

ALTERNATIVE 3

Alternative 3 would provide a ride-and-learn visitor transportation service that would be focused more on providing a sightseeing and interpretive experience than on providing convenient transportation service.

- Three interconnected, one-way routes would be provided in the visitor core, covering a larger service area than in Alternative 1. The Arlington National Cemetery service would be extended to the U.S. Marine Corps War Memorial. Excursion tours would be provided as warranted by market conditions. Access would be provided to 42 of the top destinations in the Washington area.
- In-depth and flexible learning experiences would be emphasized, but with limited choice of alternative programs.
- Access policies for the recreational use of Segway® HTs or electric scooters would not change under this alternative, and no additional actions would be taken to manage travel demand.

TRANSPORTATION SERVICE

Visitor Core

Transportation service in the visitor core would consist of three interconnected one-way routes. The geographic limits are Arlington National Cemetery on the west, Union Station and 1st Street NE on the east, K Street NW on the north (with an optional extension to N Street NW), and Ohio Drive SW and East Basin Drive SW on the south.

The three routes would intersect on 15th Street NW/SW in front of the Washington Monument to accommodate transfers. The following routes are proposed (see the “Alternative 3: Visitor Core Transit Service” map for route length, travel time, and stop information):

- **Green Route** — The Green Route would provide one-way loop service between

Union Station and 17th Street NW/SW. This route would operate along the National Mall by way of Madison Drive NW and Constitution Avenue NW, and Jefferson Drive SW and Independence Avenue SW. It would cross the National Mall on 17th Street NW/SW.

- **Red Route** — The Red Route would provide one-way loop service between Judiciary Square, Lafayette Park, and the Tidal Basin area. This route would operate along a portion of the National Mall by way of Constitution Avenue NW, Jefferson Drive NW, and Independence Avenue SW, and it would cross the National Mall on 15th and 17th streets NW/SW.

A future optional segment for the Red Route could extend north of K Street NW to provide access to the Mary McLeod Bethune Council House. This extension would add approximately 0.7 mile and would result in about a 4% increase in related fleet and operating requirements. This optional route extension would be based on future market demand, cost-effectiveness, and financial feasibility.

- **Blue Route** — The Blue Route would provide one-way loop service between Arlington National Cemetery and 15th Street NW/SW. This route would operate along West Potomac Park by way of Constitution Avenue NW and Independence Avenue SW, and it would cross the National Mall on 15th Street NW/SW.

Transportation Service Infrastructure

Transportation services would continue to operate in mixed-flow traffic entirely on public rights-of-way, including existing roads.

Fares and Ticketing

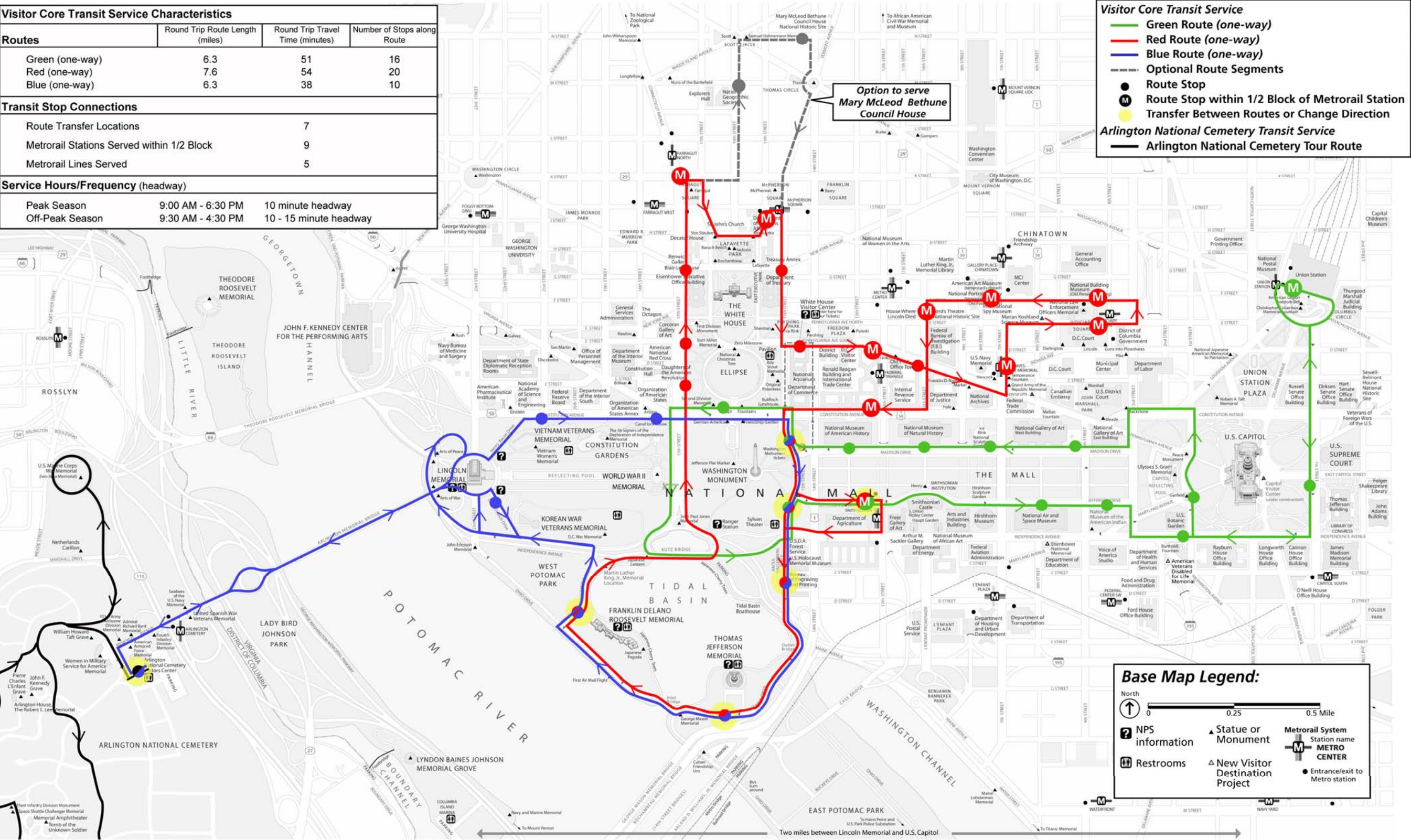
A daily fare would be established during the implementation phase and would be based on

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Visitor Core Transit Service Characteristics			
Routes	Round Trip Route Length (miles)	Round Trip Travel Time (minutes)	Number of Stops along Route
Green (one-way)	6.3	51	16
Red (one-way)	7.6	54	20
Blue (one-way)	6.3	38	10
Transit Stop Connections			
Route Transfer Locations	7		
Metrorail Stations Served within 1/2 Block	9		
Metrorail Lines Served	5		
Service Hours/Frequency (headway)			
Peak Season	9:00 AM - 6:30 PM	10 minute headway	
Off-Peak Season	9:30 AM - 4:30 PM	10 - 15 minute headway	



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estimated ridership, expenses, funding sources, and a final service delivery plan. Tickets could be obtained at staffed ticket outlet locations (such as the Arlington National Cemetery visitor center, Union Station, the Washington Monument ticket kiosk, and automatic ticket vending machines along the visitor core routes). They could also be purchased in advance by phone or on the Internet. Tickets would provide all-day hop-on / -off access, and single- or multi-day passes for adults and children would be offered.

Public Transit Connections

A total of nine Metrorail stations would be within one-half block of transit stops in the visitor core, and each route would provide at least one stop at a Metrorail station. Metrobus routes could also be accessed along several segments of the visitor core routes, including stops along Constitution Avenue NW, Independence Avenue SW, 7th Street NW/SW, 17th Street NW/SW, and K Street NW, as well as at Union Station.

Operating Plans

Daily seasonal hours of operation would be the same as Alternative 1, from 9 a.m. to 6:30 p.m. during the peak season, and from 9:30 a.m. to 4:30 p.m. during the off-peak season. Service frequency would be the same as Alternative 2, every 10 minutes during the peak season and on weekends during the off-peak season, and every 15 minutes on weekdays during the off-peak season.

Educational / Interpretive Services

Orientation and interpretation of sites along the transit routes would be provided by the driver and audio/electronic information systems. These systems could use pre-recorded announcements on the vehicles' public address systems, personal headsets, and electronic screens.

Staffing

Approximately 45 full-time employees, including transit drivers, vehicle mechanics, maintenance personnel, and general administrative staff would be required for the visitor core transportation service.

Arlington National Cemetery

Alternative 3 would continue to provide shuttle bus sightseeing tours with recorded narration within Arlington National Cemetery, with service extended to the U.S. Marine Corps War Memorial. The route description, fares and ticketing, operating plans, educational / interpretive services, and staffing would be the same as described for Alternative 2.

Supplemental Transportation Services

Excursion tours would be provided to cultural and historic sites outside the visitor core area, including Mount Vernon and Frederick Douglass National Historic Site, as described under Alternative 1. In addition to staffed ticket outlet locations, the National Park Service would seek to provide excursion tour tickets at automatic ticket vending machines along the visitor core routes, as well as by phone or on the Internet for advance purchases.

ACCESS TO TOP DESTINATIONS

The proposed visitor core routes would serve 42 of the top destinations in the metropolitan area, 14 more sites than under Alternative 1 (a 50% increase).

Two-way service by means of separate one-way routes would be provided to the following destinations:

- Washington Monument
- U.S. Capitol
- Jefferson Memorial
- Arlington National Cemetery
- Union Station

One-way service would be provided to the following destinations:

Lincoln Memorial
 National Air and Space Museum
 Vietnam Veterans Memorial
 National Museum of American History
 National Museum of Natural History
 White House Visitor Center
 World War II Memorial (from a stop along
 Constitution Avenue; no direct service on
 Home Front Drive)
 U.S. Marine Corps War Memorial (by way
 of the Arlington National Cemetery
 service, the same as Alternative 2)

RIDERSHIP

Table 10 presents transit ridership estimates for the visitor core and Arlington National Cemetery under Alternative 3.

Table 10. Ridership Estimates — Alternative 3

Year	Visitor Core	Arlington National Cemetery
2015	539,000	998,000
2025	588,000	1,088,000

NOTE: The factors used for ridership projections are described on page 25.

TRANSIT VEHICLES

Types of transit vehicles would be the same as described under “Planning Considerations and Assumptions.” Numbers of vehicles are shown in Table 11.

