (e.g., 60 minutes) with synchronized dispatching from the hub at a 30-minute headway (necessitating two vehicles assigned to each of the two routes). The headway is the time period between successive vehicles serving a stop along the route. The Intercept Parking Distributor Circuit could operate at one-half the common cycle time (i.e., a 30-minute cycle) due to the relative proximity of the intercept parking facilities to each other and to the Town Green. Thus, every 30 minutes one vehicle from each of the ATS circuits would converge at the Town

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\* For each of the proposed ATS circuit routes, the minimum number of vehicles (N) is determined by the ratio of the cycle time (C) to the desired headway (h), i.e.,  $N = C/h$ .

Green with the vehicle assigned to the IPDC circuit. This would provide a near-zero wait time for the interchange of visitors among the ATS routes.

The schematic concept-design illustrated in Figure 1 also shows a dotted loop at Jockey Hollow. It was *initially* proposed that only every third or fourth vehicle run would continue through Jockey Hollow on the loop road, with two or three strategic stops along the loop road. The other ATS vehicle runs on the park circuit would be short-turned at the parking and restroom facilities just beyond Guerin House and the gateway entry on Western Avenue. This would reduce the cycle time for the park circuit route and save the park from having to purchase an additional vehicle to service the route. The idea was to use the money saved to purchase for the park several hundred bicycles of various types to satisfy a variety of visitors' needs and requirements (i.e., adult and children bicycles, electric-assisted bicycles, electric bicycles, adult tricycles, and trailer bicycle attachments and wagons), to house them in a well-designed bicycle shed, and to make them available to visitors off-loading from the ATS at the turnaround.\* The topography of Jockey Hollow is amenable to bicycle transit on the paved surfaces, and the paved loop road connects with various trailheads for further exploration of that park unit by foot. Encouraging an interchange of visitors between the ATS and bicycles is in keeping with the over-riding desire of park management to provide an environmentally benign way of experiencing the landscape, thereby improving the overall quality of the visitor experience.† Adequate bicycle parking facilities would be placed at each of the trailheads (the trails do not allow bicycles). Visitors making use of the bicycles would return with their bicycles to the ATS vehicle turnaround for the return trip. Under this concept-design, bicycles would be the only way to access Cross Gardens and the New Jersey Brigade Encampment Area, and the trails therein (via Tempe Wick Road to Leddell Road to Jockey Hollow Road).

Ultimately, the Phase I study adopted the 1973 General Management Plan proposal for Morristown: an interpretative shuttle service along Jockey Hollow loop road, within the Jockey Hollow encampment area, using a tram vehicle with trailer unit to accommodate peak season demand. This service would interchange with the park Circuit at the visitor center within the Jockey Hollow unit.

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\* The through runs would provide access to persons with disabilities. The schedules and information media (e.g., web site, brochures, maps, and schedules) would be annotated to indicate which shuttle runs provide full access.

† Encouraging bicycle traffic via the availability of free bicycles at the transfer point and increasing the presence and density of bicycle traffic on the loop road is also likely to solve the speeding and cut-through commuter traffic issues. Under the theory of "critical mass", once there is a sizeable presence of bicycle usage on a road, vehicular traffic by necessity adapts its behavior, including speed adaptation, accordingly. The high presence of bicycles, with its slower speed and "friction" to vehicular travel, also acts as an effective disincentive for using the park road as a cut-through route for commuter traffic.

## Section 3: Context and external factors impacting Phase II

Since completion of the Phase I study in December 2001, changes in local conditions and external factors have required a reconsideration of planning assumptions, constraints, policy mandates, and opportunities surrounding this Phase II detailed implementation-planning effort. These changes include

- A drop in annual visitation of ~150,000 visitors to the park, with the expectation that future trends and projections will hold stable, at best, at the reduced level of visitation (as shown in Chart 1).
- A change in park leadership (i.e., new Superintendent), requiring re-validation of the purpose and need for an ATS and requiring time to reestablish relationships with local stakeholders.
- The implementation of a new program directive imposing documentation of financial sustainability as a criterion for the approval of new ATS systems.
- A reduction in park operating base budgets, foreclosing the possibility of the park moving forward on its own (i.e., autonomous paths of development for segments of the concept-design developed in Phase I) and/or contributing towards the operations and maintenance of a joint park-town-county shuttle service.\*
- The feasibility of establishing an ATS servicing both park and community now being contingent on creating a successful public-private partnership.
- The acknowledgment of critical local stakeholders who should participate in planning for the service but who were absent during the limited stakeholder involvement and consultation that occurred during Phase I.
- The designation of Morristown as a “smart growth” transit village center under New Jersey state planning initiatives, which places an even higher priority on the need for alternative mobility options to the private vehicle and creates an opportunity to capitalize on the commuter rail connection to the wider New York-New Jersey metropolitan area for day-trip eco-cultural tourism.

### Approach to Phase II

In light of the above referenced issues and constraints, and in support of the key objectives for Phase II (as described in Section 1), the Volpe Center worked with the National Park Service’s Northeast Region Office and the Morristown NHP superintendent, deputy superintendent, and staff, to create a more interactive planning process for Phase II that would engage the critical stakeholders (including park staff) and set the stage for a future public-private partnership that would guide implementation of the first segment of the Phase I concept-plan, that is, a *pilot transit service*. The *pilot transit service* is the mechanism to test and validate market demand and whether the hoped-for benefits of a sustainable alternative transportation system can be realized.

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\* The purchase of vehicles (and supporting infrastructure such as signage and bus shelters) for an ATS is still an eligible expense under the ATP program and represents the partnership contribution of the park towards establishment of an ATS serving both the park and the town and county.



## Section 4: The planning “charrette” workshop

To accomplish this objective, the Volpe Center proposed and designed a one-day planning “charrette” workshop. There are several advantages of this approach:

- A charrette promotes enthusiasm for a project, provides understanding, creates buy-in, and instills a sense of ownership among the participants.
- Participants can be tapped for their local knowledge of the area and their particular areas of expertise.
- By splitting the participants into small groups that work on a task simultaneously, a lot of information can be generated and then gathered.
- A charrette provides a forum for people to meet each other and share ideas.
- Time and money can be saved by soliciting ideas, issues, and concerns for the project to help avoid later iterative redesign activities.
- A charrette can identify partners, available grants, and potential collaborations that can provide expertise, funding, credibility, and support for the project as it moves forward.

To realize these benefits, several objectives were set in advance of the planning workshop:

- Assure that local stakeholders identified as critical to the success of a pilot transit service are represented.
- Maximize interaction between and among the stakeholders and park staff.
- Assure that the park’s interests in achieving better transit access and mobility between its units is secured in any planning and design proposals put forth by the stakeholders in the workshop.
- Design the workshop to elicit preferences and priorities by the stakeholders with respect to route alignment and station stops.
- Design the workshop to elicit expert local context and knowledge for traffic conditions, traffic patterns, visitation patterns, street network connectivity, and parking and loading zone congestion, all of which are necessary if a recommended pilot transit service is to be operationally feasible.
- Initiate the process of creating viable partnerships between the park and local stakeholders to implement a financially sustainable pilot transit service.

In collaboration with the park, a core set of local stakeholders was identified and an invitational letter and information packet was sent (see Appendix 1). The stakeholders were organized into groups; each group was balanced with respect to organization, interest represented, and professional skill sets (as described in Appendix 2). Park staff were placed in each group and park staff also floated among the groups as necessary. Each group was provided with large maps of the area, highlighters, and stop lists.

The planning charrette centered around two scenarios (see Appendix 3 for the scripts). The first scenario provided guidelines for the teams to sketch out the route that they would like to see the pilot shuttle service follow, with a complete list of prioritized stops and an estimate of the time between stops to be included as well. The second scenario was distributed only after work on the first scenario was complete. The second scenario provided guidelines for the teams to sketch out a route that was limited to only six stops, including Washington Headquarters and Jockey Hollow as mandatory stops. This scenario was designed to simulate a more realistic situation with a constrained budget so that choices had to be made.



This experimental design guaranteed that the real tradeoffs, preferences, and priorities of the local stakeholders were elicited in a simulation of real-world constraints. By tapping the participants' local knowledge of the area, this design also yielded estimated travel times and routes between stops. This travel and route information would have been difficult, time-consuming, and arguably less accurate if collected by using a different method.

Following the two scenario exercises, the participants discussed site-specific issues (see Appendix 4), which included desired site circulation patterns and associated problems and issues as well as infrastructure needs and changes supportive of the transit service. The participants also discussed partnerships, funding, and "next steps."

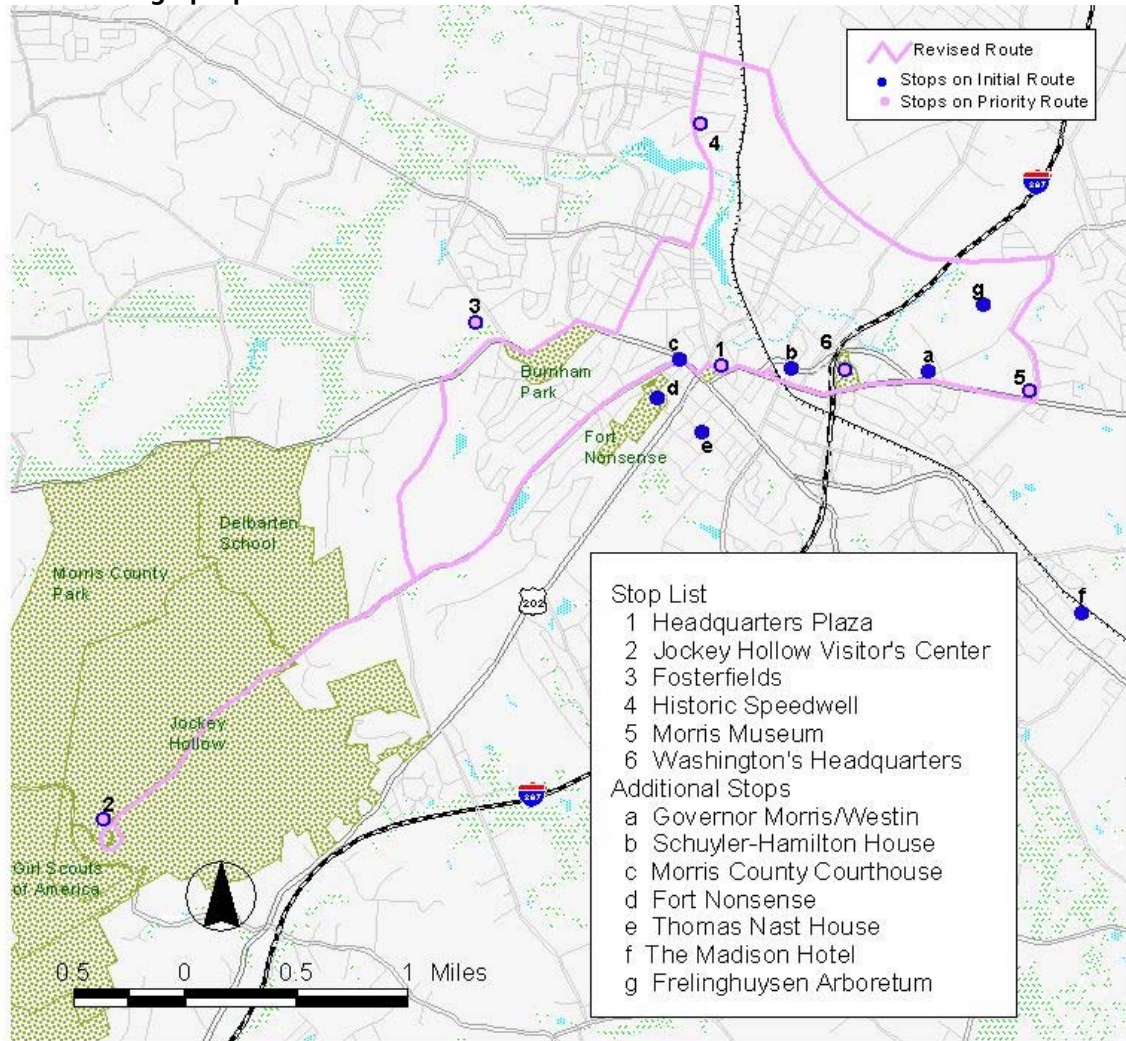
### **The stakeholder teams' transit design proposals**

The six teams' transit design proposals are illustrated in Figures 2-7. Each figure shows an overlay of Scenario 1 and Scenario 2 (in blue and pink respectively) on a base map of the area. Transit stops associated with each route alignment (also in blue and pink respectively) are listed on the map in the sequence order corresponding to the proposed routing of the transit vehicle. As indicated in the scripts for both scenarios (see Appendix 3), Washington's Headquarters and at least one stop in the Jockey Hollow unit are required stops, thereby guaranteeing that the park has connectivity via a transit shuttle service between two of its units. Discussion prior to the workshop with the park staff indicated that linking Washington's Headquarters with the Jockey Hollow unit is the top priority of the park, which is consistent with its General Management Plan (GMP).

