

1 PURPOSE AND NEED

1.1 INTRODUCTION

The District Department of Transportation (DDOT), in conjunction with the Federal Highway Administration (FHWA), is proposing transportation improvements (the proposed action) along the Benning Road corridor in Washington, DC. The proposed action would improve transportation infrastructure conditions, enhance safety and operations along the corridor and at key intersections, enhance pedestrian and bicycle facilities, and extend streetcar transit service. FHWA is the lead federal agency for the Benning Road and Bridges Transportation Improvements Environmental Assessment (EA), with DDOT (the Applicant) as joint lead. The Federal Transit Administration (FTA), National Capital Planning Commission (NCPC), and National Park Service (NPS) are cooperating agencies. The proposed action is anticipated to be predominantly within the DDOT right-of-way (ROW). The proposed action would also include FHWA approval to allow DDOT to use Federal Aid Route ROW on Benning Road for streetcar operations. FHWA concurred with the use of this ROW for mass transit use in a letter to DDOT dated April 18, 2013. The project is included in the adopted National Capital Region Transportation Planning Board Transportation Improvement Program (TIP) and the Financially Constrained Long Range Plan (CLRP).

This EA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508), FHWA's *Environmental Impact and Related Procedures* (23 CFR 771 and 774), FHWA's *Technical Advisory Guidance for Preparing and Processing Environmental and Section 4(f) Documents* (T6640.8A), and DDOT's *Environmental Process Manual*. The project also includes the evaluation of potential effects to cultural resources in accordance with Section 106 of the National Historic Preservation Act (54 U.S.C. 300101 et seq.).

The Benning Road corridor is located within the northeast section of Washington, DC and is approximately two miles long. The project study area (the study area) is shown in **Figure 1-1**. The western terminus for the project is the intersection of Benning Road and Oklahoma Avenue and the eastern terminus is the Benning Road Metrorail Station. The corridor primarily includes residential areas with heavy retail and business activity around the intersection of Benning Road and Minnesota Avenue. The study area also abuts Langston Golf Course and Fort Mahan Park. Within the study area, Benning Road crosses the Anacostia River, Kingman and Heritage Island Park, DC-295, and Metro and CSX tracks.

Benning Road is a principal arterial and currently carries 26,000 annual average daily traffic (AADT). It carries four lanes of traffic in each direction between Oklahoma Avenue and 36th Street, and two through lanes of traffic in each direction between 36th Street and the Benning Road

Metrorail Station. Benning Road in the study area is adjacent to the H/Benning Streetcar Line. The study area includes two Metrorail stations: Benning Road and Minnesota Avenue.

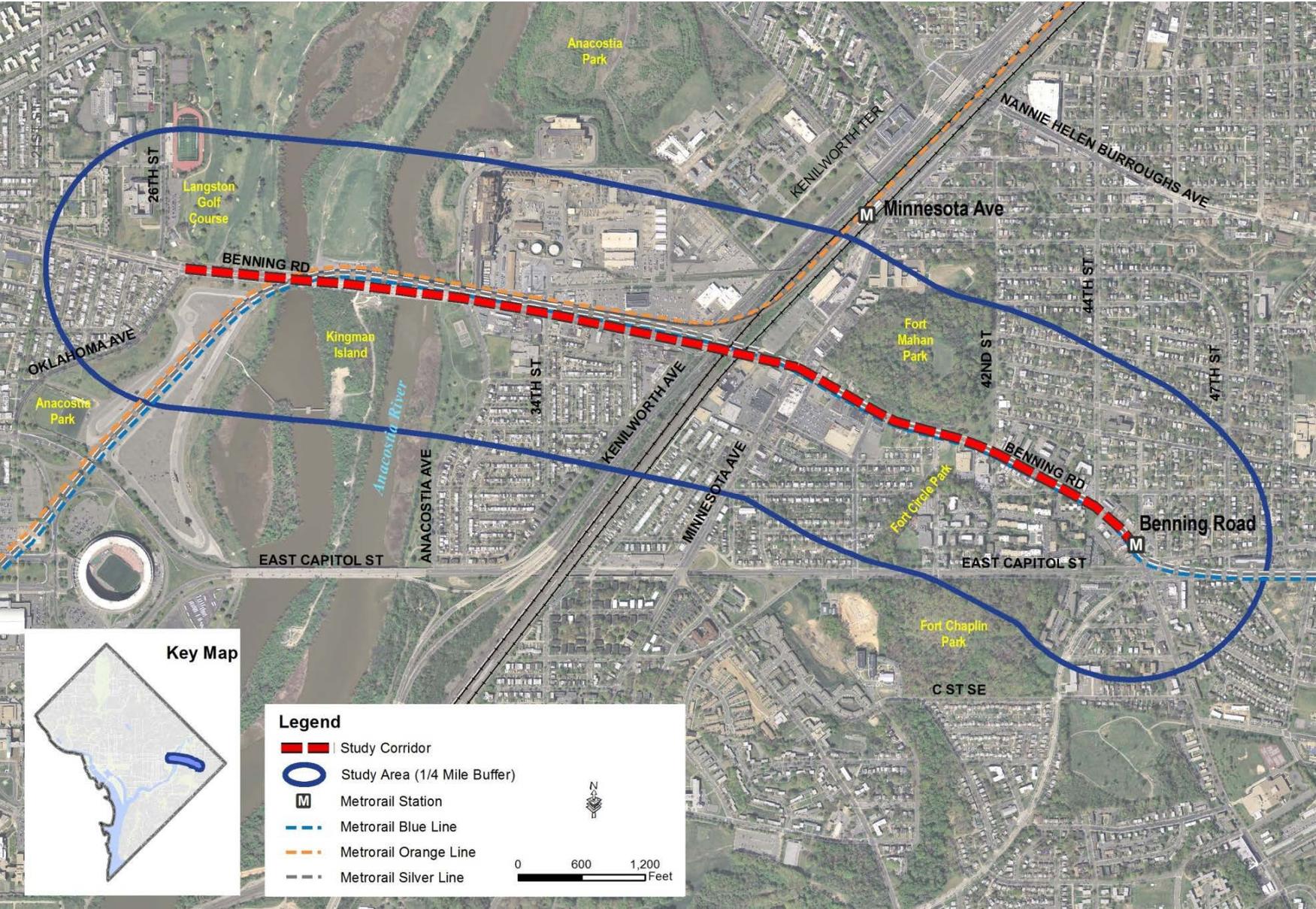
The intersection of Benning Road and Minnesota Avenue is an important intersection with a high volume of pedestrian and vehicular activity. This intersection provides safety challenges and has been continually listed as one of the top five intersections that record both high crash rates and crash frequency within the District. The *Traffic Safety Statistics Report for the District of Columbia* (DDOT, 2011-2013) indicates that the intersection of Benning Road and Minnesota Avenue recorded 120 crashes during the period between 2011 and 2013, with 38 of those crashes resulting in injuries.