Table 11. Number of Transit Vehicles Required — Alternative 3

	Visitor Core	Arlington National Cemetery*	Excursion Tours**
Peak Service	19	9	4
Spare Vehicles	5	3	1
Total	24	12	5

* Same as Alternative 2.

** Same as Alternative 1.

FACILITIES

Visitor Core Transit Stops

A total of 35 transit stops would be developed. There would be three types of transit stops,

and certain improvements (bus pads and curb ramps) would be made to 25% of the stops. In addition, ticket vending machines would be installed at a third of the stops.

Maintenance / Storage Facility

It is assumed that the current maintenance / storage facility would serve a comparable function under this alternative. However, if the facility was determined to be inadequate or incompatible with NPS land uses, site improvements or new offsite facilities could be required. For the purposes of this document, estimated site requirements for a new bus maintenance / storage facility are shown in Table 12.

Table 12. Maintenance / Storage Facility Site Requirements — Alternative 3

Transportation Service	Estimated Site Requirements	
	Low Range	High Range
Visitor Core and Excursion Tours	3.5 acres	4.0 acres
Arlington National Cemetery	3.7 acres	3.7 acres
All Services Combined in One Facility	5.2 acres	5.7 acres

NOTE: Key factors related to maintenance/storage facility requirements are presented on page 28.

New facilities would be the responsibility of the operator and would need to be provided offsite. Actual requirements would be determined by the operator and addressed in response to a public solicitation process.

COSTS

Estimated capital costs and annual operation and maintenance costs are shown in Table 13.

**Table 13. Projected Capital and Annual Operating Costs — Alternative 3
(in millions)**

	Visitor Core	Arlington National Cemetery	Excursion Tours	Total
Vehicle Fleet	\$17.42	\$7.33	\$2.04	\$26.78
Transit Stops	\$3.05	N/A	N/A	\$3.05
Total Capital Costs	\$20.47	\$7.33	\$2.04	\$29.83
Annual Operating Costs	\$3.86	\$1.75	\$0.89	\$6.50

NOTE: Assumptions for costs are described on page 29.

MULTIMODAL ACCESS (SEGWAY® HT, SCOOTER, AND BICYCLE)

No access changes would be made for pedestrians, bicycles, or other personal transportation vehicles used for recreation (e.g., Segway® HTs and electric scooters). Access would be consistent with the description in “Planning Considerations and Assumptions.”

TRAVEL DEMAND MANAGEMENT

No changes in travel demand management beyond those discussed in “Planning Considerations and Assumptions” would be made under this alternative.

ALTERNATIVE 4

Alternative 4 would provide a coordinated system of easy-to-use bus transportation designed to maximize views while conveniently meeting the needs for frequent service between visitor sites.

- Three interconnected, two-way routes would be offered in the visitor core, covering a larger service area than Alternative 1. The Arlington National Cemetery service would be extended to the U.S. Marine Corps War Memorial. Two supplemental transportation services (an introductory tour plus excursion tours) would be provided as warranted by market demand. Access would be provided to 43 of the top destinations, and optional excursion routes could provide access to two additional sites, for a total of 45 sites.
- Orientation and interpretation would be provided by drivers and audio/electronic information systems.
- Approximately 400 public parking spaces on Madison Drive NW and Jefferson Drive SW would be eliminated, and these roadways would be closed to private vehicle access, with access only for handicapped parking and for transit and delivery vehicles. The recreational use of Segway® HTs and electric scooters would be allowed on all park trails. No additional actions to manage travel demand would be taken.

TRANSPORTATION SERVICE

Visitor Core

Transportation service in the visitor core would consist of three interconnected two-way routes. The geographic limits are Arlington National Cemetery on the west, Union Station and 1st Street NE on the east, K Street NW on the north, and Ohio Drive SW and East Basin Drive SW on the south.

The three routes would intersect on 15th Street NW/SW in front of the Washington Monument to accommodate transfers. Madison Drive NW and Jefferson Drive SW would be closed to private automobile traffic, and general public parking and access would be limited to transit and special uses. The “Alternative 4: Visitor Core Transit Service” map shows the routes, lengths, travel times, and stop information for each route described below:

- **Green Route** — The Green Route would provide two-way service between Union Station and Washington Circle (K Street and 23rd Street NW) and would operate along the north side of the National Mall by way of Madison Drive NW and Constitution Avenue NW.

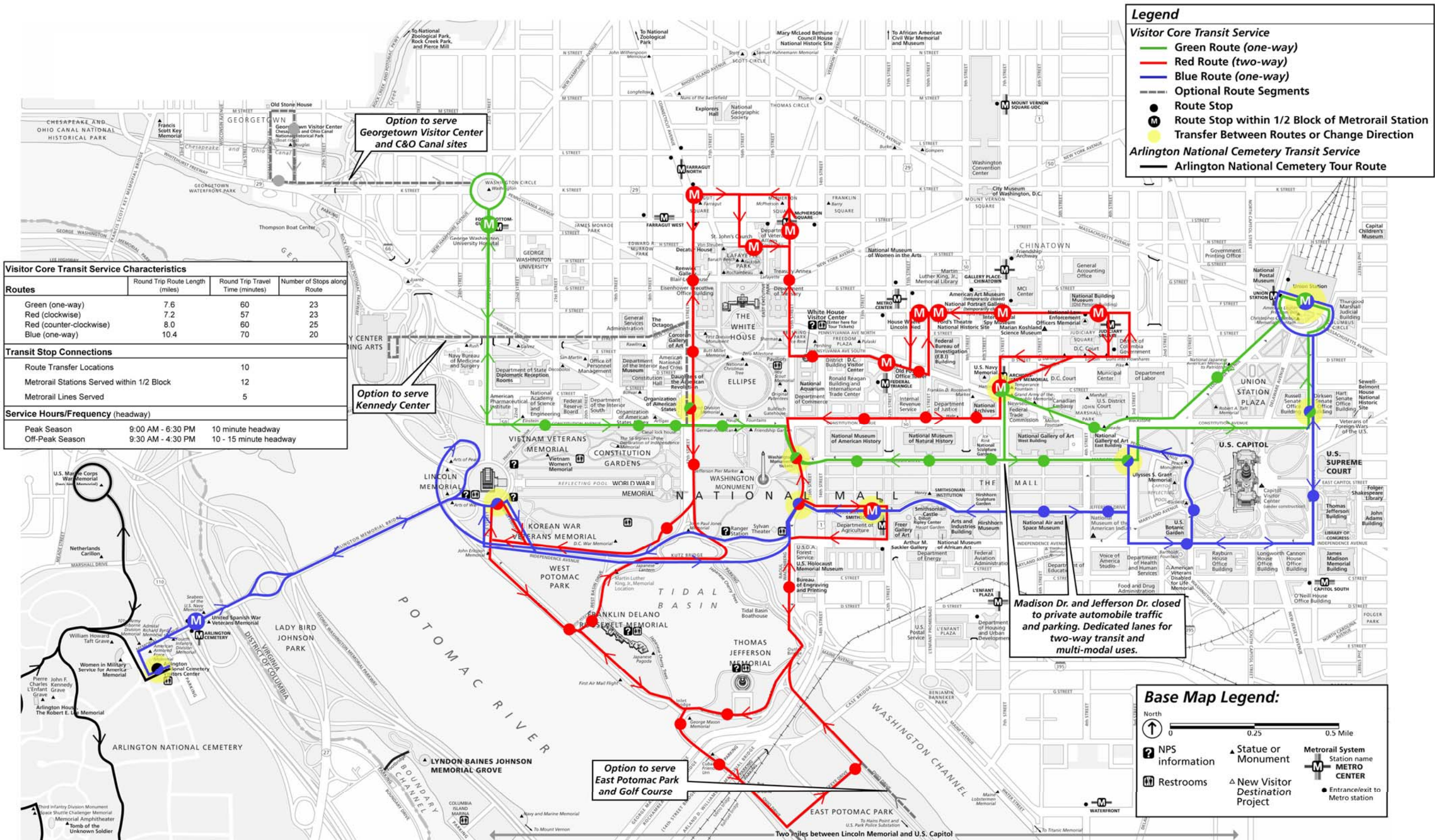
Two future optional segments are a west-bound route segment on E Street NW from 17th Street NW to the John F. Kennedy Center for the Performing Arts that would replace a segment along Constitution Avenue NW from 17th Street to 23rd Street NW.

Another optional segment would run between Washington Circle and Georgetown in the northwest quadrant of the city. The route would extend west on K Street NW and Whitehurst Freeway, following Thomas Jefferson Street NW, M Street NW, and 30th Street NW to provide access to the Chesapeake & Ohio Canal National Historical Park and the Georgetown visitor center.

These two optional Green Route segments would add approximately 4 miles, and related fleet and operating requirements would increase by approximately 12%. The decision to provide these future route extensions would be based on access provisions, market demand, cost effectiveness, and financial feasibility.

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- **Red Route** — The Red Route would provide two-way loop service between the Jefferson Memorial, Farragut Square, and the Judiciary Square area, crossing the National Mall at 17th Street NW/SW.

A future optional segment could serve East Potomac Park, following Ohio Drive SW around the perimeter of East Potomac Park and serving other recreational activity sites, including a golf course, swimming pool, tennis courts, and picnic areas. This route extension would add approximately 2.5 miles, and related fleet and operating requirements would increase by approximately 8%.

- **Blue Route** — This route would provide two-way service between Union Station and Arlington National Cemetery and would operate along the south side of the National Mall by way of Independence Avenue SW and Jefferson Drive SW.

Infrastructure

As stated under “Planning Considerations and Assumptions,” transportation services would operate entirely on public rights-of-way, and no new roadways would be developed for such services. However, Alternative 4 proposes restricting private vehicle traffic on Madison Drive NW and Jefferson Drive SW to accommodate two-way transit movements, transit vehicle circulation, transit stops, pedestrian movements, and other special uses. Allowable uses would include all services defined under this alternative (private tour buses, handicap parking, taxicabs, commercial delivery, and specially permitted vehicles). Tour bus loading and unloading would continue to be restricted by time, and no extended tour bus parking would be allowed.

Approximately 400 public parking spaces on Madison Drive NW and Jefferson Drive SW would be eliminated, or less than 1.8% of locally available private parking spaces as inventoried by the Downtown Business Improvement District in 2001, without taking into con-

sideration additional downtown on-street metered parking.