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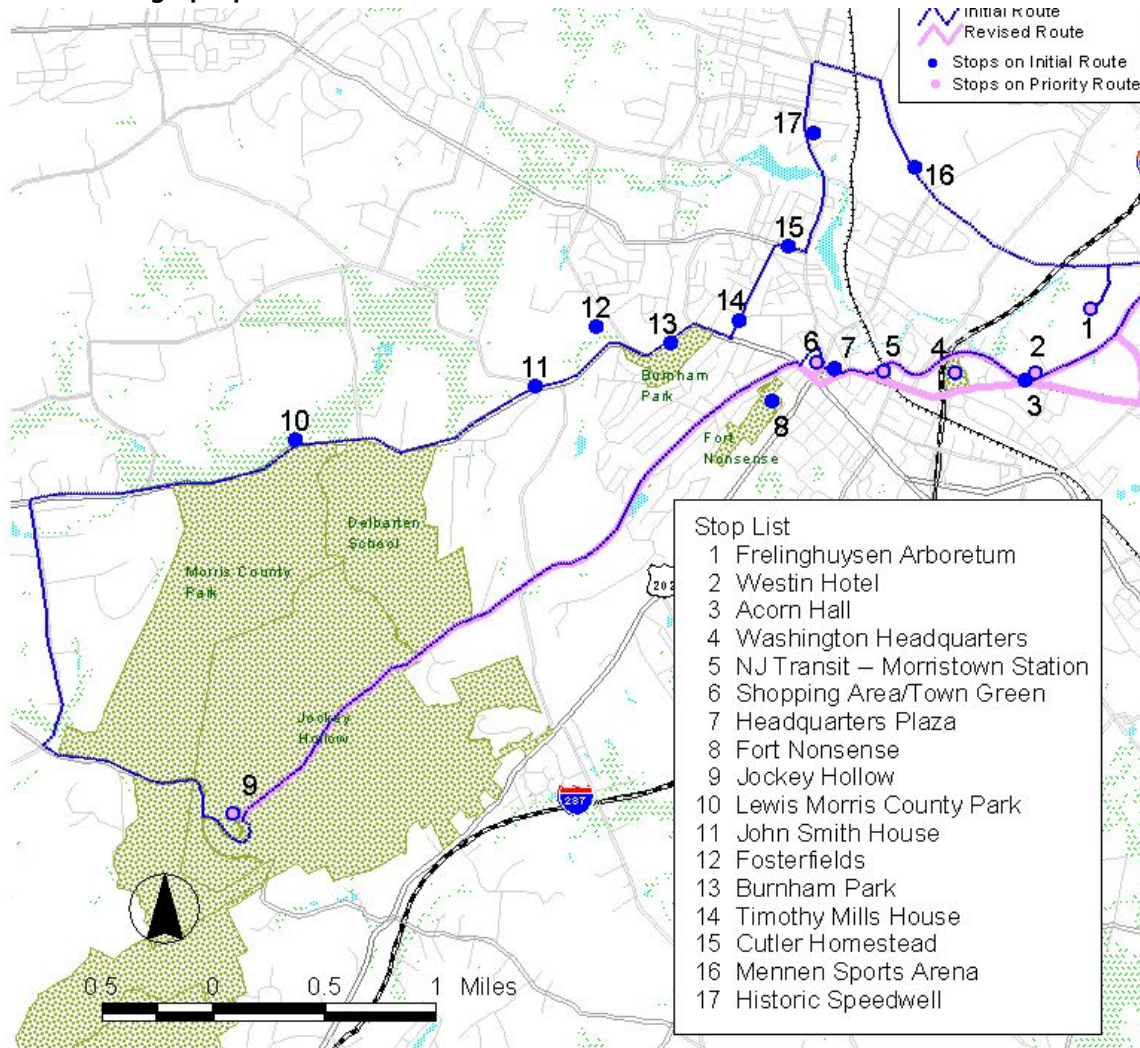
\* Base map provided by Brian Aviles/NPS/Northeast Region Office.

**Figure 2**  
**Group 1 Transit design proposals**



Group 1 listed over a dozen stops as it worked through Scenario 1 but did not sketch out a route to connect these initial stops. Group 1's priority route is the longest priority route sketched due to its inclusion of Historic Speedwell as one of its priority stops.

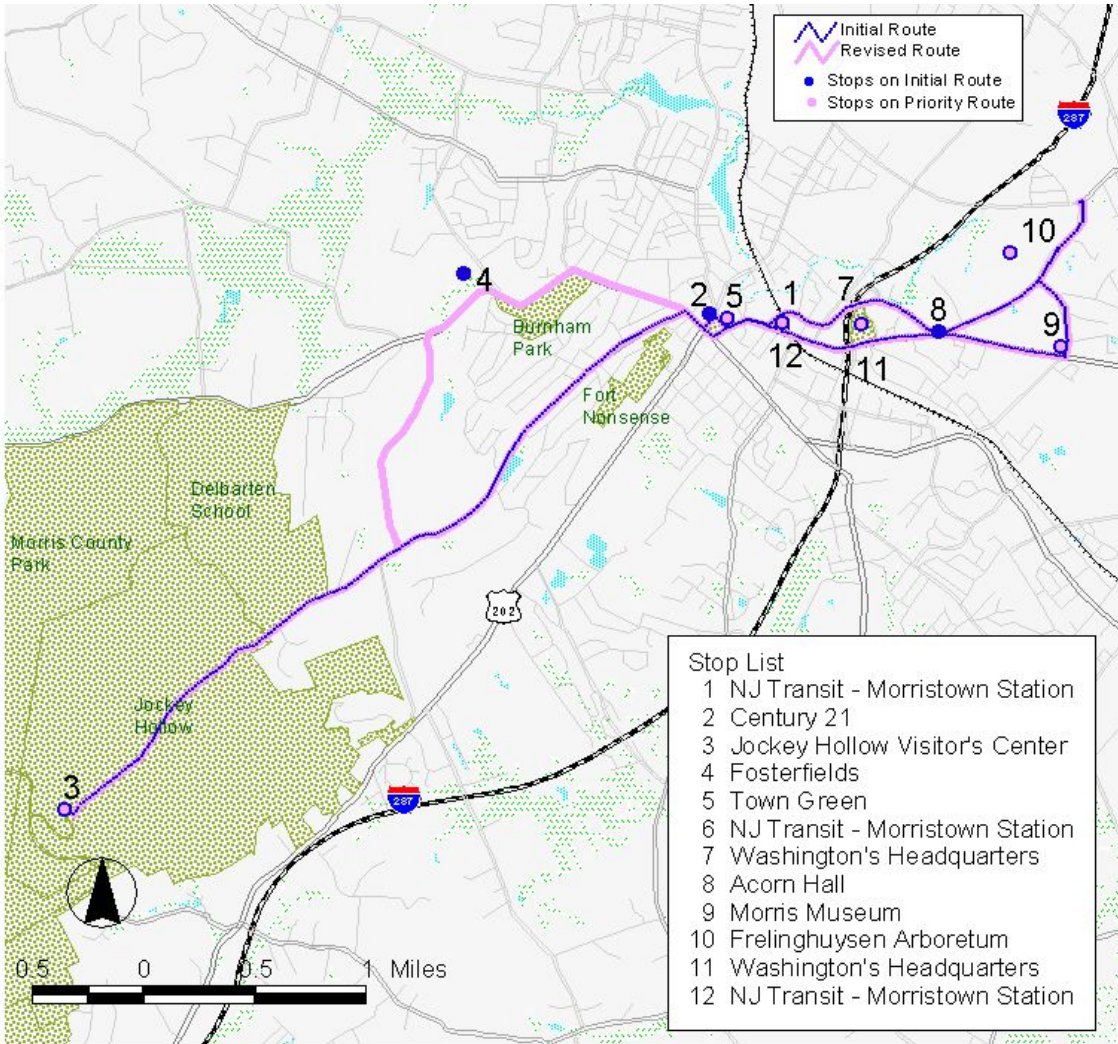
**Figure 3**  
**Group 2 Transit design proposals**



Group 2's initial route is the only one to propose a stop at Lewis Morris County Park and a subsequent loop around the park into Jockey Hollow. This group's initial route is the longest sketched by any of the groups.