Fares and Ticketing

A daily fare would be established during the implementation phase and would be based on estimated ridership, expenses, funding sources, and a final service delivery plan. Ticket availability and distribution would be the same as described under Alternative 2.

Public Transit Connections

Transit routes would provide access or be within one-half block of 12 Metrorail stations. Each route would stop at least at three Metro-rail stations. Metrobus routes could also be accessed along several segments of the visitor core routes, including stops along Constitution Avenue NW, Independence Avenue SW, 7th Street NW/SW, 17th Street NW/SW, and K Street NW, as well as at Union Station.

Operating Plans

Daily hours of operations would be the same as described for Alternative 1, from 9 a.m. to 6:30 p.m. during the peak season, and from 9:30 a.m. to 4:30 p.m. during the off-peak season. Service frequency would be the same as Alternative 2, every 10 minutes during the peak season and on weekends during the off-peak season, and every 15 minutes on week-days during the off-peak season.

Educational / Interpretive Services

Orientation and interpretation of sites along the visitor core routes would be provided by the driver and audio/electronic information systems. These systems could use pre-recorded announcements on a bus’s public address system, personal headsets, or electronic screens. Depending on cost and available technology, interpretive delivery devices/tools could be purchased or rented by park visitors from park partners or at other visitor destination sales points.

Staffing

Approximately 69 full-time employees, including transit drivers, vehicle mechanics, maintenance personnel, and general administrative staff would be required for the visitor core transportation service.

Arlington National Cemetery

Alternative 4 would continue to provide shuttle bus sightseeing tours with recorded narration within Arlington National Cemetery, with service extended to the U.S. Marine Corps War Memorial. The route, fares and ticketing, operating plans, educational / interpretive services, and staffing would be the same as described under Alternative 2.

Supplemental Transportation Services

Introductory Tour

An introductory tour for Washington, D.C., would be offered to help visitors understand the area's cultural and educational opportunities. This tour would not provide any hop-on / -off access, but it would orient visitors to the visitor core and surrounding area for subsequent sightseeing activities during their stay. The tour would last approximately 2.5 hours and would be scheduled based on seasonal, weekly, and daily demand. Based on input during the project scoping process, a representative concept was developed for an introductory tour service, as described below:

- ***Fares and Ticketing*** — The ticket price for the introductory tour would be based on anticipated ridership levels and estimated expenses. Actual fares would be established during the implementation phase of the project and would be based on a final service delivery plan.

Tickets could be obtained at staffed ticket outlet locations, such as the Arlington National Cemetery visitor center, Union Station, the Washington Monument ticket kiosk, automatic ticket vending machines along the visitor core routes,

and advance purchase by phone or on the Internet.

- ***Operating Plans*** — It was assumed that four daily trips would be scheduled in the peak season (mid-April through mid-September) and two daily trips in the off-season.
- ***Educational / Interpretive Services*** — An individual other than the driver would provide narration and interpretation of sites along the tour route by means of the on-board public address system. Narrative content would be coordinated with NPS interpretive staff.

Excursion Tours

Excursion tours would be provided to other cultural and historic sites outside the visitor core area (Mount Vernon, Frederick Douglass National Historic Site), as described under Alternative 1. The number and type of excursion tours to other cultural and visitor sites outside the visitor core area could be expanded to include the Chesapeake & Ohio Canal National Historical Park, George Washington Memorial Parkway, Anacostia Park, and Rock Creek Park.

ACCESS TO TOP DESTINATIONS

The proposed visitor core routes would serve 43 of the top destinations in the metropolitan area, with the potential to serve two additional sites on optional route segments. This would be 15 to 17 more destinations than under Alternative 1 (a 54% to 61% increase).

Two-way service would be provided to all of the following top destinations:

Washington Monument
Lincoln Memorial
National Air and Space Museum
Vietnam Veterans Memorial
National Museum of American History
National Museum of Natural History
U.S. Capitol
White House Visitor Center
Arlington National Cemetery

Jefferson Memorial Union Station

One-way service would be provided to the following top destinations:

- World War II Memorial (access directly on Home Front Drive, the same as Alternative 2)
- U.S. Marine Corps War Memorial (access by way of the Arlington National Cemetery service, the same as Alternatives 2 and 3)

RIDERSHIP

Table 14 presents transit ridership estimates for the visitor core and Arlington National Cemetery.

Table 14. Transit Ridership Estimates — Alternative 4

Year	Visitor Core	Arlington National Cemetery
2015	587,000	998,000
2025	641,000	1,088,000

NOTE: The factors used for ridership projections are described on page 25.

TRANSIT VEHICLES

The vehicles used for the visitor core, Arlington National Cemetery, and excursion tour services would be the same as those described under “Planning Considerations and Assumptions.” Numbers of vehicles are shown in Table 15.

Table 15. Number of Transit Vehicles Required — Alternative 4

	Visitor Core	Arlington National Cemetery*	Excursion Tours**	Introductory Tours
Peak Service	29	9	4	4
Spare Vehicles	7	3	1	1
Total	36	12	5	5

* Same as Alternative 2.

** Same as Alternative 1.

For the introductory tour, a small transit bus was selected as the most suitable vehicle type. This vehicle type would be consistent with current vehicle configurations for special excursion services, offer good maneuverability in different settings, provide comfortable seating, and have the potential to use clean fuels.

An optional vehicle type for introductory tours could be a double-decker bus, such as the tour buses used by Battlefield Bus Tours to provide seasonal service in Gettysburg National Military Park. This vehicle type can increase sightseeing opportunities (some models offer open decks on the top level), resulting in lower per-passenger operating costs. However, the relatively small market for double-decker buses results in higher per vehicle capital and maintenance costs. Overhead clearance requirements could be an issue on desired routes near the National Mall and to or from the current maintenance facility because double-decker buses range from 13 to 15 feet high. Some bridges in East Potomac Park have a maximum clearance of 12 feet, preventing the use of double-decker buses in this area.

Vehicle requirements for the introductory tours would depend on the actual market demand and the passenger capacity of the vehicle chosen.

FACILITIES

Transit Stops

A total of 71 transit stops would be developed for passenger access. As described under “Planning Considerations and Assumptions,” it was assumed that general costs would be applied to three types of transit stops, and certain improvements (bus pads and curb ramps) would be made to 25% of total stops. In addition, ticket vending machines for passenger fares would be installed at a third of the stops.

Maintenance / Storage Facility

Similar to the other alternatives, it is assumed that the current maintenance / storage facility would serve a comparable function under Alternative 4. However, if the facility was determined to be inadequate or incompatible with NPS land uses, site improvements or new offsite facilities could be required. Estimated site requirements for a new bus maintenance / storage facility are shown in Table 16. Any new facilities would be the responsibility of the operator and would need to be provided off site. The actual requirements would be determined by the operator and addressed in response to a public solicitation process.

Table 16. Maintenance / Storage Facility Site Requirements — Alternative 4

Transportation Service	Estimated Site Requirements	
	Low Range	High Range
Visitor Core, Introductory Tour, and Excursion Tours	4.3 acres	5.1 acres
Arlington National Cemetery	3.7 acres	3.7 acres
All Services Combined in One Facility	6.0 acres	6.9 acres

NOTE: Key factors related to maintenance/storage facility requirements are presented on page 28.

COSTS

Estimated capital costs and annual operation and maintenance costs for Alternative 4 are shown in Table 17.

MULTIMODAL ACCESS (SEGWAY® HT, SCOOTER, AND BICYCLE)

In addition to currently permitted uses on park multi-use trails, recreational uses of

Segway® HTs and electric scooters would be allowed on all multi-use trails. With the exception of any existing concession services (i.e., individual rentals or tours), any new commercial services for personal transportation vehicles would be provided by private operators off federal park lands.

Proposed Policies

The following policies would apply to all use of personal transportation vehicles within the National Mall & Memorial Parks. All operators would be required to

- wear helmets at all times
- use a pedestrian warning device (bell) affixed to the transportation vehicle
- secure vehicles to a bicycle rack when not in use; never leave vehicles unattended and unsecured
- yield the right-of-way to pedestrians
- obey all applicable traffic signals and traffic signs

Recreational Access

Segway® HTs and Electric Scooters

Segway® HTs and electric scooters would be allowed for all uses on all multi-use trails within the National Mall & Memorial Parks. No access would be permitted within President's Park, including Lafayette Park. All multimodal personal transportation vehicles (including bicycles) would share NPS trails with pedestrians in a wide range of settings and over a wide range of surfaces. Speed limits and other user requirements would apply to all modes. Funding for related multimodal improve-

Table 17. Projected Capital and Annual Operating Costs — Alternative 4 (in millions)

	Visitor Core	Arlington National Cemetery	Introductory Tour	Excursion Tours	Total
Vehicle Fleet	\$26.14	\$7.33	\$2.04	\$2.04	\$37.53
Transit Stops	\$5.27	N/A	N/A	N/A	\$5.27
Total Capital Costs	\$31.40	\$7.33	\$2.04	\$2.04	\$42.80
Annual Operating Costs	\$6.00	\$1.75	\$0.26	\$0.89	\$8.90

NOTE: Assumptions for costs are described on page 29.

ments would be provided through the general park maintenance budget.

All recreational operators of Segway® HTs and electric scooters would have to adhere to the following new use regulations:

- Always use designated pedestrian crosswalks and specifically obey all pedestrian crossing signals.
- Adhere to a maximum speed limit of 8 mph.
- Be a minimum of 16 years old.

Bicycles

Bicycles would continue to be permitted on any designated multi-use trail within the National Mall & Memorial Parks. Use regulations as described above under “Proposed Policies” would also apply to all bicycle riders in the park. As previously stated in “Planning

Considerations and Assumptions,” existing bicycle racks would be upgraded, and additional racks would be installed, with a particular focus on the East Coast Greenway route.

TRAVEL DEMAND MANAGEMENT

As previously mentioned, approximately 400 public parking spaces on Madison Drive NW and Jefferson Drive SW would be eliminated (less than 1.8% of locally available private parking spaces). These roadways would be used for transit and vehicle deliveries, as well as handicapped parking.

No other travel demand management changes would be made beyond those discussed in “Planning Considerations and Assumptions.”

ALTERNATIVE 5: DOWNTOWN CIRCULATOR

Alternative 5 would provide frequent, low-cost bus transit service to meet the transportation needs of visitors, local residents, and workers in central Washington, D.C. This alternative is considered in accordance with the previously developed *District of Columbia Downtown Circulator Implementation Plan* (NCPC/ DDOT/DBID/WMATA 2003).

- Two interconnected routes would be provided in the visitor core (the phase two routes of the Downtown Circulator). Some refinement of this concept would be required to fully meet NPS goals. It is assumed that the two phase one routes (K Street NW and 7th Street NW/SW) would continue under Alternative 5. No Arlington National Cemetery service would be provided. Access would be provided to 34 of the top destinations in the Washington metropolitan area.
- No orientation or interpretation would be provided.
- No changes to multimodal access or any additional travel demand management actions are proposed.

TRANSPORTATION SERVICE

Visitor Core

Service in the visitor core under Alternative 5 would consist of two interconnected routes. The geographic limits are 23rd Street NW/SW on the west, Union Station and 1st Avenue NE on the east, I Street NW on the north, and East Basin Drive SW and Maine Avenue SW on the south.

The following two visitor core routes are proposed (the “Alternative 5: Visitor Core Downtown Circulator” map shows the two proposed routes, plus length, travel times, and stop information):

- **Monuments Route** — The Monuments Route would provide one-way loop ser-

vice along West Potomac Park, between the Lincoln Memorial and the Smithsonian Metrorail Station and would cross the National Mall on 17th Street NW/SW. The route would primarily operate on Ohio Drive SW, Constitution Avenue NW, 17th Street NW/SW, and Independence Avenue SW.

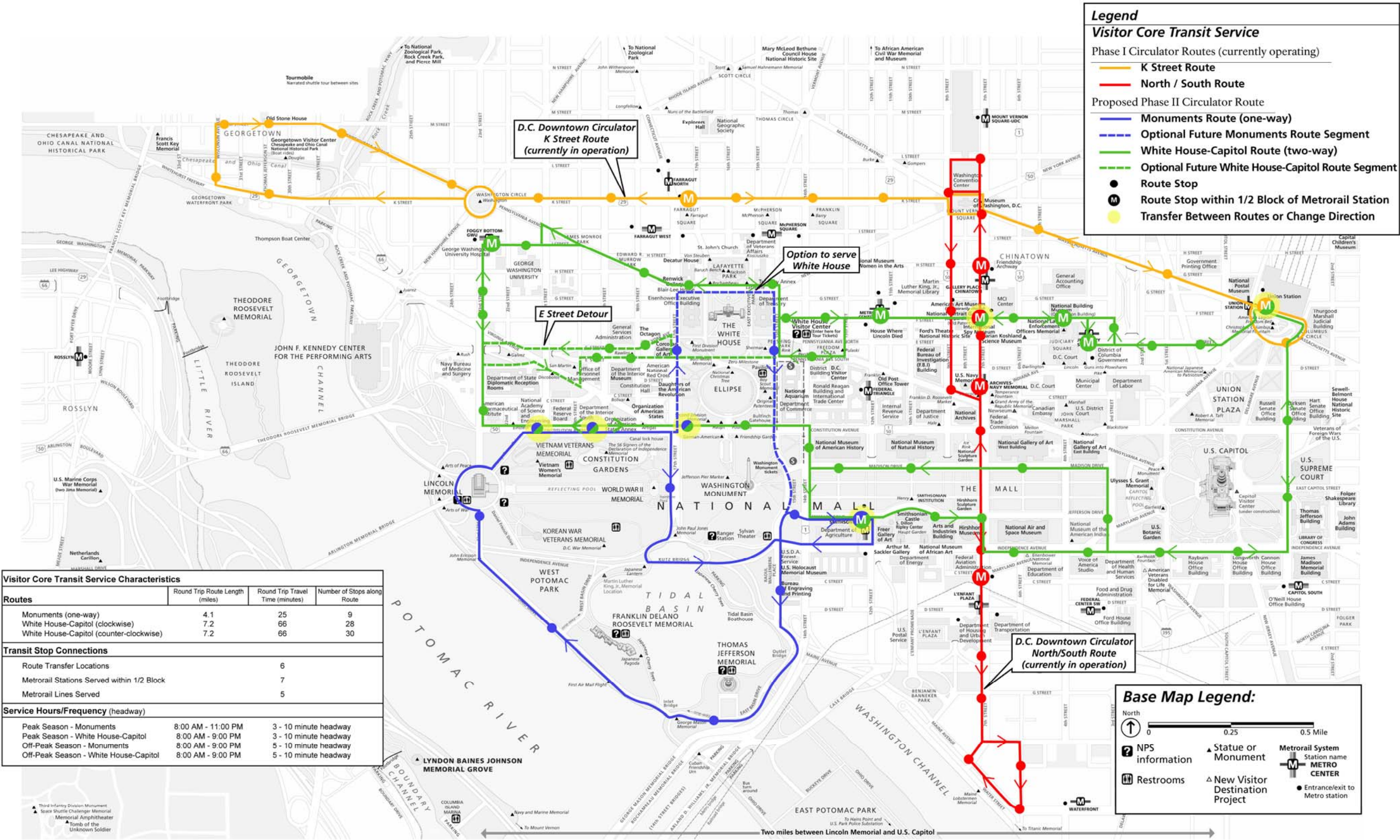
A future optional segment could include a northern loop around the White House, with stops on the east and west sides of the White House near E Street NW. This extension would require a change in current access restrictions since Pennsylvania Avenue NW north of the White House is now closed to general traffic. This optional future extension would be approximately 0.6 mile longer; related fleet and operating costs would increase by about 4%. Whether to provide this extension would depend on access provisions, market demand, cost effectiveness, and financial feasibility.

- **White House–Capitol Route** — The White House–Capitol Route would provide two-way loop service between Union Station and Foggy Bottom, operating along the National Mall by way of Madison Drive NW, Constitution Avenue NW, Jefferson Drive SW, and Independence Avenue SW. This route concept would require a change in current access restrictions since Pennsylvania Avenue NW north of the White House is closed to general traffic.

A future optional segment could include service between 15th and 21st streets NW, traveling primarily on E Street NW and providing four stops. This option would also require a change in access restrictions on E Street NW between 15th and 17th streets NW where general traffic is temporarily restricted. In addition, D Street NW between 21st and 23rd streets NW has also been temporarily closed to

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National Mall & Memorial Parks

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Source: District of Columbia Downtown Circulator Implementation Plan, July 2003

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general traffic. The future optional route change would add less than 0.5 mile to the route, and changes in operating costs and fleet size would be negligible. This future route change would be based on access provisions, market demand, cost-effectiveness, and financial feasibility.

Transportation Infrastructure

Transportation services would continue to operate in mixed-flow traffic entirely on public rights-of-way, including existing roads. This alternative would require changes to roadway access on Pennsylvania Avenue NW and E Street NW between 15th and 17th streets NW.

Fares and Ticketing

A daily fare would be established during the implementation phase and would be based on estimated ridership, expenses, funding sources, and a final service delivery plan. The fare payment system for Alternative 5 would be consistent with the phase one operation of the Downtown Circulator and would offer various passes to visitors. Payment options would include cash when boarding the bus, Metro SmarTrip cards (debit from stored value), transfers from Metrobus and Metrorail (with an incremental fee), tickets from fare-vending machines or multi-space parking meters, and day passes. Fares would typically be on a per trip basis, except when passengers were using a full-day pass.

Public Transit Connections

A total of seven Metrorail stations would be served by the visitor core transit routes or would be within a half block. Each route would provide at least one stop at a Metrorail station. Metrobus routes could also be accessed at stops on Constitution Avenue NW, Independence Avenue SW, 7th Street NW/ SW, 17th Street NW/SW, and K Street NW, as well as at Union Station.

The White House–Capitol Route would cross the 7th Street NW/SW route and also the K Street NW route, where transfers could be made. Transfers could also be made to the K Street route at Union Station.

Operating Plans

The seasonal and daily transit operating plan assumptions for Alternative 5 are based on the *Downtown Circulator Implementation Plan*. Daily operating times and service frequencies would differ from the other alternatives.

The peak visitor season would run from April 1 through August 31 and the off-peak season during the rest of the year. Service would be provided seven days a week. Specific seasonal operating assumptions for each route are described below.

- *Monuments Route* — During the peak season the Monuments Route would run from 8 a.m. to 11 p.m., with service every 3 to 10 minutes. High frequency service would be provided after 10 a.m.

During the off-peak season service would run from 8 a.m. to 9 p.m., with service every 5 to 10 minutes throughout the day. The most frequent service would be provided between 10 a.m. and 8 p.m.

- *White House–Capitol Route* — During both the peak and off-peak seasons, service would be provided from 8 a.m. to 9 p.m. In the peak season buses would run every 3 to 10 minutes throughout the day, and in the off-peak season, every 5 to 10 minutes. The most frequent service would be between 10 a.m. and 7 p.m.

Educational / Interpretive Services

Under Alternative 5 no interpretive services would be provided.

Staffing

Approximately 140 full-time employees, including drivers, vehicle mechanics, maintenance personnel, and general administrative

staff would be required for the NPS visitor core service.

Arlington National Cemetery

Under Alternative 5 Arlington National Cemetery transportation service would not be provided in conjunction with the visitor core service. This would not preclude the independent operation of transportation service in Arlington National Cemetery.

Supplemental Transportation Services

No supplemental services would be provided in conjunction with visitor core service under Alternative 5.

ACCESS TO TOP DESTINATIONS

The proposed visitor core service would serve 34 of the top destinations in the metropolitan area, 6 more destinations than Alternative 1 (a 21% increase).

Two-way service would be provided to the following top destinations:

- Washington Monument
- Vietnam Veterans Memorial
- National Museum of American History
- U.S. Capitol
- Union Station

One-way service would be provided to the following destinations:

- Lincoln Memorial
- National Air and Space Museum
- National Museum of Natural History
- White House Visitor Center
- World War II Memorial
- Jefferson Memorial

No Arlington National Cemetery service or access to the U.S. Marine Corps War Memorial would be provided.

RIDERSHIP

Table 18 presents transit ridership estimates for visitor core services. As previously discussed, visitor core ridership estimates for Alternative 5 were obtained directly from the *Downtown Circulator Implementation Plan* and represent the visitor circulation and visitor access/egress travel markets only. The overall ridership estimates assume that the transportation service would appeal to a much broader market than the existing concessioner service.

Table 18. Transit Ridership Estimates — Alternative 5

Year	Visitor Core Service
2015	2,900,000
2025	3,200,000

NOTE: The factors used for ridership projections are described on page 25.

TRANSIT VEHICLES

Vehicles as described under “Planning Considerations and Assumptions” would be used, and characteristics would be similar to the vehicles being used for the phase one Circulator operations.