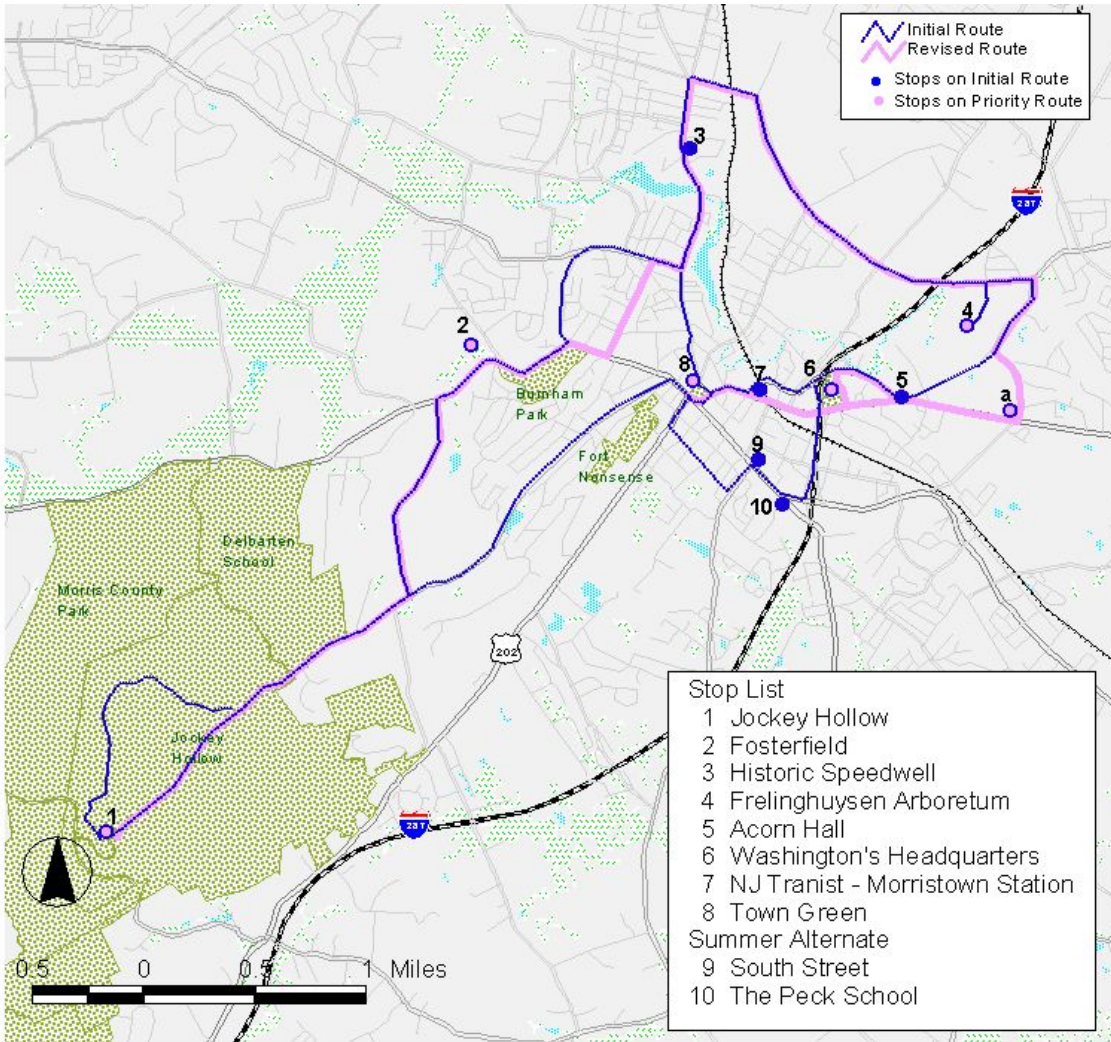


**Figure 4**  
**Group 3 Transit design proposals**



Group 3's initial route is the shortest and most compact route sketched by any group.

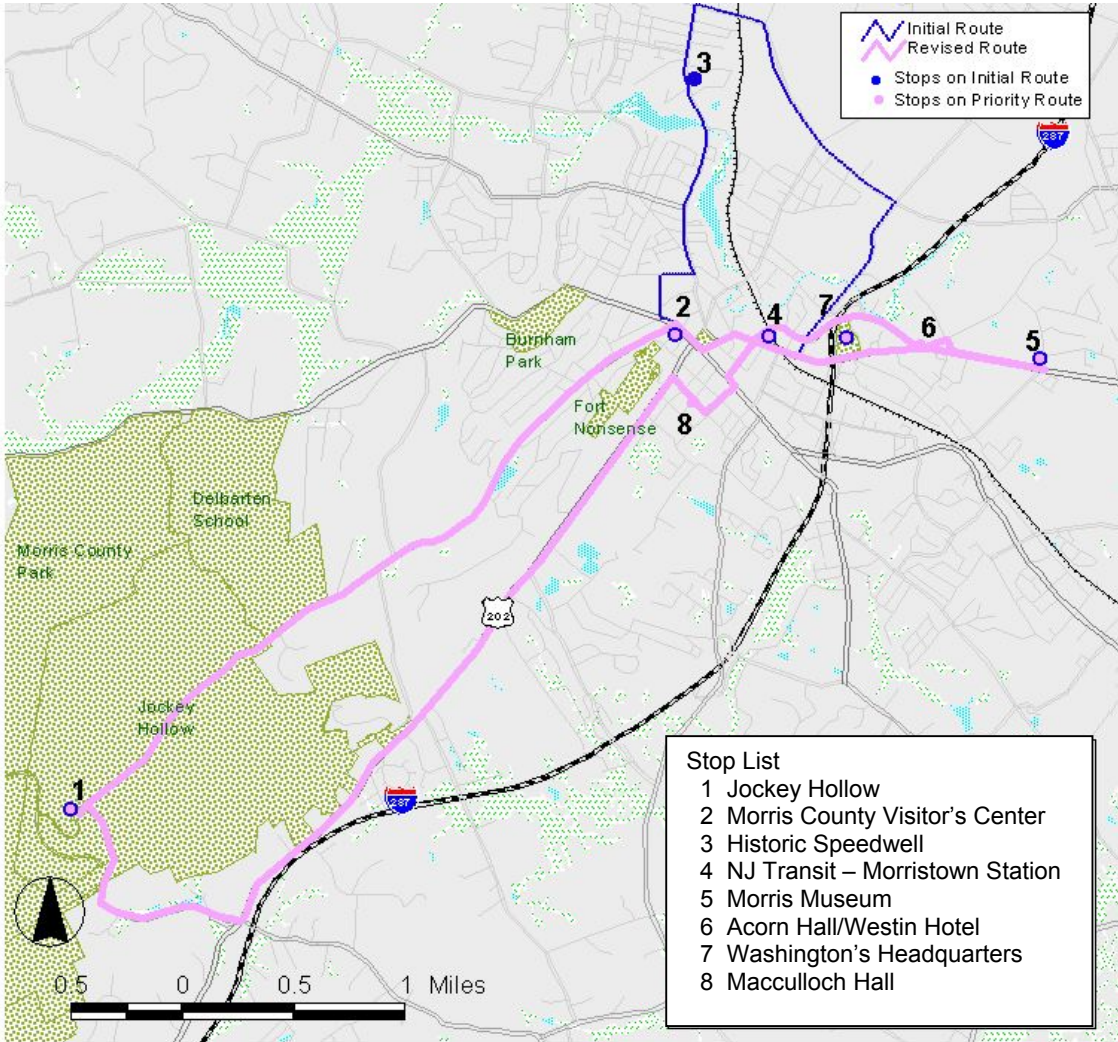
**Figure 5**  
**Group 4 Transit design proposals**



Group 4 included two alternate summers stops as part of their initial route. This group also sketched a priority route that has fewer stops than their initial route but adds a stop at the Morris Museum (designated with an “a” on the map).

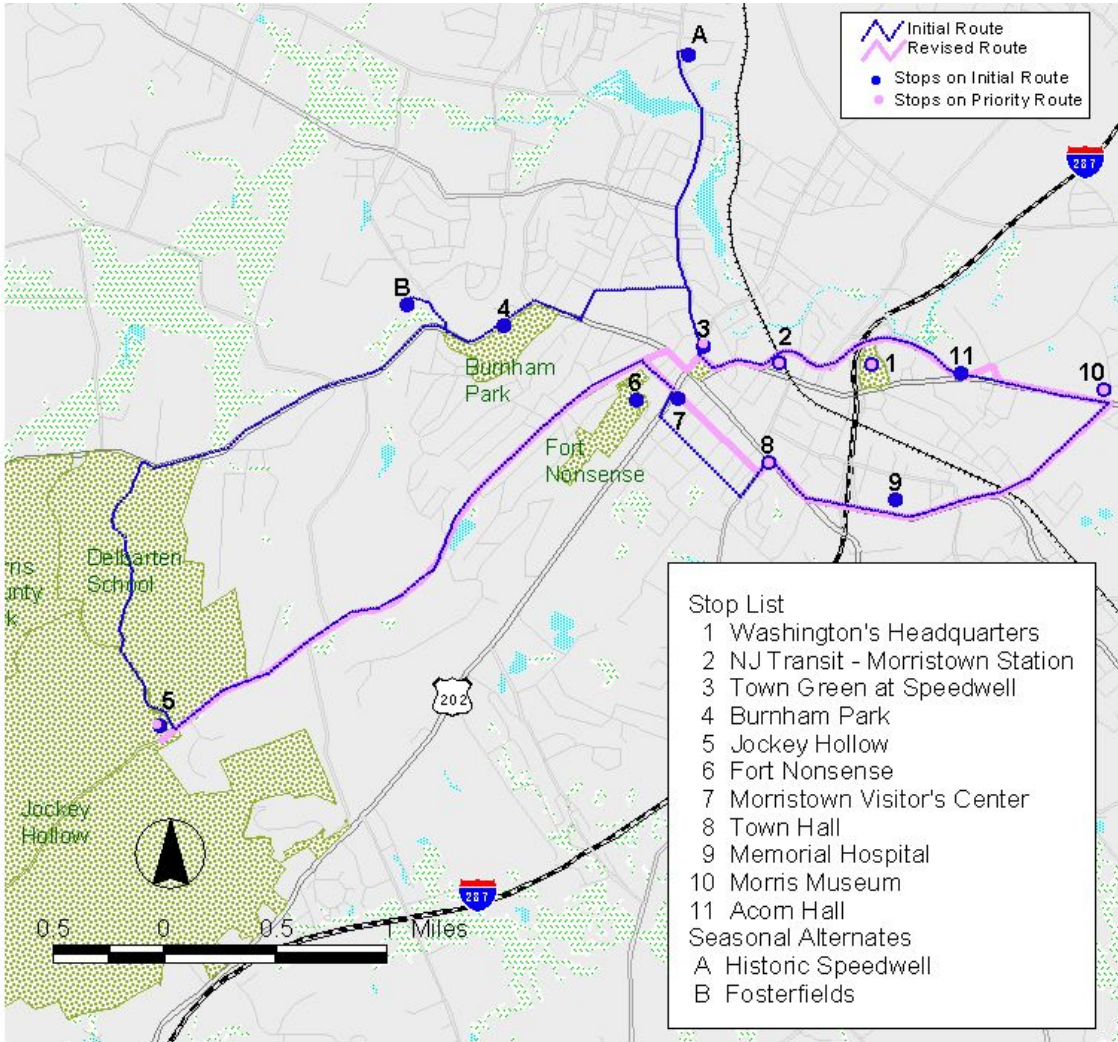


**Figure 6**  
**Group 5 Transit design proposals**



Aside from fewer total stops, the main difference between Group 5's initial route and their priority route is that their initial route includes a stop at Historic Speedwell.

**Figure 7**  
**Group 6 Transit design proposals**



Like Group 4, Group 6 included two seasonal stops as part of its initial route. Unlike other groups, Group 6's Jockey Hollow stop is not at the Visitor's Center but is at its eastern entrance.

After the groups completed Scenarios 1 and 2, a spokesperson from each group presented an analysis of their decision-logic and their transit designs to the charrette participants. The maps and stop lists were then collected and later used to inform the recommended pilot transit service route.

## Section 5: Analysis

In addition to the fundamental project evaluation criteria of the NPS Transportation Management Program<sup>†</sup> several additional principles guided the analysis of the stakeholder teams' transit design proposals and have shaped the recommendations for a pilot transit service. These principles include

- Maximize stakeholder preferences for transit stops at or in proximity to activity centers and historic/cultural institutions requiring connectivity.
- Assure that route alignments are compact for cost-effective operation and to minimize fleet size.<sup>†</sup>
- Retain a relatively short cycle time for the route so that the frequency of service for the core subset of stops does not exceed the maximum threshold of 30 minutes based on the consensus of the stakeholders in the workshop.
- Consider variations in the service route to extend to other important locations but assure the feasibility of such variations by constraining each route variation to operate to a common cycle time. This guarantees that a workable transit schedule is possible for the fleet of transit vehicles.