Vehicles would only be needed for service in the visitor core. Numbers of vehicles required for peak operation are shown in Table 19.

Table 19. Number of Transit Vehicles Required — Alternative 5

	Visitor Core
Peak Service	52
Spare Vehicles	11
Total	63

FACILITIES

Transit Stops

A total of 71 transit stops would be used for passenger access. As described under “Planning Considerations and Assumptions,” general costs would be applied to three types of stops, and certain improvements (bus pads and curb

ramps) would be made to 25% of the stops. In addition, ticket vending machines for passenger fares would be installed at a third of the stops.

The *Downtown Circulator Implementation Plan* indicates that both existing and new stops would be utilized. New stops would require shelters and include advertising where allowed (but not on the National Mall). The plan indicates that bus stops and amenities could be installed and maintained through a contract with a bus shelter advertiser. However, to be consistent with the other alternatives considered in this environmental assessment, a consistent cost methodology for transit stop improvements was applied to Alternative 5, and additional costs for amenities were included. Financing options for these improvements could be considered during the implementation phase.

Maintenance / Storage Facility

Similar to the other alternatives, it is assumed that the current maintenance / storage facility would serve a comparable function under Alternative 5. However, if the facility was determined to be inadequate or incompatible with NPS land uses, site improvements or new offsite facilities could be required. Estimated site requirements for a new bus maintenance / storage facility are shown in Table 20. Any new facilities would be the responsibility of the operator and would need to be provided off site. The actual requirements would be determined by the operator and addressed in response to a public solicitation process.

Table 20. Maintenance / Storage Facility Site Requirements — Alternative 5

Transportation Service	Estimated Site Requirements	
	Low Range	High Range
Visitor Core	5.1 acres	6.4 acres

NOTE: Key factors related to maintenance/storage facility requirements are presented on page 28.

COSTS

Estimated capital costs and annual operation and maintenance costs for Alternative 5 are shown in Table 21. These costs are based on transit operating statistics defined in the *Downtown Circulator Implementation Plan*, and unit costs are consistent with the other build alternatives in this environmental assessment.

Table 21. Projected Capital and Annual Operating Costs — Alternative 5 (in millions)

	Visitor Core
Vehicle Fleet	\$45.74
Transit Stops	\$5.70
Total Capital Costs	\$51.42
Annual Operating Costs	\$11.84

NOTE: Assumptions for costs are described on page 29.

MULTIMODAL ACCESS (SEGWAY® HT, SCOOTER, AND BICYCLE)

No changes for multimodal access would be made beyond those identified in “Planning Considerations and Assumptions.”

TRAVEL DEMAND MANAGEMENT

No improvements to travel demand management would be made beyond those discussed in “Planning Considerations and Assumptions.”

ENVIRONMENTALLY PREFERRED ALTERNATIVE

In accordance with the National Environmental Policy Act (NEPA) and *Director's Order #12*, the National Park Service is required to identify the environmentally preferred alternative (NPS 2001). The Council on Environmental Quality defines the environmentally preferred alternative as "the alternative that will promote the national environmental policy as expressed in the NEPA's Section 101" (CEQ 1981). Section 101(b) of the act states that it is the continuing responsibility of federal agencies to

1. fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
3. attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
4. preserve important historic, cultural and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;
5. achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
6. enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

How each alternative meets the above goals is discussed below and detailed in Table 22.

Alternative 1 would not fully meet all the goals of the National Environmental Policy Act. Specifically, it would not address the demand for safe Segway® HT and electric scooter access, thus not assuring the public of a safe

environment (goal 2). Although Alternative 1 would improve opportunities for bicyclists, it would only partially promote the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable or unintended consequences because the present market for visitor transportation service is relatively small and would not provide a full array of educational / interpretive opportunities (goal 3) and would not support diversity and variety of individual choice (goal 4). Alternative 1 would partially promote a wide sharing of life's amenities because the visitor transportation service would provide only limited access to visitor destinations, park resources, and Metrorail connections (goal 5).

Alternative 2 is the environmentally preferred alternative because it would best meet goals 2, 3, and 6, while also meeting goals 1, 4, and 5. The promotion of alternative transportation, the use of clean fuels, and the extension of service to additional destinations would help fulfill the National Park Service's responsibility as a trustee of the environment (goal 1). Providing a safer and more accessible visitor transportation service and regulating Segway® HTs and electric scooters on designated routes would assure the public of a safer environment (goal 2). Alternative 2 would attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable consequences (goal 3) because of appealing to a broader visitor market and serving non-NPS sites; providing a choice of educational / interpretive opportunities, providing improved opportunities for bicyclists, and providing new mode choices. The visitor transportation service would provide a choice of educational / interpretive programs and would serve new sites in Arlington National Cemetery as well as more downtown National Mall & Memorial Parks sites, thus maintaining an environment that supports diversity and variety of individual choice (goal

4). By providing more access to visitor destinations, including Arlington National Cemetery, along with visitor markets and Metrorail stations, Alternative 2 would promote a wide sharing of life's amenities (goal 5). Alternative 2 would also enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources because transit vehicles would use clean fuels and metered parking could encourage greater transit use (goal 6).

Alternatives 3 and 5 would meet some of the same goals as Alternative 2, but neither would fully assure the public of a safe environment because safety issues for Segway® HT and electric scooter access would not be addressed (goal 2). Alternative 4 would also meet most of the same goals as Alternative 2, but allowing the recreational use of personal transportation vehicles on all park multi-use trails could create more safety conflicts with pedestrians. Because the visitor transportation service would appeal to a smaller market,

Alternative 3 would only partially attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable consequences (goal 3). In addition, Alternative 3 would only partially maintain an environment which supports diversity and variety of individual choice because a choice of education would not be provided (goal 4).

Alternative 5 would only partially attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable consequences (goal 3) because Arlington National Cemetery and supplemental visitor transportation services would not be provided. Alternative 5 would not maintain an environment which supports diversity and variety of individual choice (goal 4) because there would be no educational component with the visitor transportation service, no Arlington National Cemetery service, and no access to the U.S. Marine Corps War Memorial.

Table 22. Comparison of How the Alternatives Meet the National Environmental Policy Act Goals

NEPA Section 101(b) Goals	Alternative 1: No Action	Alternative 2: Preferred Alternative	Alternative 3	Alternative 4	Alternative 5: Downtown Circulator
<i>1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.</i>	Meets goal: Alternative transportation promoted to access NPS sites.	Same as Alternative 1.	Same as Alternative 1.	Same as Alternative 1.	Same as Alternative 1.
<i>2. Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings.</i>	Meets goal: Safe, accessible visitor service. Does not meet goal: Demand for safe Segway® HT and electric scooter access not addressed.	Meets goal: Safe, accessible visitor service. Segway® HT and electric scooter routes designated and regulated to provide safer environment.	Same as Alternative 1.	Meets goal: Safe, accessible visitor service. No private vehicles on National Mall roads. Partially meets goal: Segway® HT and electric scooter use regulated on all multi-use trails; but potentially more pedestrian safety conflicts.	Meets goal: Safe, accessible visitor service. Does not meet goal: Demand for safe Segway® HT and electric scooter access not addressed.
<i>3. Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences.</i>	Meets goal: Bicycle racks on transit vehicles; additional bike racks on the National Mall. Partially meets goal: Smaller market appeal; only in-depth interpretive opportunities, with limited choice of alternative programs.	Meets goal: Broader visitor market appeal and service to non-NPS sites. Choice of interpretive opportunities. Bicycle racks on transit vehicles; additional bike racks on the National Mall. Recreational use of personal transportation vehicles allowed on designated routes.	Meets goal: Bicycle racks on transit vehicles; additional bike racks on the National Mall. Partially meets goal: Smaller market appeal and service to non-NPS sites; only in-depth interpretive opportunities, with limited choice of alternative programs.	Meets goal: Broader visitor market appeal and service to non-NPS sites. Choice of interpretive opportunities. Bicycle racks on transit vehicles; additional bike racks on the National Mall. More supplemental transit services. Recreational use of personal transportation vehicles allowed.	Meets goal: Visitor and local market appeal. Bicycle racks on transit vehicles; additional bike racks on the National Mall. Does not meet goal: No visitor service to Arlington National Cemetery. No supplemental visitor transit services or interpretive opportunities.
<i>4. Preserve important historic, cultural and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice.</i>	Partially meets goal: Only in-depth interpretive opportunities, with limited choice of alternative programs.	Meets goal: Choice of interpretive opportunities. Access to new sites near Arlington National Cemetery and downtown NPS sites. Service extended to the U.S. Marine Corps War Memorial.	Meets goal: Access to new sites near Arlington National Cemetery and downtown NPS sites. Partially meets goal: Only In-depth interpretive opportunities, with limited choice of alternative programs.	Same as Alternative 2.	Does not meet goal: No interpretive opportunities. No service to Arlington National Cemetery or the U.S. Marine Corps War Memorial.
<i>5. Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities.</i>	Partially meets goal: A total of 20 stops on the visitor core route. One direct Metrorail connection.	Meets goal: A total of 61 stops on visitor core routes, with access to more destinations and markets. More convenience, with 7 direct Metrorail connections.	Meets goal: Similar to Alternative 2 except a total of 46 stops on visitor core routes and 9 direct Metrorail connections.	Meets goal: Similar to Alternative 2 except a total of 91 stops on visitor core routes, and 12 direct Metrorail connections.	Meets goal: Similar to Alternative 2 except a total of 67 stops on visitor core routes, and 7 direct Metrorail connections.
<i>6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.</i>	Meets goal: Potential for transit vehicles to use clean fuels.	Meets goal: Potential for transit vehicles to use clean fuels. Encouraged transit use due to metered parking.	Same as Alternative 1.	Same as Alternative 1.	Same as Alternative 1.

ALTERNATIVES CONSIDERED BUT DISMISSED AND POTENTIAL TRANSPORTATION SERVICES

The following alternatives or elements of one or more alternatives were identified in Newsletter 2, but were later dismissed. As a result, these alternatives were not carried forward for evaluation in this environmental assessment. This section briefly explains each alternative action and the reason for its elimination.

FORMER ALTERNATIVES

Alternatives B and BB

Alternative B would provide frequent, low-cost bus transit to meet the transportation needs of visitors and local residents, with limited orientation and stop announcements. Three interconnected, one-way routes would be provided in the visitor core, with a one-way route serving Arlington National Cemetery. It was determined that this set of routes was similar to the present Alternative 3, which is evaluated in this environmental assessment.

Alternative BB was the same as Alternative B except a comprehensive, two-way route would be offered in the visitor core, with an internal, one-way Mall loop, and a one-way route for Arlington National Cemetery. During the Choosing by Advantages process, this alternative became the basis for Alternative 2, the preferred alternative.

Alternative F

Under former Alternative F the National Park Service would authorize visitor transit (sightseeing services) by providing commercial business permits to for-profit operators who would offer transportation and visitor educational / interpretive services in response to market conditions rather than provide service through a single provider. This alternative was dismissed for the following reasons.

- Allowing an unlimited variety of commercial operators would result in an

inconsistent quality of service and interpretive content. While training for operators could be provided, it would be more difficult to control the quality of interpretive messages and ensure that visitors received a uniform level of accurate information. Visitors might not be able to easily distinguish services, and consistent information about service options or stops might not be readily available. This could result in less convenience and more confusion for visitors. Price structures might also vary widely, depending on the type and quality of service. Therefore, this alternative would not meet the stated project goals for convenience and coordination.

- In an environment with safety and security concerns, having many service providers could present additional security concerns, as well as complicate communications, especially in times of heightened security.
- Alternative F would add pressure for more bus stops and staging areas, likely resulting in adverse impacts to the cultural and historical character from a proliferation of stops, signs, and long vehicle queues on streets within the National Mall & Memorial Parks. Therefore, this alternative would not meet the project purpose of protecting park resources.

POTENTIAL TRANSPORTATION SERVICES

As part of the alternative development process, several subarea transit options were identified that could supplement the overall visitor transportation alternatives. However, it was determined that these options were not currently feasible due to access restrictions,

and further market analysis was needed to identify shuttle services to outlying park sites or services that could be implemented by entities other than the National Park Service. These subarea transit options are described below for future consideration.

President's Park and the Ellipse

Optional future transportation service could include circulation around the Ellipse north of Constitution Avenue NW. A stop could be provided at an existing pavilion in the north-west quadrant of the Ellipse. This route would add approximately 0.7 mile to the overall route, plus potential staff increases. If included as part of the preferred alternative, operating costs could increase by 3% to 5%. This concept could only be provided if there was a change in both the current parking configurations and traffic access restrictions for this area.

White House Courtesy Shuttle

This service could operate north of the White House in a U-pattern along Pennsylvania Avenue NW, Jackson Place NW, and Madison Place NW. Current roadway restrictions preclude through-traffic or continuous transit service through these areas and limit access to White House viewpoints on Pennsylvania Avenue and E Street to pedestrians only. An internal courtesy shuttle could provide White House views and convenient transportation for visitors who either did not desire or were unable to walk the two-block distance.

Shuttle service could operate completely within the security perimeter of the designated roads, and visitors could be required to access this route along H Street NW near the designated Red Route stop location on Vermont Avenue NW (near the McPherson Square Metrorail Station). The overall route length would be approximately 0.35 mile, and round-trip travel time would be

approximately 3–5 minutes. Electric carts could be considered for lower demand service in this self-contained area.

West Downtown Shuttle

A west downtown shuttle could supplement the Kennedy Center shuttle and provide connections to the Blue Route under Alternative 2 and the Downtown Circulator route on K Street NW. The route could circulate between 23rd and 18th streets NW/SW, and between Constitution Avenue and K Street NW. The route could provide a closer Metrorail connection to the west end of the National Mall. Connections to the Foggy Bottom–George Washington University and Farragut West Metrorail stations could be provided. This route could be operated by others and provide enhanced access to federal office buildings, hotels, restaurants, and shopping locations in west downtown.

Connections to National Park Sites

Transportation service to outlying recreational and cultural destinations (e.g., Rock Creek Park, Chesapeake & Ohio Canal National Historical Park, Anacostia Park, and Great Falls Park) could be offered with weekend, weekly, or monthly schedules if warranted by demand. This service concept would remain flexible, and destinations could be changed based on market demand.

This environmental assessment assumes potential transportation services would be provided as a separate project by others. All resource impact analysis associated with these optional services would have to be addressed under separate environmental compliance documents.

COMPARATIVE SUMMARY OF ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

Table 23. Summary of Alternatives

	Alternative 1: No-Action	Alternative 2: Preferred Alternative	Alternative 3	Alternative 4	Alternative 5: Downtown Circulator
Overall Summary					
General Description	Continuation of current bus transportation service routes, focused on guided sightseeing.	Integrated transit and multimodal transportation system to meet needs of a broad visitor market. Expanded and easy-to-use bus transit with orientation plus choice of interpretive opportunities. Designated routes for Segway® HTs and electric scooters. Some free parking converted to parking meters.	New ride-and-learn visitor bus transportation service, focused on providing a sightseeing and interpretive experience.	Coordinated system of easy-to-use bus transit opportunities. Maximized views, frequent transportation between visitor sites; some dedicated roads for transit. Shared use of multi-use trails by pedestrians and personal transportation (bicycles, Segway® HTs, and electric scooters).	Frequent public bus transit to meet transportation needs of visitors and local residents in central Washington, D.C. No interpretive opportunities. Supplements two routes currently in operation.
Transportation Services	Visitor core Arlington National Cemetery Excursion tours Special event services not precluded	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1 plus introductory tour	Visitor core Special event services not precluded
Metrorail Stations within ½ Block	1	7	9	12	7
Multimodal Access (Segway® HTs, Electric Scooters, Bicycles)	No change	Recreational use of Segway® HTs and electric scooters allowed on designated routes. No change for other modes	No change	Recreational use of Segway® HTs and electric scooters allowed on all multi-use trails. No change for other modes	No change
Other Transportation or Access Changes	No change	Paid metered parking to support local travel demand management objectives	No change	Madison Dr. NW and Jefferson Dr. SW closed to private automobile traffic/parking. Dedicated lanes for two-way transit	No change
Access to Top Destinations (53 total)	28	39	42	43 (45 with optional route segments)	34
Fleet Vehicle Requirements	25	47	41	58	63
Total Projected Costs					
• Capital Cost	\$16.13 million	\$35.50 million	\$29.83 million	\$42.80 million	\$51.42 million
• Annual Operating Cost	\$4.59 million	\$7.57 million	\$6.50 million	\$8.90 million	\$11.84 million
Visitor Core Transportation Service					
Routes	Single one-way route	Two interconnected routes (a two-way route plus a one-way route)	Three interconnected one-way routes	Three interconnected two-way routes	Two interconnected routes (a two-way route plus a one-way route)
Total Route Length	11.2 miles	29.2 miles	20.2 miles	33.2 miles	18.5 miles

	Alternative 1: No-Action	Alternative 2: Preferred Alternative	Alternative 3	Alternative 4	Alternative 5: Downtown Circulator
Operating Characteristics					
Peak Season					
• Service Frequency	15 minutes	5–10 minutes	10 minutes	10 minutes	3–10 minutes
• Hours	9 a.m. to 6:30 p.m.	9 a.m. to 6:30 p.m.	9 a.m. to 6:30 p.m.	9 a.m. to 6:30 p.m.	8 a.m. to 9/11 p.m.
Off-Peak Season					
• Service Frequency	20–25 minutes	10–15 minutes	10–15 minutes	10–15 minutes	5–10 minutes
• Hours	9:30 a.m. to 4:30 p.m.	9:30 a.m. to 4:30 p.m.	9:30 a.m. to 4:30 p.m.	9:30 a.m. to 4:30 p.m.	8 a.m. to 9 p.m.
Ticketing System	Staffed ticket kiosks, on-board, Internet	Staffed ticket kiosks, on-route vending machines, joint ticketing with Metro, park partners (e.g., bookstores), Internet, single / multi-day passes	Staffed ticket kiosks, on-route vending machines, Internet, single / multi-day passes	Same as Alternative 2	On-route vending machines, joint ticketing with Metro, tourist-oriented outlets (e.g., hotels, museums, etc.), pay-per-ride, day passes
Educational / Interpretive Approach	Orientation and narration provided by separate guide	Orientation and narration provided by driver and audio / electronic systems	Same as Alternative 2	Same as Alternative 2	No orientation or narration (potential for audio/electronic information)
Developed Transit Stops	20	47	35	71	71
Ridership Estimates					
• 2015	397,000	563,000	539,000	587,000	2,900,000
• 2025	433,000	614,000	588,000	641,000	3,200,000
Fleet Vehicle Requirements	10	30	24	36	63
Total Projected Costs					
• Capital Cost	\$7.98 million	\$26.14 million	\$20.47 million	\$31.40 million	\$51.42 million
• Annual Operating Cost	\$1.94 million	\$4.93 million	\$3.86 million	\$6.00 million	\$11.84 million
Arlington National Cemetery					
Route	Existing route in cemetery	Extended route to U.S. Marine Corps War Memorial	Same as Alternative 2	Same as Alternative 2	No service (not precluded from independent operation)
Route Length	Cemetery — 3.0 miles	Cemetery — 3.0 miles Memorial — 1.7 miles	Same as Alternative 2	Same as Alternative 2	Not applicable
Operating Characteristics					
Peak Season					
• Service Frequency	5–10 minutes	5–10 minutes	5–10 minutes	5–10 minutes	Not applicable
• Hours	8:30 a.m. to 6:30 p.m.	8:30 a.m. to 6:30 p.m.	8:30 a.m. to 6:30 p.m.	8:30 a.m. to 6:30 p.m.	Not applicable
Off-Peak Season					
• Service Frequency	15 minutes	15 minutes	15 minutes	15 minutes	Not applicable
• Hours	8:30 a.m. to 4:30 p.m.	8:30 a.m. to 4:30 p.m.	8:30 a.m. to 4:30 p.m.	8:30 a.m. to 4:30 p.m.	Not applicable
Ticketing System	Cemetery visitor center, visitor core ticket locations	Cemetery visitor center, Union Station, park partners, advance ticketing	Same as Alternative 2	Same as Alternative 2	Not applicable
Educational / Interpretive Approach	Narration provided by separate guide	Recorded narration, supplemented by driver	Same as Alternative 2	Same as Alternative 2	Not applicable
Ridership Estimates					
• 2015	883,000	998,000	998,000	998,000	Not applicable
• 2025	963,000	1,088,000	1,088,000	1,088,000	Not applicable
Fleet Vehicle Requirements	10	12	12	12	Not applicable
Total Projected Costs					
• Capital Cost	\$5.11 million	\$7.33 million	\$7.33 million	\$7.33 million	Not applicable
• Annual Operating Cost	\$1.76 million	\$1.75 million	\$1.75 million	\$1.75 million	Not applicable