The Volpe Center used its professional judgment and experience when designing the final recommendation for the pilot transit service.

### **Overlay and adjustments to teams' transit design proposals**

The twelve routes conceived during the planning charrette were instructive in understanding the preferences and priorities of the various representative groups in and around Morristown. After identifying each of the routes, stops, and service decisions concretely, the travel time for each route was evaluated in order to produce a subset for detailed analysis. To consider all of the possibilities, all 12 routes were examined.

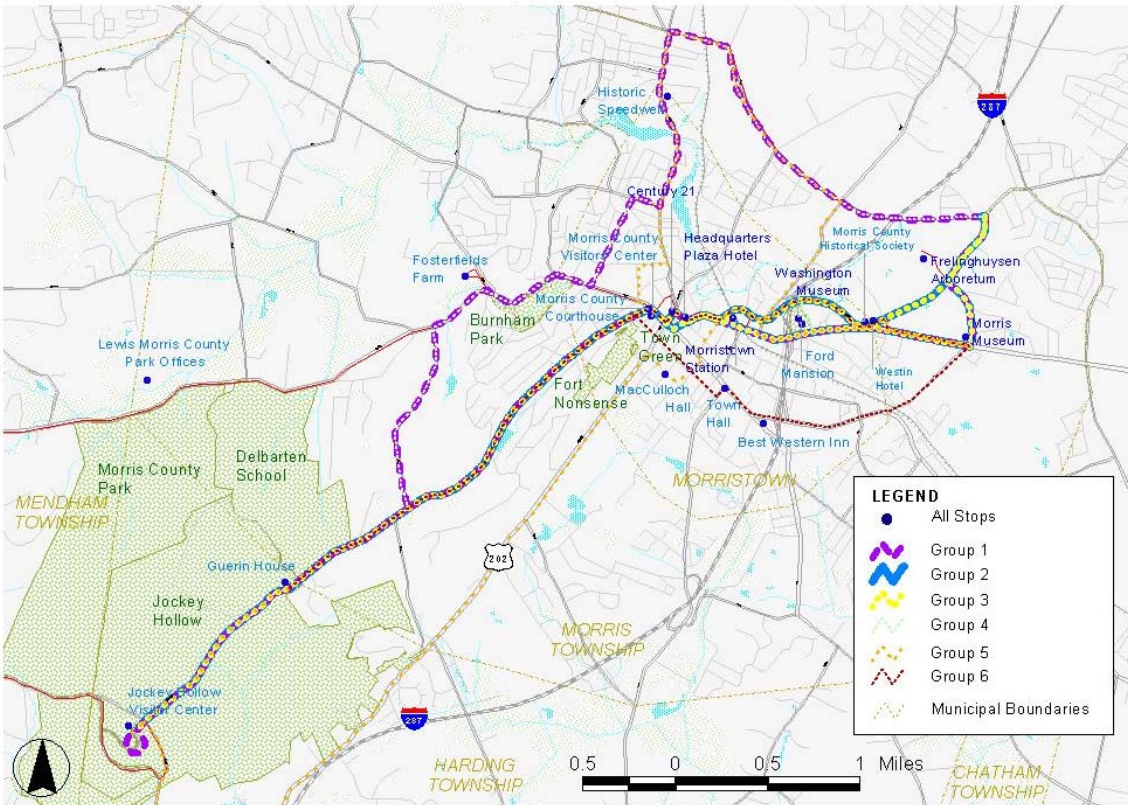
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<sup>†</sup> The criteria are: addresses a clearly defined need/problem and ties to existing planning documents and park purpose ; protects health, safety, and welfare; provides for visitor enjoyment/experience; protects natural and cultural resources; efficiency of park transportation and operations; and partnerships or cooperative planning outside of park boundaries.

<sup>†</sup> Participants at the workshop recommended altering street traffic patterns along potential routes, such as changing Washington Place from a one-way to a two-way street, to reduce route length for the transit service and achieve compactness.



**Figure 8**  
**Composite overlay of Scenario 2 transit design proposals**



It was determined that servicing all of the stops along all of the initial routes (i.e., the Scenario 1 routes) was impractical for a pilot service due to extended travel times as a result of their widespread coverage. Of the remaining six routes (i.e., the Scenario 2 routes), those having the shortest estimated travel times while also serving the most priority stops formed the basis of a more detailed analysis. Figure 8 illustrates the overlay of the six priority routes. To get a sense of the stops that were most important to the stakeholders, the distribution of each group's recommended stops by route was summarized (as shown in Table 1 below).

**Table 1****Frequency count for the number of teams listing the identified stop**

Source: Volpe Center.

Stop	Scenario 1 Initial Route	Scenario 2 - Priority Routes						Total
		Grp 1	Grp 2	Grp 3	Grp 4	Grp 5	Grp 6	
Acorn Hall	4							
Acorn Hall/Westin Hotel	1							
Burnham Park	2							
Century 21	1							
Cutler Homestead	1							
Fort Nonsense	3							
Fosterfields	5	Yes			Yes			2
Frelinghuysen Arboretum	4		Yes	Yes	Yes			3
Headquarters Plaza	2	Yes						1
Historic Speedwell	4	Yes			Yes	Yes		3
Jockey Hollow	6	Yes	Yes	Yes	Yes	Yes	Yes	6
John Smith House	1							
Lewis Morris County Park	1							
MacCullouch Hall	1							
Memorial Hospital	1							
Mennen Sports Arena	1							
Morris County Courthouse	1							
Morris County Visitor Center**	2					Yes		1
Morris Museum	4	Yes		Yes	Yes	Yes	Yes	5
NJ Transit - Morristown Station	5		Yes	Yes		Yes	Yes	4
Schuyler-Hamilton House	1							
Shopping Area/Town Green	1		Yes					1
South Street	1							
The Madison Hotel	1							
The Peck School	1							
Thomas Nast House	1							
Timothy Mills House	1							
Town Green	2			Yes				1
Town Green at Speedwell	1						Yes	1
Town Hall	1						Yes	1
Washington's Headquarters	6	Yes	Yes	Yes	Yes	Yes	Yes	6
Westin Hotel***	2		Yes					1

\* The stop lists from each group are aggregated in this table; a stop on a group's revised list is usually also listed on their initial stop list

\*\* Group 6 listed this stop as "Morristown Visitor Center"

\*\*\* Group 1 listed this stop as "Governor Morris/Westin"

**Presentation of transit route design options**

The following detailed analyses and descriptions of the recommended route options are based on several assumptions. Travel time between stops was based on the travel times given by each of the workshop teams due to the scope and budget of this project. Where there were discrepancies—of which there were few—travel times were averaged and/or aggregated and compared to Internet mapping/driving direction programs as a point of reference. Travel times and distances were then used to calculate average speeds,

route lengths, and total running times. Due to the lack of actual travel data for the route,<sup>7</sup> the study team calculated multipliers of 20% and 15% delay for AM Peak and PM Peak service periods, respectively, based on their professional judgment. The base travel time was assumed to be the mid-day, evening, and weekend travel times. Table 2 shows the service period times used for the study team’s analysis. A generic dwell time of 30 seconds per stop and a layover time of at least 5 minutes at each terminus were added to the estimated running time to calculate the total *cycle* time.

**Table 2**  
**Service period times**

Source: Volpe Center.

Buses Leaving*	Service Period
Before 10:00 AM	AM Peak
Between 10:00 AM and 3:00 PM	Mid-day
Between 3:00 PM and 7:00 PM	PM Peak
After 7:00 PM	Evening

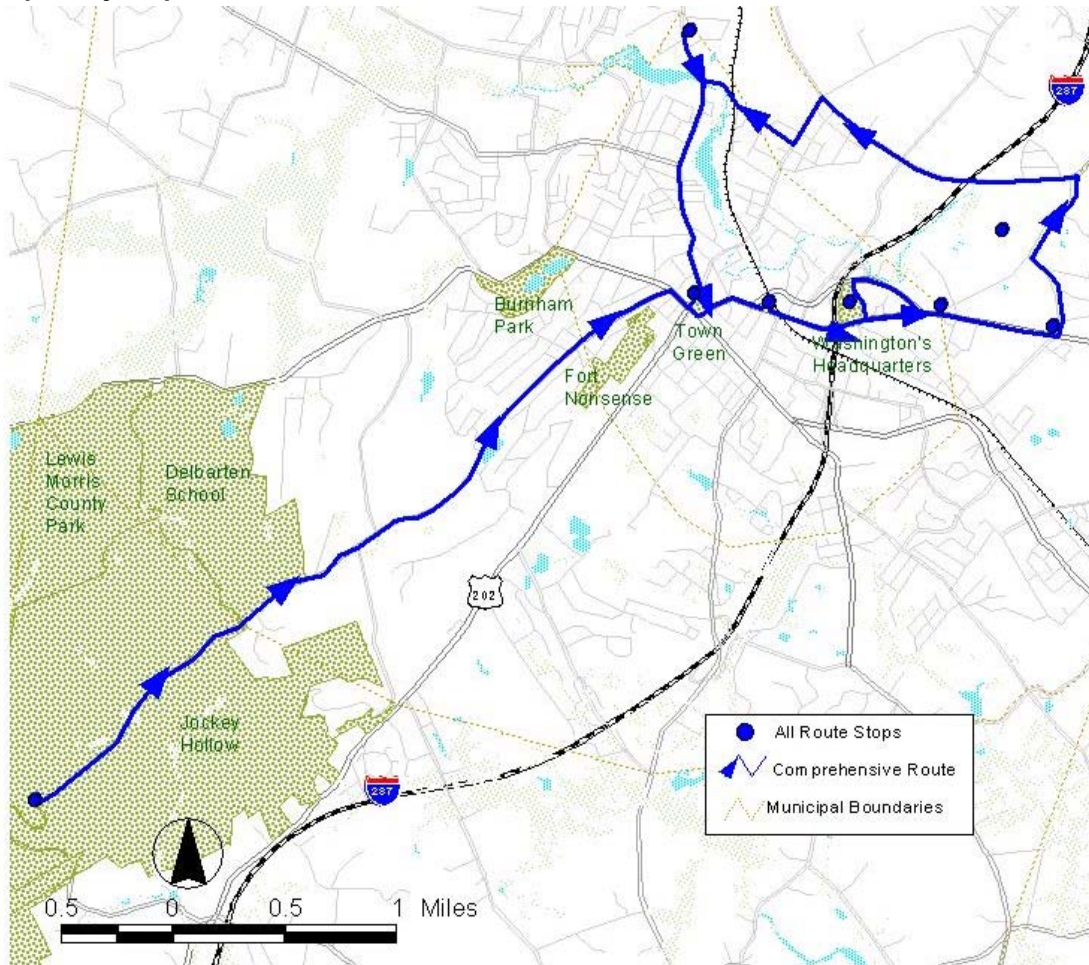
\* Based on typical definitions of rush hour

*Route 1*

The initial route considered for a pilot transit service—Route 1—included most of the priority stops identified during the planning charrette. In total, eight stops were selected for this comprehensive route (as shown in Figure 9 below).

<sup>7</sup> As discussed in Section 8 (“next steps”) of this report, a technical committee should be created and charged with gathering travel data for the route. This data should include travel times for each service period (AM Peak, Mid-day, PM Peak, Evening, and Weekends) to verify estimates.