	Alternative 1: No-Action	Alternative 2: Preferred Alternative	Alternative 3	Alternative 4	Alternative 5: Downtown Circulator
Supplemental Transportation Service					
Type of Service	Excursion tours Special event services not precluded	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1 plus introductory tour	No additional service. Special event services not precluded
Operating Characteristics					
Excursion Tours					
• Peak Operations	3–5 destinations / day	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Not applicable
• Peak Hours	9 a.m. to 6:30 p.m.	9 a.m. to 6:30 p.m.	9 a.m. to 6:30 p.m.	9 a.m. to 6:30 p.m.	
Introductory Tour					
• Peak Operations	Not applicable	Not applicable	Not applicable	Four daily trips	Not applicable
• Peak Hours	Not applicable	Not applicable	Not applicable	2.5 hours per trip	Not applicable
Ticketing System	Cemetery visitor center, Union Station, Wash- ington Monument ticket kiosk	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Not applicable
Educational / Interpretive Approach	Narration provided by separate guide	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	Not applicable
Fleet Vehicle Requirements	5	5	5	10	Not applicable
Total Projected Costs					
• Capital Cost	\$2.04 million	\$2.04 million	\$2.04 million	\$4.08 million	Not applicable
• Annual Operat- ing Cost	\$0.89 million	\$0.89 million	\$0.89 million	\$1.15 million	Not applicable

Table 24. How Well the Alternatives Meet Project Objectives

Objective	Alternative 1: No-Action	Alternative 2: Preferred Alternative	Alternative 3	Alternative 4	Alternative 5: Downtown Circulator
▪ <i>An identifiable, high quality transportation system that meets NPS policy goals and fits within the historic context of our nation's capital.</i>	Meets objective: Vehicles easily identifiable and meet NPS policy goals for clean fuels and sustainable systems.	Meets objective: Vehicles easily identifiable and meet NPS policy goals for clean fuels and sustainable systems. All stop facilities designed to fit within historic context.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.
▪ <i>A convenient, sustainable transportation system that provides access to and among existing and future NPS sites and other visitor destinations in the nation's capital and that meets mobility needs and improves visitor enjoyment.</i>	Partially meets objective: Access to 28 top destinations, including NPS sites and Arlington National Cemetery. No convenient access to the World War II Memorial from Home Front Drive, the closest location; no access to the U.S. Marine Corps War Memorial. Moving between destinations limited by 15-minute service frequency and one-way figure-eight route with transfer at	Meets objective: Access to 39 top destinations, including NPS sites, the World War II Memorial (from Home Front Drive, the closest location), Arlington National Cemetery, the U.S. Marine Corps War Memorial, and the downtown area. More choice and greater convenience in moving between destinations with 10-minute service frequency and 2 two-way routes.	Partially meets objective: Access to 42 top destinations, including NPS sites, Arlington National Cemetery, the U.S. Marine Corps War Memorial, and the downtown area. More choice in moving between destinations with 10-minute frequency and three shorter one-way routes with transfer locations, with options to serve Mary McCloud Bethune Council House. Improved access for	Meets objective: Access to 43 (potentially 45) top destinations, including NPS sites, the World War II Memorial (from Home Front Drive, the closest location), Arlington National Cemetery, the U.S. Marine Corps War Memorial, and the downtown area. More choice in moving between destinations with 10-minute service frequency and a combination of 2 one-way and 1 two-way routes, with	Partially meets objective: Access to 34 top destinations, including NPS sites, but access to the World War II Memorial from a proposed stop on 17th Street not feasible. No service to Arlington National Cemetery. Service proposed within areas closed for security reasons. More choice in moving between destinations with 3–10 minute service frequency and 1 one-way route and 1

Objective	Alternative 1: No-Action	Alternative 2: Preferred Alternative	Alternative 3	Alternative 4	Alternative 5: Downtown Circulator
	Washington Monument. Improved access for people with disabilities. Does not meet objective: Recreational use of Segway® HTs and electric scooters on park lands not addressed.	Improved access for people with disabilities. Metered parking to encourage transit use. Recreational use of Segway® HTs and electric scooters regulated and routes designated to provide safer environment.	people with disabilities. Does not meet objective: Recreational use of Segway® HTs and electric scooters on park lands not addressed.	options to serve East Potomac Park. Improved access for people with disabilities. Recreational use of Segway® HTs and electric scooters regulated and allowed on all multi-use trails.	two-way route. Improved access for people with disabilities. Does not meet objective: Recreational use of Segway® HTs and electric scooters on park lands not addressed.
▪ Visitor orientation and educational interpretive services that promote awareness and understanding of the significance of our nation's capital and its memorials, landmarks, and rich cultural heritage.	Partially meets objective: No consistent educational / interpretive content. Interpretive opportunities not taken full advantage of; no educational choice provided.	Meets objective: Quality delivery of consistent educational / interpretive content ensured. Expanded educational services offering more choice for visitors.	Partially meets objective: Quality delivery of consistent educational content ensured. Interpretive opportunities not taken full advantage of; no educational choice provided.	Meets objective: Quality delivery of consistent educational / interpretive content ensured. Expanded educational services offering more choice for visitors.	Does not meet objective: Full advantage of interpretive opportunities not taken; no interpretive / educational service provided.
▪ A transportation system that supplements, supports, and is integrated with the existing urban transportation network and that maximizes direct and convenient connections to mass transit and other transportation systems and services.	Partially meets objective: Service to 1 Metrorail station with one directional stop. Access to Metrobus routes. No direct connection to public transit in Arlington. Bike racks provided on transit vehicles; additional bike racks on National Mall. Does not meet objective: No joint ticketing with public transit; park visitor transportation service not linked with public transit.	Meets objective: Service to 7 Metrorail stations; connections to 4 different stations on each route; park visitor transportation service linked with public transit. Access to Metrobus routes. Joint ticketing with public transit. Future connections to public transit in Arlington. Bike racks provided on transit vehicles; additional bike racks on National Mall.	Partially meets objective: Service to 9 Metrorail stations; connection to at least 1 station on each route; park visitor transportation service linked with public transit. Access to Metrobus routes. Future connections to public transit in Arlington. Bike racks provided on transit vehicles; additional bike racks on National Mall. Does not meet objective: No joint ticketing with public transit.	Meets objective: Service to 12 Metrorail stations; connection to at least 3 stations on each route; park visitor transportation service linked with public transit. Access to Metrobus routes. Joint ticketing with public transit. Future connections to public transit in Arlington. Bike racks provided on transit vehicles; additional bike racks on National Mall.	Partially meets objective: Service to 6 Metrorail stations; at least 1 station on each route; park visitor transportation service linked with public transit. Access to Metrobus routes. Joint ticketing with public transit. Bike racks provided on transit vehicles; additional bike racks on National Mall.
▪ A model transportation solution that creatively explores all opportunities to work or partner with governmental agencies and public and private transit service providers to fulfill the mission of the National Park Service.	Meets objective: Actual service delivery determined during project implementation; however, association with public or private provider or agency not precluded.	Same as Alternative 1.	Same as Alternative 1.	Same as Alternative 1.	Same as Alternative 1.

Objective	Alternative 1: No-Action	Alternative 2: Preferred Alternative	Alternative 3	Alternative 4	Alternative 5: Downtown Circulator
<ul style="list-style-type: none"> An easy-to-use transportation ticketing and payment system that is affordable, flexible, and coordinated with other transportation providers 	<p>Does not meet objective: No coordination with other transit providers. Limited availability of ticketing. Fares to be determined during implementation.</p>	<p>Meets objective: Tickets more easily purchased at automatic ticket vending machines. Joint-ticketing system with regional transit providers. Fares to be determined during implementation.</p>	<p>Partially meets objective: Tickets more easily purchased at automatic ticket vending machines. Fares to be determined during implementation.</p>	<p>Meets objective: Tickets more easily purchased at automatic ticket vending machines. Joint-ticketing system with regional transit providers. Fares to be determined during implementation.</p>	<p>Meets objective: Tickets more easily purchased at automatic ticket vending machines. Fare system consistent with Downtown Circulator; various, easy-to-use, and flexible payment options. Fares to be determined during implementation.</p>

Table 25. Summary of Environmental Consequences

	Alternative 1: No -Action	Alternative 2: Preferred Alternative	Alternative 3	Alternative 4	Alternative 5: Downtown Circulator
Transportation	<p>Minor, long-term, beneficial impact from</p> <ul style="list-style-type: none"> improved roadway infrastructure and transit stop facilities at specific locations <p>Minor, long-term, adverse impacts from</p> <ul style="list-style-type: none"> continuing present multimodal access policies (increased Segway® HT and electric scooter demand not addressed, inconsistent NPS and D.C. regulations) <p>No impact from continued limited free parking on the National Mall, but inconsistent with regional goals to encourage greater transit use and reduce congestion</p> <p><u>Cumulative effects:</u> Moderate, long-term, beneficial impacts but no contribution from Alternative 1 because of the small scale of the service compared to the regional transportation network.</p>	<p>Negligible, long-term, adverse impact from</p> <ul style="list-style-type: none"> removing on-street parking at some new transit stops <p>Minor to moderate, long-term, beneficial impacts from</p> <ul style="list-style-type: none"> emphasizing regional transit interconnections with two-way service in the visitor core and helping fill transit gaps in the National Mall and downtown areas, thus supporting regional goals by potentially shifting visitors and users from private automobiles to transit and potentially reducing traffic congestion improved roadway infrastructure and facilities at some transit stops (same as Alternative 1) new forms of multimodal access to designated trails and major sites, improving management of personal transportation on park walks and trails, and 	<p>Negligible to minor, long-term, adverse impacts from</p> <ul style="list-style-type: none"> removing on-street parking at some new transit stops continuing present multimodal access policies (increased Segway® HT and electric scooter demand not addressed, inconsistent NPS and D.C. regulations; same as Alternative 1) <p>Negligible to minor, long-term, beneficial impacts from</p> <ul style="list-style-type: none"> emphasizing regional transit interconnections with one-way service in the visitor core and helping fill transit gaps in the National Mall and downtown areas improved roadway infrastructure and facilities at some transit stops (same as Alternative 1) <p>No impact from continued limited free parking on the National Mall, but inconsistent with regional goals to encourage greater</p>	<p>Negligible to moderate, long-term, adverse impacts from</p> <ul style="list-style-type: none"> removing on-street parking at some new transit stops removing parking on Madison Dr. NW and Jefferson Dr. SW <p>Minor to moderate, long-term, beneficial impacts from</p> <ul style="list-style-type: none"> emphasizing regional transit interconnections with two-way service in the visitor core and helping fill gaps in the existing transit service in the National Mall and downtown areas, thus supporting regional goals by shifting potential visitors and users from private automobiles to transit and potentially reducing traffic congestion improved roadway infrastructure and facilities at some transit stops (same as Alternative 1) new forms of multimodal access on all multi-use park 	<p>Negligible to moderate, long term, adverse impacts from</p> <ul style="list-style-type: none"> removing on-street parking at some new transit stops continuing present multimodal access policies (increased Segway® HT and electric scooter demand not addressed, inconsistent with D.C. regulations (same as Alternative 1)) <p>Negligible to minor, long-term, beneficial impacts from</p> <ul style="list-style-type: none"> emphasizing regional transit interconnections with one-way service in the visitor core and helping fill gaps in the existing transit service in the National Mall and downtown areas, thus supporting regional goals by shifting potential visitors and users to transit and potentially reducing traffic congestion improved roadway infrastructure and facilities at some transit stops (same