**Figure 9**  
**Route 1: all priority stops**



Seven of Route 1's stops are among the top-ranked stops chosen by the stakeholder teams (as listed in Table 1), with the eighth, Century 21, selected to be a better downtown stop than the Visitors Center, the Town Green, or Headquarters Plaza due to site-specific reasons (detailed in Appendix 4).<sup>7</sup> Even under ideal conditions, the estimated travel time would likely exceed 1 hour since Route 1 is approximately 16 miles long (see Table 3 below). During the AM and PM peaks, travel time would increase significantly. It is unlikely that there would be sufficient demand for such a route, given that patrons would more likely drive directly to their destination in a far shorter time.

<sup>7</sup> Since the stops on the Scenario 2 route were chosen by each group as being more important than the stops on the Scenario 1 route, the study team used the top ranked Scenario 2 routes to inform their analysis. While Fosterfield's was highly ranked as a Scenario 1 route, it was not as highly ranked as a Scenario 2 route. However, a potential stop at Fosterfield's could be considered at a later time, especially if the technical committee finds that the Jockey Hollow route could accommodate another stop but still remain under an hour long.



**Table 3**  
**Stop times and distances for Route 1: all priority stops**

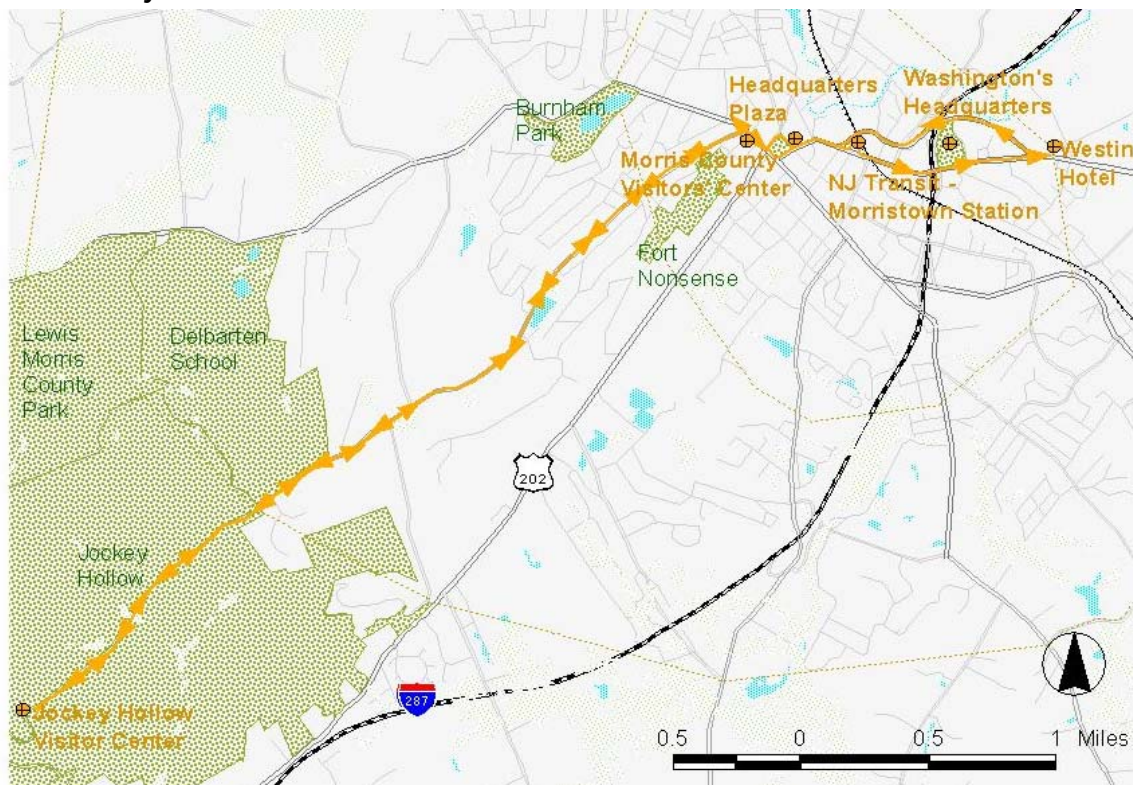
Source: Volpe Center.

#	Stop Name	Time to Next	Distance (to Next) in Miles	Average Speed to Next	AM Peak	PM Peak	Mid-day
					Time	Time	Eve/Wknd
1	NJ Transit – Morristown Station	7.00	1.24	6.00	8.75	8.24	7.00
2	Washington’s Headquarters	5.00	0.36	4.37	6.25	5.88	5.00
3	Westin Hotel	2.00	0.57	17.01	2.50	2.35	2.00
4	Morris Museum	4.00	1.43	21.38	5.00	4.71	4.00
5	Frelinghuysen Arboretum	12.00	2.73	13.63	15.00	14.12	12.00
6	Historic Speedwell	7.00	1.90	16.29	8.75	8.24	7.00
7	Century 21	12.00	3.92	19.60	15.00	14.12	12.00
8	Jockey Hollow	15.00	4.29	17.16	18.75	17.65	15.00
Total running time		64.00	16.44		80.00	75.29	64.00
Dwell time (5 min/termini)		10.00			10.00	10.00	10.00
Layover time (30 sec/stop)		4.00			4.00	4.00	4.00
Total cycle time		78.00			94.00	89.29	78.00

*Routes 2 and 3*

Route 1—all priority stops—was rejected as not practical for a pilot transit service due to its length. Two feasible possibilities consistent with the guiding principles articulated above, yet with shorter routes and run times, are *Route 2* (the “Jockey Hollow Route”) and *Route 3* (the “Arboretum Route”). Figure 10 illustrates the Jockey Hollow Route and Table 4 summarizes its stop times and distances. Figure 11 illustrates the Arboretum Route and Table 5 summarizes its stop times and distances.

**Figure 10**  
**Route 2 “The Jockey Hollow” route**



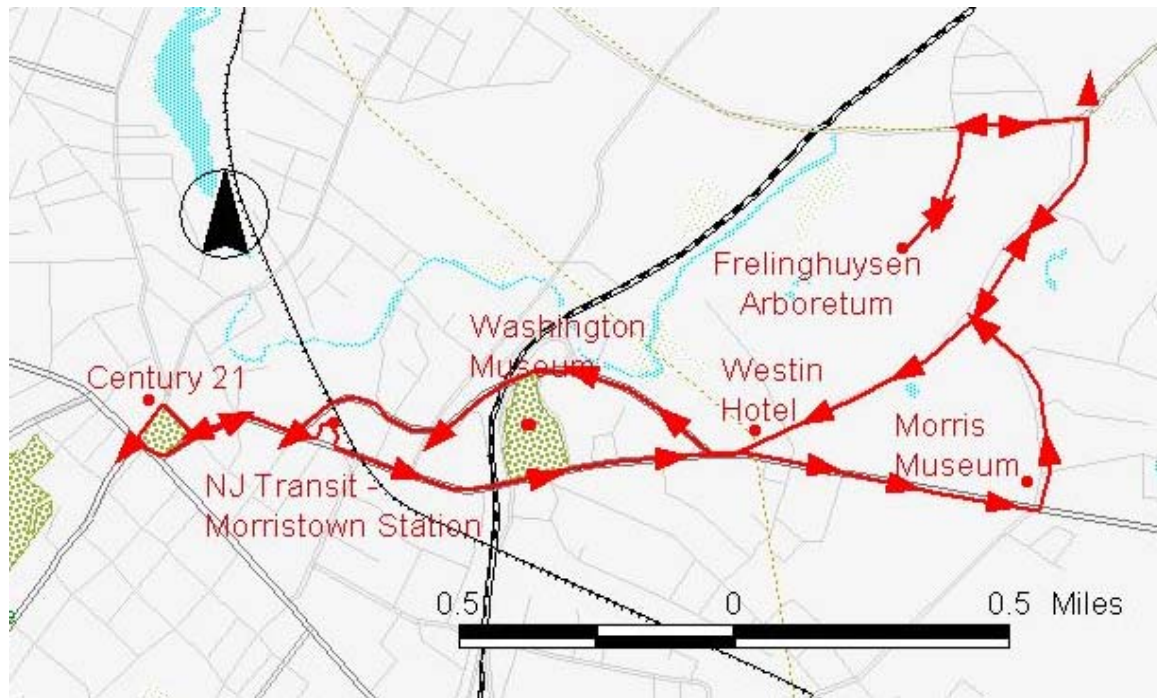
**Table 4**  
**Stop times and distances for Route 2: the Jockey Hollow route**

Source: Volpe Center.

#	Stop Name	Time to Next	Distance (to Next) in Miles	Average Speed to Next	AM Peak Time	PM Peak Time	Mid-day Eve/Wknd Time
1	NJ Transit – Morristown Station	3.00	1.00	6.00	3:75	3:53	3:00
2	Westin Hotel	3.00	0.70	14.00	3:75	3:53	3:00
3	Washington’s Headquarters	3.00	1.60	32.00	3:75	3:53	3:00
4	Headquarters Plaza	2.00	0.40	12.00	2:50	2:35	2:00
5	Morristown Visitors Center	12.00	4.20	21.00	15:00	14:12	12:00
6	Jockey Hollow	15.00	5.90	23.60	18:75	17:65	15:00
Total running time		38.00	13.80		47:50	44:71	38.00
Dwell time (5 min/termini)		10.00			10.00	10.00	10.00
Layover time (30 sec/stop)		3.00			3.00	3.00	3.00
Total cycle time		51.00			60:50	57:71	51.00

The Jockey Hollow route would serve stops from the Westin Hotel to Jockey Hollow and the Arboretum route would serve stops from the Town Green area to Frelinghuysen Arboretum. The routes would have four common stops: Washington’s Headquarters, the Westin Hotel, the downtown area, and the NJ Transit – Morristown Station. The Jockey Hollow route would cover about 14 miles and the Arboretum route would cover about seven miles. However, because the Arboretum route would be traveling more slowly through town, each route is estimated to take about an hour to complete.

**Figure 11**  
**Route 3 “The Arboretum” route**



**Table 5****Stop times and distances for Route 3: the Arboretum route**

Source: Volpe Center.

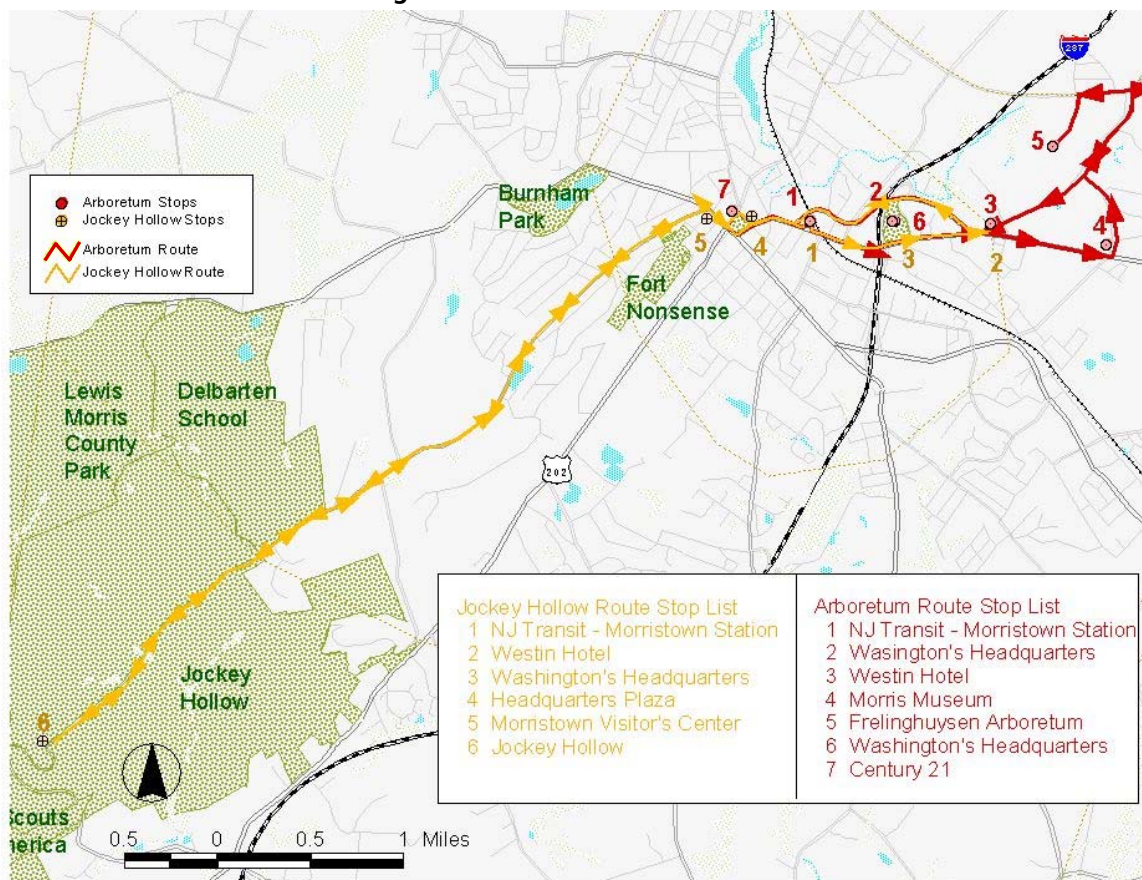
#	Stop Name	Time to Next	Distance	Average	AM Peak Time	PM Peak Time	Mid-day Eve/Wknd Time
			(to Next) in Miles	Speed to Next			
1	NJ Transit – Morristown Station	7.00	1.24	6.00	8.75	8.24	7.00
2	Washington’s Headquarters	3.00	0.36	7.27	3.75	3.53	3.00
3	Westin Hotel	2.00	0.57	17.01	2.50	2.35	2.00
4	Morris Museum	4.00	1.43	21.38	5.00	4.71	4.00
5	Frelinghuysen Arboretum	7.00	1.80	15.43	8.75	8.24	7.00
6	Washington’s Headquarters	5.00	0.81	9.74	6.25	5.88	5.00
7	Century 21	5.00	0.37	4.44	6.25	5.88	5.00
Total running time		33.00	6.58		41.25	38.82	33.00
Dwell time (5 min/termini)		10.00			10.00	10.00	10.00
Layover time (30 sec/stop)		3.50			3.50	3.50	3.50
Total cycle time		46.50			54.75	52.32	46.50



## Section 6: Recommendations

Given the analysis of Routes 2 and 3, it is recommended that shuttles to both Jockey Hollow and the Arboretum (Figure 12) leave from the NJ Transit – Morristown Station on an alternating hourly basis (i.e., alternating vehicle runs). Costs are not significantly different from costs for each route separately since each route takes about an hour to complete, but by alternating destinations, this service is able to serve a wider community. While this configuration would service four core destinations every half hour (the downtown, the NJ Transit – Morristown Station, Washington’s Headquarters, and the Westin Hotel), it would also allow hourly service to Jockey Hollow, the Morris Museum, and Frelinghuysen Arboretum, with connections to the trailheads at Jockey Hollow and to the extensive county trail system at the Arboretum (Figure 13, below). Either of these destinations would be a great attraction to day-trippers from the New York – New Jersey metropolitan area arriving at the NJ Transit – Morristown Station where they could then transfer to the ATS.

**Figure 12**  
Composite of recommended alternating routes





**Figure 13**  
**Hypothetical schedule illustrating concept of operations for recommended pilot transit service, consisting of alternating runs between the Jockey Hollow route and the Arboretum route**

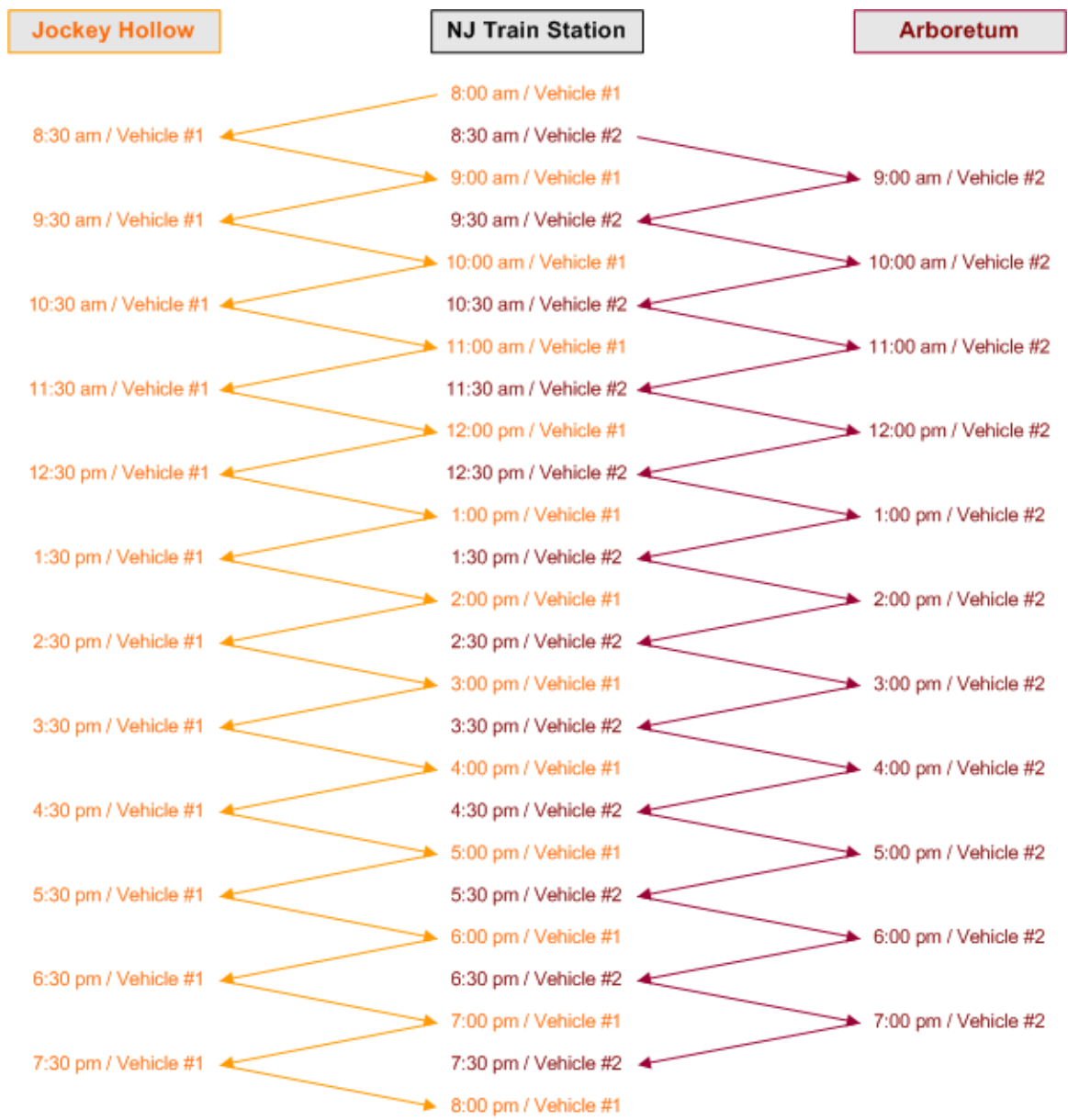


Figure 13 uses the estimated cycle time for both routes of 60 minutes, which represents the running time, dwell time, and layover at the NJ Transit – Morristown Station and at the termini, Jockey Hollow and the Arboretum, for AM peak service. If a shuttle route is running under an hour, as it would during off-peak times, the vehicle can dwell at any of the stops for a greater amount of time compared to the dwell time during the AM peak service. For illustrative purposes, the figure shows a span of service of 12 hours, between 8:00 AM and 8:00 PM, which represents the maximum span of service discussed and agreed upon as a possibility by workshop participants, the park, and the Volpe Center based on the hours of operation of the stops being served.

Costs for providing service on the two routes were estimated based on the hourly service plan discussed above. Because stakeholders, the park, and the Volpe Center discussed a number of possibilities for the duration and provision of service on a weekly and seasonal basis, several service plans were estimated to

illustrate the sensitivity and variation of costs to the span of service; see Table 6 below. This analysis uses an estimate of \$85 per vehicle hour for operating and maintaining each vehicle and assumes two vehicles running to service the hypothetical schedule (Figure 13). Seasonal service is defined as the months from May to October; off-season is from November to April. The scenario the stakeholders ultimately choose may be dependent on the amount of funding available.

**Table 6**  
**Estimated annual operation and maintenance (O&M) costs**

Source: Volpe Center.

Service plan	Weekday			Weekend			Total O&M Cost Per Year
	Months Served	Hours Served Per Day	O&M Cost Per Year	Months Served	Hours Served Per Day	O&M Cost Per Year	
Year-round service on all days	12	12	\$489,600	12	12	\$244,800	\$734,400
Year-round service on weekends, afternoon service during the week	12	8	\$326,400	12	12	\$244,800	\$571,200
Year-round service on weekends, seasonal service during the week	6	12	\$244,800	12	12	\$244,800	\$489,600
Year-round service on weekends only	0	0	\$0	12	12	\$244,800	\$244,800
Seasonal service on weekends only	0	0	\$0	6	12	\$122,400	\$122,400

As previously discussed, two buses would be needed to service the schedule proposed in Figure 13. Using an estimate of \$150,000 for a typical, 30-foot transit bus (as shown below in Figure 14),<sup>†</sup> the capital costs would be \$300,000. However, the purchasing of a back-up bus would be prudent in case one of the two buses is under repair. For periods when all three buses are fully functional, the idle bus could rotate every day to increase the longevity of the fleet.

The determination of vehicle size and design is not within the scope of Phase II. However, a smaller vehicle, such as a \$50,000 cutaway, or the leasing of buses may be more suitable for the pilot transit service. Buses could be leased for approximately \$1000 per month. If the pilot service is successful, buses could be purchased the following year. The Technical Subcommittee should make the vehicle size and design decision, as well as the determination of which acquisition option (i.e., lease versus buy) to pursue (see Section 8).

\* Estimate based on submissions of the Transportation Management Program's Financial Pro Forma by other parks, and on ATS studies conducted by the Volpe Center; data has been modified by a cost premium to reflect a high-cost metropolitan area.

† Estimate based on U.S. General Services Administrator data, vehicle supplier data, and ATS studies conducted by the Volpe Center at Shenandoah NP, and Tallgrass Prairie NP.