	Alternative 1: No -Action	Alternative 2: Preferred Alternative	Alternative 3	Alternative 4	Alternative 5: Downtown Circulator
		<p>offering consistent NPS and D.C. management of Segway® HTs and electric scooters, thus reducing confusion among users</p> <ul style="list-style-type: none"> converting free parking to metered parking on the National Mall, creating incentives for visitors and users to use public transit rather than drive, thus improving the efficiency of on-street parking (greater turnover, no all-day parking) <p><u>Cumulative effects:</u> Moderate, long-term, beneficial impacts because the transportation system would supplement, support, and connect with an increasingly integrated regional transportation network.</p>	<p>transit use and reduce congestion</p> <p><u>Cumulative effects:</u> Moderate, long-term, beneficial impacts due to some improvements to the transportation service network, infrastructure and transit facilities, and traffic operations. The visitor transportation system not fully integrated into the regional system, with no contribution to cumulative effects because of the small scale of the visitor transportation service compared to the regional network.</p>	<p>trails, improving management of recreational Segway® HT and electric scooter use on park walks and trails, and offering consistent NPS and D.C. management of Segway® HTs and electric scooters, thus reducing confusion among users</p> <p>However, continued free parking in the remaining National Mall area inconsistent with regional parking management goals.</p> <p><u>Cumulative effects:</u> Moderate, long-term, beneficial impacts because the transportation system would supplement, support, and be connected with an increasingly integrated regional transportation network.</p>	<p>as Alternative 1)</p> <p>No improvements to the transportation service network in Arlington National Cemetery.</p> <p>No impact from continued limited free parking on the National Mall, but inconsistent with regional goals to encourage greater transit use and reduce congestion</p> <p><u>Cumulative effects:</u> Moderate, long-term, beneficial impacts because the transportation system would supplement and be integrated with the existing regional transportation network.</p>
Visitor and User Experience	<p>Negligible to minor, long-term, beneficial impacts from:</p> <ul style="list-style-type: none"> improved wayfinding programs, new transit vehicles, and upgraded transit stop facilities <p>Negligible to moderate, long-term, adverse impacts from</p> <ul style="list-style-type: none"> relatively infrequent transit service in the visitor core a separate ticketing system not integrated with the Metro system limited opportunities to access public transit a single one-way route around the visitor core, making the visitor transportation service less convenient for downtown access no direct access to 	<p>Negligible to moderate, long-term, beneficial impacts from</p> <ul style="list-style-type: none"> improved wayfinding programs, new transit vehicles, and upgraded transit stop facilities (same as Alternative 1) more frequent service, a joint-ticketing system with Metro, transit access to six more Metrorail stations than Alternative 1, and two interconnected, two-way loops in the visitor core area access to 11 more top visitor destinations compared to Alternative 1 (a 39% increase) choice of consistent, high-quality electronic educational programs increased ridership potential by offer- 	<p>Negligible to moderate, long-term, beneficial impacts from</p> <ul style="list-style-type: none"> improved wayfinding programs, new transit vehicles, upgraded transit stop facilities (same as Alternative 1) more frequent service, transit access to eight more Metrorail stations than Alternative 1, and two interconnected transit routes in the visitor core area plus two-way service by means of separate one-way routes access to 14 more top visitor attractions compared to Alternative 1 (a 50% increase) consistent, high-quality electronic educational programs increased ridership because of being 	<p>Negligible to moderate, long-term, beneficial impacts from</p> <ul style="list-style-type: none"> improved wayfinding programs, new transit vehicles, and upgraded transit stop facilities (same as Alternative 1) more frequent service, a joint-ticketing system with Metro, transit access to 11 more Metrorail stations than Alternative 1, and two interconnected transit routes in the visitor core area, plus two-way loop service access to up to 17 more top visitor attractions compared to Alternative 1 (up to a 61% increase) choice of consistent, high-quality electronic educational programs increased ridership 	<p>Negligible to moderate, long-term, beneficial impacts from</p> <ul style="list-style-type: none"> improved wayfinding programs, new transit vehicles, and upgraded transit stop facilities (same as Alternative 1) more frequent service, a joint-ticketing system with Metro, transit access to five more Metrorail stations than Alternative 1, and two interconnected transit routes in the visitor core area with two-way loop service access to 6 more top visitor attractions compared to Alternative 1 (a 21% increase) increased ridership because of being more responsive to user markets

	Alternative 1: No -Action	Alternative 2: Preferred Alternative	Alternative 3	Alternative 4	Alternative 5: Downtown Circulator
	<p>the World War II Memorial or the U.S. Marine Corps War Memorial</p> <ul style="list-style-type: none"> only in-depth educational / interpretive programs, with limited choice of alternative programs and no consistent content or overall quality guidelines <p><u>Cumulative effects:</u> Moderate, long-term, beneficial impacts, with a negligible, long-term, beneficial impact from Alternative 1 because of separate ticket systems, limited access to public transit, and in-depth educational / interpretive programs that would not appeal to a wide range of users.</p>	<p>ing a service more responsive to user needs</p> <p><u>Cumulative effects:</u> Moderate, long-term, beneficial impacts due to better access to public transit and visitor destinations, improved visitor orientation and interpretation, a visitor transportation service integrated with other regional transit systems, and an easy-to-use joint-ticketing system.</p>	<p>responsive to more market types</p> <p>Minor, long-term, adverse impacts from</p> <ul style="list-style-type: none"> a ticketing system not be linked to the Metro system one-way transit access in the visitor core no direct service to the World War II Memorial only in-depth programs, with limited choice of alternative programs, appealing to a smaller visitor market <p><u>Cumulative effects:</u> Moderate, long-term, beneficial impacts from ongoing regional programs. Minor, beneficial cumulative effects from better access to public transit and visitor destinations, improved visitor orientation and interpretation, and a visitor transportation service somewhat integrated with regional transit systems.</p>	<p>because of being responsive to more market types</p> <p><u>Cumulative effects:</u> Moderate, long-term, beneficial impacts due to better access to public transit and visitor destinations, visitor orientation and interpretation, a visitor transportation service integrated with the regional transit system, and an easy-to-use ticketing system coordinated with other transportation providers.</p>	<p>Negligible to moderate, long-term, adverse impacts from</p> <ul style="list-style-type: none"> inconvenience and delays due to security checks on portions of roads closed to public traffic no transit service to Arlington National Cemetery or the U.S. Marine Corps War Memorial infeasible access to the World War II Memorial no educational / interpretive program <p><u>Cumulative effects:</u> Moderate, long-term, beneficial impacts from ongoing and proposed regional programs, but minor, beneficial contributions from Alternative 5 because of no educational / interpretive opportunities.</p>
Public Health, Safety, and Security	<p>Minor, short- and long-term, adverse impacts on pedestrian safety from the potential for continued conflicts between pedestrians and multimodal users, and inconsistent recreational use of Segway® HTs and electric scooters on park trails.</p> <p>Negligible to moderate, long-term, beneficial impacts from transit vehicles and transit stops being accessible to people with disabilities, new transit vehicles equipped with security features, and transportation service provider safety and security programs</p> <p><u>Cumulative effects:</u> Minor, long-term,</p>	<p>Similar to Alternative 1 except a negligible, long-term, adverse impact on trail and sidewalk safety because of potential conflicts between pedestrians and recreational users of personal transportation vehicles on designated routes.</p>	<p>Similar to Alternative 1.</p>	<p>Similar to Alternative 2 except a minor, long-term, adverse impact from allowing recreational Segway® HT and electric scooter use on all multi-use park trails.</p>	<p>Similar to Alternative 1, except adverse security impacts due to introduction of transit vehicles in secured areas.</p>

	Alternative 1: No -Action	Alternative 2: Preferred Alternative	Alternative 3	Alternative 4	Alternative 5: Downtown Circulator
	beneficial impacts due to general improvements in overall safety and security of the visitor transportation service as well as improved accessibility for people with disabilities.				
Socioeconomic Environment	No additional impact on the local and regional economies from continuing the present visitor transportation service. <u>Cumulative effects:</u> Moderate, long term, beneficial impacts from plans and projects in the Washington, D.C., metropolitan area, but no contribution from the ongoing visitor transportation service.	Negligible, long-term, beneficial impacts from increased employment opportunities and potential visitor and user spending in other sectors of the local and regional economies. <u>Cumulative effects:</u> Moderate, long-term, beneficial impacts because of downtown revitalization and redevelopment providing more opportunities for employment and spending in various regional economic sectors, which would be supported by the proposed visitor transportation service.			
Park Operations and Visitor Transportation Service Operations	Differences between alternatives in terms of staffing and the number of vehicles and transit stops that would have to be maintained, which would be a cost of doing business for any service provider and would not affect park operations. Need for a new transit vehicle maintenance / storage facility under all alternatives, ranging from 4.2 acres to 6.4 acres if all services were combined at one location, with the continued use of the present 2.6-acre maintenance and storage site in East Potomac Park if desired. (East Potomac Park location would continue to be strategically beneficial because of its proximity to the transit service area, minimizing the length of trips between the service area and the facility.) No additional impacts to NPS contract management or law enforcement and security requirements under any alternative. <u>Cumulative effects:</u> None.				