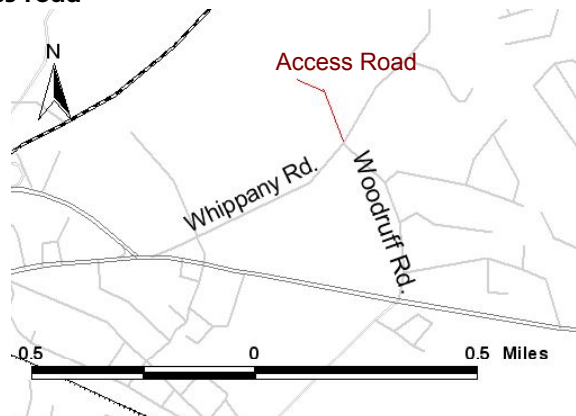
**Figure 14**  
**A typical 30-foot bus**

Source: US DOT/RITA/Volpe Center, Tallgrass Prairie Vehicle Decision Procurement Document, 2004.



Figure 12, earlier, illustrates the route alignment considering current traffic and street patterns. During the workshop, it was noted that there exists a one-way access road restricted in its current use that connects the Arboretum to Whippany Road at the intersection of Woodruff Road (see Figure 15). It is recommended that ATS vehicles be allowed two-way access to the Arboretum using this access road. This action would shorten the Arboretum route and achieve a more compact, cost-efficient design with improved in-vehicle time to and from the Arboretum for patrons using the ATS.

**Figure 15**  
**Schematic of Arboretum access road**



## Section 7: Partnerships, funding, and transit service fee structure

### Partnerships

Strong partnerships with the community are crucial to the project’s success. The stakeholder workshop began forming these partnerships between and among members of the community and the park in two important ways. First, the workshop brought people together in a single venue to work on a single issue. Coming together and being focused on one issue allowed the stakeholders to discuss and share ideas and to get to know each other better or for the first time. This process resulted in new and strengthened relationships. Second, the workshop provided the stakeholders with a venue for designing the shuttle service with a keener sense of ownership of the development and implementation of the shuttle service. Combined, these two outcomes have accelerated the momentum necessary for carrying the shuttle service project forward to making it a reality.

### Funding

No single stakeholder, including the National Park Service, will be able to fund a shuttle service in Morristown. While one agency may be able to fund the capital expenses, one or more other agency or group(s) will need to fund the operating costs. Partnerships between two or more stakeholders will be necessary for funding the development of this shuttle service.

In the afternoon at the workshop, participants brainstormed on ways to fund the shuttle service. The Volpe Center evaluated and summarized the ideas in Table 7 below.

**Table 7**  
**Funding possibilities for the shuttle service**

Source: Volpe Center.

Capital Costs
New Jersey Transit may be able to provide seed money for a community shuttle program, but would not be able to fund operating costs
Federal transportation funds (e.g., Congestion Mitigation and Air Quality funds) could be allocated through the region’s Transportation Management Association (TransOptions), which is currently funding three county shuttles and two studies for service
Local school bus companies may be willing to partner since some of the routes they make may duplicate the shuttle service
Due to the high cost of fuel, it may make sense to obtain a bus that is powered by alternative fuels
The presentation developed by the county and the park could be given to the MPO (the North Jersey Transportation Planning Authority) and a request for funding could be submitted
Operating Costs
Foundations may be able to provide seed money until advertising money and other funding could kick-in. These foundations include the Dodge Foundation, Kirby, and Johnson & Johnson
Community organizations’ services are funded by other organizations. Partner with them to provide services that can help build partnerships, free up funds for this program, and reduce duplicate efforts. Foundations are looking for these types of collaboration
Devise, propose, and implement a hotel room tax

Also, a number of similar shuttle services have been developed over the past decade or so, serving places including: Cape May (NJ), Cooperstown (NY),<sup>\*</sup> Colonial Williamsburg (VA), Cape Cod (MA), Okracoke (NC),<sup>†</sup> the Connecticut coast, and Bar Harbor (ME). These examples, all of which share some similarities

<sup>\*</sup> [http://www.cooperstownchamber.org/secondary/info\\_booth/trolley\\_parking.htm](http://www.cooperstownchamber.org/secondary/info_booth/trolley_parking.htm)

<sup>†</sup> This system is currently under consideration/development.

to the proposed Morristown service, could be studied to determine what worked well and what did not with respect to funding the shuttle service, especially the operating costs of the service.

### **Fares**

Possible fee options that have been used for other shuttle services and could be used by Morristown include

- an all-day pass that would allow users to hop on and off throughout the day (this may be the easiest/simplest structure for both riders and drivers); there could be a set discounted fare for stops at just the museums as well
- a fare for each ride (a zone/distance based structure) with a museum/attraction fare reduced at a proportion of the standard fare (children under a certain age could ride free)
- a partnership with a college/school may yield a free ride for students
- people may be able to ride free for special events or perhaps on certain days

Possible distribution/ticketing methods include

- Tickets could be distributed through New Jersey Transit.<sup>7</sup>
- Drivers could collect the fare.
- Tickets could be sold through vending machines, which could be incorporated into the county's kiosks.
- Tickets could be sold by local businesses, perhaps with discounts for store purchases.
- Ticket stubs could be good for discounts at local restaurants and businesses, which could in turn help fund the shuttle service.

Overall, participants stated that the fee structure should be as simple as possible: the more complicated the fee structure becomes, the harder it becomes for the service to be successful. Installing fare boxes and having the driver collecting money may be difficult and would result in higher operating costs when compared to purchasing tickets at local outlets. Requiring exact fare would further complicate the process. Accordingly, the simplest method may be for local outlets to sell all-day tickets to the riders. This would allow the rider the greatest amount of freedom and flexibility and would help keep the operating and capital costs at a minimum. The Finance Subcommittee (see Next Steps, Section 8) should determine what an all day ticket would cost by performing a demand analysis as part of its work on the details of how the pilot service should operate.

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<sup>7</sup> See MTA's Metro-North, Long Island Rail Road, and NYC lines for models.

## Section 8: Next Steps

Based on the recommendation for a pilot transit service, there are certain logical next steps to move forward with the development and implementation of the park-community ATS system. Although specific dates depend on numerous variables, the steps are listed in a time-sequential order of precedence.

1. A “purpose and need” statement for a shuttle service in Morristown should be included in the North Jersey Transportation Planning Authority’s Regional Transportation Plan update so that there is a basis for making a funding request in the future for such a service. The Volpe Center drafted and submitted the following purpose and need statement on the town and park’s behalf:

“A multi-purpose shuttle system would provide a number of multi-purpose advantages. First, it would promote historic and eco-tourism by connecting a number of historic and outdoor sites, such as parks and hiking areas, water access (lakes and rivers), and historic buildings and districts. In addition to connecting people to these historic and outdoor sites, a multi-purpose shuttle would provide intra- and inter-city mobility by connecting destinations throughout the community and surrounding areas, such as major employers and commercial areas, with residential areas and parking facilities (if designed for accordingly). Last, all of this would be accomplished while decreasing the number of cars on the area’s streets, thereby alleviating congestion and pollution in the area.”
2. The park should submit an internal Project Management Information System (PMIS) submittal for “Phase III” to help facilitate the stakeholder committee work articulated below and to complete environmental compliance public process and documentation (contingent on an affirmative decision by the stakeholders to go ahead with implementation of a *pilot transit service*).
3. Town, county, and park officials should develop and coordinate a presentation of the Phase II ATS planning study, and organize an outreach program, making use of the presentation. Beyond the initial core set of stakeholders who attended the planning charrette workshop, the outreach program should attempt also to include other major employers and potential transit users such as
  - The arts community
  - Other hotels in the area\*
  - The New York-New Jersey Trail Conference
  - Colleges (the College of St. Elizabeth, the Rabbinical College Of America)
  - Developers, such as Woodmont Properties, which is developing the transit village adjacent to the train station<sup>†</sup>
  - The hospital and its employees
  - The school district since the ATS system could substitute for some of the area’s school busing
4. Stakeholders should reconvene to discuss and make a decision on the recommendation for the *pilot transit service* presented in this report. Depending on the outcome of the decision, the group should organize three subcommittees to move forward with implementation:
  - Technical Subcommittee: responsible for working out the street and traffic circulation patterns, location of passenger loading/unloading zones, and site infrastructure needs at or in the proximity to each ATS stop; timing vehicle runs of the recommended routes (i.e., the Jockey Hollow route and the Arboretum route) to fine-tune the estimated cycle times reported as a basis for determining vehicle requirements; designing a signage and way-finding system supportive of the ATS and coordinating its implementation with the appropriate government agencies (i.e., local and county highway departments; Morristown

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\* Hotels in the area are usually relatively empty during the weekends compared to the weekdays. They may be interested in pursuing a way to get more visitors staying in their rooms, especially during the weekends. Representatives from one area hotel participated in the charrette, but representatives from the other two major hotels in the area (the Westin and the Headquarters Plaza Hotel, which is undergoing a purported change in ownership) were not able to attend.

<sup>†</sup> [http://www.woodmontproperties.com/res\\_cs.html](http://www.woodmontproperties.com/res_cs.html)

Parking Authority); preparing bid documents for contract to an operator; and developing a monitoring system for the ATS system to measure level-of-service and usage, and as a basis for adjusting the service.

- Policy Subcommittee: responsible for determining the span of service (i.e., season(s) and time-of-day) and days of service (i.e., weekday, weekend, or both); establishing policy headways (maximum vehicle headway irrespective of market demand); developing and implementing a marketing and outreach program; submitting requests and receiving necessary government permits and approvals; the interpretive program (if any) for the ATS; and integrating the ATS with the programmatic needs of the historic/cultural institutions served by the system.
- Finance Subcommittee: responsible for identifying and obtaining commitments of financial support, and in-kind support necessary to sustain the operational and maintenance cost of the ATS system; designing the fee structure for the system; and developing the ticket distribution system with local outlets. Refined estimates of these costs will be one outcome of the joint work of the technical and policy subcommittees. Revised estimates of the vehicle requirements developed by the technical subcommittee will allow the park to proceed ahead with a request for vehicle acquisition (should the Technical Subcommittee decide to buy versus lease) and supporting infrastructure funding as its contribution to the partnership.



## Appendix 1: Invitational letter sent to potential workshop participants



### United States Department of the Interior

NATIONAL PARK SERVICE

Morristown National Historical Park

30 Washington Place

Morristown, New Jersey 07960 - 4299

April 4, 2005

Invitee's Name, Title

Company

Address

City, NJ Zip Code

Name:

We would like to invite you to join the National Park Service in an effort to create a pilot transportation service linking the Morristown National Historical Park (NHP) to various cultural and commercial sites in and around Morristown. We plan to hold a "Stakeholder's Workshop" on May 5, 2005, from 9:30am to 3:00pm at Haggerty Education Center at Frelinghuysen Arboretum in Morristown to begin crafting beneficial and cost-effective service to the park, as well as various sites in the area. Your perspective is a valuable resource to us, and identifies you as a key stakeholder who can contribute greatly to this workshop. Not only will this discussion cover a variety of topics that might interest you, but your presence and input would be very valuable and appreciated as well.

This Workshop is an important part of the National Park Service's Alternative Transportation Program, which seeks to improve the visitor experience and minimize the negative environmental impacts of transportation by providing park visitors with alternatives to the automobile. Transportation planners from the US Department of Transportation's Volpe Center will facilitate this Workshop. This Workshop is being held as part of the second phase of a potentially three-phase project. Phase One, completed in December 2001 by the US DOT's Volpe Center in collaboration with Morristown NHP, yielded a "Concept Plan" that recommended linking the park and town via a shuttle bus system. Phase Two will yield an "Implementation Plan" for the route a pilot shuttle bus system will take and perhaps chart how the pilot could be extended to include a full-time program. Phase Three will include environmental compliance and other permitting and regulatory steps before implementing the service.

The Workshop will consist of the following parts:

- An overview of Phase One and a discussion of changed conditions since its completion;
- An exercise where participants will be asked to plan the route and stops that they would like the shuttle to serve, and to discuss complementary infrastructure such as shelters and transit system wayfinding signage requirements;
- A more in-depth look at stop locations within specific sites;
- A discussion about possible funding sources and potential partnerships that could be established to support this endeavor; and



- A discussion of next steps for the park and its partners.

We plan on organizing the Workshop in teams of stakeholders, and will work our way through each of the activities in either small groups or teams or in a plenary session. We will provide large maps of the Morristown area but strongly encourage you to bring along any other information you think would be helpful to the exercise and to the discussions – site plans, visitation data, traffic counts and level-of-service for major arterials, and information on how visitors currently access your site.

We sincerely hope that you will join us. By having a wide variety of stakeholders sharing their perspectives in one room at the same time, we believe that we will effectively address many issues that may arise and thereby arrive at an innovative service route that makes the most sense for the park and for other stakeholders in the Morristown area.

Please contact Community Planner Ben Rasmussen with the US DOT Volpe Center (617-494-2768, [rasmussen@volpe.dot.gov](mailto:rasmussen@volpe.dot.gov), or fax the enclosed form) by April 18 to let us know if you will be able to attend this workshop. If you are unable to attend for all or part of the day, please designate someone from your organization to attend in your place or contact Mr. Rasmussen to discuss your availability. If you have any questions, please feel free to contact Mr. Rasmussen or Deputy Superintendent Joseph Green (908-766-8226, [Joseph\\_S\\_Green@nps.gov](mailto:Joseph_S_Green@nps.gov)). A packet with more information on the project and the Workshop will be forthcoming.

Thank you and we hope to hear from you soon,

Randy Turner  
Superintendent

## Appendix 2: Stakeholder teams

### Team I

- 1 Judith Schleicher Morris County Parks Commission
- 2 Thomas Kenny Township of Morris
- 3 Elliott Lee Dodge Foundation
- 4 Arlette Klaric Craftsman Farms Foundation, Inc.
- 5 Cathy Bachmann Washington's Headquarters Neighborhood Association
- 6 Brian Brodhead Morristown National Historical Park

### Team II

- 1 David Helmer Morris County Parks Commission
- 2 Bob Pegg New Jersey Transit - Bus Planning
- 3 Nicholas Pedell Governor Morris Westin Hotel
- 4 David Breslauer Macculloch Hall Historical Museum
- 5 Joseph DeMonte Morristown National Historical Park

### Team III

- 1 Mark Texel Morris County Parks Commission
- 2 Ron Tindall New Jersey Transportation Planning Authority
- 3 Charles Lamb Community College of Morris
- 4 Leslie Bensley Morris County Visitor Center
- 5 Bob Masson Morristown National Historical Park

### Team IV

- 1 Ray Chang Morris County Planning & Development
- 2 Donald A. Watt TransOptions
- 3 Jim Hecox Best Western Hotel
- 4 Dana Malkowski Best Western Hotel
- 5 Emily Evans Morris Museum
- 6 Jude Pfister Morristown National Historical Park

### Team V

- 1 Sharon Reider Morris County Trust for Historic Preservation
- 2 Deena Cybulski Morris County Division of Transportation Management
- 3 Bryan Curtis Best Western Hotel
- 4 Peter Palmer Morristown Memorial Hospital (Atlantic Healthcare Systems)
- 5 Catherine Schrein Somerset County Environmental Education Center & Lord Stirling Park
- 6 Mark Sutherland Morris County Parks Commission
- 7 Anne DeGraaf Morristown National Historical Park

Team VI

- |   |                 |                                                   |
|---|-----------------|---------------------------------------------------|
| 1 | Ken Nelson      | Town of Morristown, Engineering, Planning, Zoning |
| 2 | Pat Geary       | Morristown Parking Authority                      |
| 3 | Jennifer Cronin | Morristown Partnerships, Inc.                     |
| 4 | Barbara Mitnick | Washington Association of New Jersey              |
| 5 | Glenn Kendall   | Morristown National Historical Park               |

## Appendix 3: Workshop scenario scripts

### Stakeholder's Workshop Morristown NHP Alternative Transportation Study, Phase II May 5, 2005

#### Session IIa – Route-Planning Parameters

- Include Washington Headquarters and *at least* Jockey Hollow as a second MNHP site
- Identify and/or incorporate several cultural, recreational, and commercial sites in the greater area
- Include some common points with train and local bus
- Accommodate bicycle and pedestrian access as well as private vehicles
- Include a transportation hub (or justification for not including one)
- Determine how often this service is provided (once every certain number of minutes/hours, more or less frequent service at various times of the day/week)

#### End Product

- A suggested route highlighted in blue with stops demarcated by a blue post-it note
  - Each stop/post-it note should have a number and a name (if possible)
  - The order of the stops should be listed on the team's Stop Sheet and correspondingly numbered
  - Also on the team's Stop Sheet, outline how often the service is provided
  - If time, include approximate number of minutes between stops

**Stakeholder's Workshop**  
**Morristown NHP Alternative Transportation Study, Phase II**  
**May 5, 2005**

Session IIa - Team Number \_\_\_\_

**Stop Sheet**

	Stop Name	Mins. to next stop		Stop Name	Mins. to next stop
1			11		
2			12		
3			13		
4			14		
5			15		
6			16		
7			17		
8			18		
9			19		
10			20		

**Frequency of Service**

	Timeframes			
Weekday				
Weekend				
Holiday				

**Stakeholder's Workshop**  
**Morristown NHP Alternative Transportation Study, Phase II**  
**May 5, 2005**

Session IIb – Restricted Route-Planning Parameters

- As career planners are aware, budgets are tight and initial budgets are sometimes slashed, so please re-think the route developed in Session IIa so that it conforms to these budget-restricted parameters:
  - There can only be six stops total
  - The service can only be provided on average 10 times per day
  - Include Washington Headquarters and at least Jockey Hollow as a second MNHP site

End Product

- A suggested route highlighted in pink with stops demarcated by a pink post-it note
  - Once again, each stop/post-it note should have a number and a name (if possible)
  - The order of the stops should be listed on the team's Stop Sheet and correspondingly numbered
  - Rank the restricted number of stops in order of importance
  - Also on the Stop Sheet, outline how often the restricted service is now provided

**Stakeholder's Workshop**  
**Morristown NHP Alternative Transportation Study, Phase II**  
**May 5, 2005**

Session IIb - Team Number \_\_\_\_

**Stop Sheet**

	Stop Name	Priority	Mins. to next stop
1			
2			
3			
4			
5			
6			

**Frequency of Service**

	Timeframes			
Weekday				
Weekend				
Holiday				

## Appendix 4: Stop-specific considerations and concerns

In the afternoon, workshop participants expressed the following concerns and considerations regarding many of the stops that the teams considered in the morning session.

### Jockey Hollow

- A fee structure is in the works
- Construction at the visitor center will take 18 months
- Parking will be constant
- This unit of the park can accommodate large vehicles in front of the visitor center
- There is a 20 mph speed limit
- The New Jersey Brigade can also accommodate buses
- There is a pull-out near huts

### Washington Headquarters

- A 2-way street would be better for Washington Pl., but neighborhood concerns need to be addressed
- The GMP references a 2-way street at Washington Pl., as suggested above
- A safety issue (for pedestrians and motorists) is the intersection of Lafayette and Washington Pl.
- These concerns may have implications on the suggested routes
- There are 60 parking spaces now, but there will be over 100 once construction is done

### Headquarters Plaza

- Has a double bay, but vehicles cannot turn back to the Green; instead, they must go north
- The location works for going right towards Historic Speedwell
- Century 21 may be a better stop – it is 50 yards away and would have money and the desire for a connection
- The double parking that currently occurs in front is a congestion issue that would need to be addressed
- The town would need to enforce any change in parking or traffic rules
- The hotel is undergoing management change
- The complex is reluctant to have others use their parking structure due to safety and security concerns in the parking structure

### New Jersey Transit – Morristown Station

- There is currently a lack of restrooms here
- The access to the station is not aesthetically welcoming as people pass under the tunnel
- The location would be conducive for having a kiosk
- There may currently be a competition for space in the lot and turn around area
- There is a big loading zone for 30-40' vehicles
- Turning movements could be problematic for safety (and not space) reasons
- People want a connection from the train station to where they want to go

### Town Green

- Circulation problems exist around the Green
- Traffic lights back up traffic already due to timing and intermittent distances
- There is congestion especially from the traffic light near Century 21
- There is a yellow zone across from Epstein's for maintenance vehicles parking
- Epstein's is being demolished, so there will be construction management issues and a new use for the building that should be accommodated



### **Morris Museum**

- The museum is expanding with a new wing in the back breaking ground soon; it should be done in about 18 months for a completion in 2006
- Space for a shuttle service already exist because buses already have access
- There are 191 parking spots in the museum's lot

### **Westin Hotel**

- To access the hotel, vehicles have to bear right on Columbia off Morris
- Access to the hotel is confusing, which results in lost drivers
- It would be easier if vehicles could make a left off Whippany, and the hotel has the permits to change this

### **Frelinghuysen Arboretum**

- Has 2 permanent bus pull-outs and 1-2 others in the parking lots
- Has one-way access out back
- Is refurbishing bathrooms
- 45-50 spots are used by schools

### **Morristown Visitor Center**

- The center is on a small street, but access is better than on the Green
- There is no bus parking, but the county is reconstructing the right-of-way in the area, so it may be possible
- The center is not advocating for a stop, but would want a stop nearby for access
- The courthouse will be getting fewer visitors due to increasing safety and security concerns
- Perhaps there could be a stop on Ann near the county's parking garage
- Some of the roads in the area may be under the state's purview
- The center is in good proximity to Fort Nonsense

### **Historic Speedwell**

- The facility is about to undergo an 18-months renovation
- There is a drop-off area on 202 at Vail House
- Getting state permission for service may be difficult
- The current parking lots are difficult for buses to handle

### **Foster Fields**

- The facility is undergoing a 12-month renovation, but more parking will result
- There is currently a circular flow pattern around the facility
- The facility will have lights, will be close to 100% accessible, and will have restrooms
- The Burnham pool is close, but the area is dangerous for pedestrians
- It may be good to add a stop in season

### **Additional stops not considered by the teams at the workshop, but discussed as a group in the afternoon**

- James and South Streets
  - It would be very difficult to make a stop work along these streets unless it was in front of Kings, which is a half block away
  - The area is dangerous for pedestrians
  - The area becomes difficult to manage during rush hours
  - Macculloch Road or Maple Ave might be better choices; they are wide and would service/pass a few historic sites. However, this a historic neighborhood, so there may be some community resistance

- The Armory
  - The armory may be a potential stop for tours, but would be more used for employees in the area
  - Lots of parking exists
  - There is good access for buses
  - The facility is used for special events and becomes crowded during major events

**General Concerns/Issues**

- Parking on weekends should be no problem; but parking on weekdays is more difficult
- When possible, it would be wise to use/align the service with existing bus stops since that would lessen community impacts and resistance



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