The two bridges crossing DC-295 and the CSX tracks in the study area provide both structural and functional challenges. These bridges are in need of repair or rehabilitation, and lack adequate sidewalks. The existing corridor shows heavy transit activity that would benefit from an additional transit option such as the extension of the existing streetcar line that currently terminates at the Oklahoma Avenue and Benning Road intersection. This area has been part of several studies and plans in the past including the *DC Transit Future System Plan* (DDOT, 2010), *Benning Road Streetcar Extension Feasibility Study* (DDOT, 2013) and *Benning Road Corridor Redevelopment Framework Plan* (DC Office of Planning, 2008). The need to improve the Benning Road corridor to safely and efficiently accommodate all modes of transportation has been noted in these previous planning studies.

1.2 PROJECT PURPOSE

The purpose of the Benning Road and Bridges Transportation Improvements project is to address deficiencies in transportation infrastructure conditions, improve safety conditions and operations for both motorized and non-motorized access, and to provide for increased mobility and accessibility by improving transit operations and options between the intersection of Benning Road, and Oklahoma Avenue and the Benning Road Metrorail Station.

Figure 1-1: Study Area



Source: DC Office of the Chief Technology Officer (OCTO); Benning Road and Bridges Transportation Improvements EA Project Team, February 2014

1.3 PROJECT NEEDS

The needs for this project are the following:

- Improve transportation infrastructure conditions;
- Enhance safety and operations along the corridor and at key intersections;
- Enhance and install pedestrian and bicycle facilities; and
- Extend streetcar transit service.

1.3.1 IMPROVE TRANSPORTATION INFRASTRUCTURE CONDITIONS

Benning Road is a heavily-used principal arterial. It carries approximately 26,000 AADT. It currently operates with four general purpose lanes of traffic in each direction between Oklahoma Avenue and 36th Street, and two through lanes of traffic in each direction between 36th Street and the Benning Road Metrorail Station.

Some sections of the roadway are in need of geometric improvements such as the Benning Road and 36th Street section as well as the intersection of Benning Road and Minnesota Avenue. The intersection of Benning Road and Minnesota Avenue needs to be reconfigured to provide a safer crossing for pedestrians and safer vehicular turning movements as described in **Section 1.3.2**.

The project study area consists of several bridges that cross the Anacostia River, Kingman Island, Kenilworth Avenue or DC-295, and Metro and railroad tracks. The bridges over the Anacostia River and Kingman Island are in good condition; however, the two bridges (the “Viaduct Bridges”) crossing over DC-295 and Metro and railroad tracks are in need of structural rehabilitation or replacement. These bridges consist of two parallel structures for the eastbound and westbound lanes with two independent spans. The eastbound bridge was rebuilt in 1961 partially on top of the original piers with a complete deck replacement in 1989. The westbound bridge was re-built in 1982 on top of the existing 1946 plan foundations.

Both eastbound and westbound spans are currently adequate for their intended traffic loads; however, their condition and projected longevities are highly variable. The concrete decks and steel superstructures exhibit satisfactory condition, and the abutments, piers, joints and wearing surfaces have areas that are in need of repair or rehabilitation. Inspections of these bridges by DDOT in 2012 and 2013 indicate that the bridges:

- *Have a fair to poor substructure condition:* Superstructures are in overall good or satisfactory condition, but substructures have cracked and spalled concrete.
- *Have exceeded their lifespan:* The bridges have exceeded their calculated fatigue life.
- *Do not meet current seismic criteria:* The existing bearings are steel rocker type. The roadway pavement conditions of Benning Road also vary. There are several sections that are in good condition; however, there are some sections that need pavement work.

1.3.2 ENHANCE SAFETY AND OPERATIONS

One of the needs for this project is to improve the safety of pedestrians and vehicles using this corridor.

The intersection of Benning Road and Minnesota Avenue has historically been and continues to be listed as one of the top five intersections that records both high crash rates and crash frequency within the District (see **Appendix A** for more detailed crash data and safety analysis). The *Traffic Safety Statistics Report for the District of Columbia* (2011-2013) shows that the intersection of Benning Road and Minnesota Avenue recorded 120 crashes during the period between 2011 and 2013 with 38 of those crashes resulting in injuries (See **Table 1-1**). The *Benning Road Streetcar Extension Feasibility Study* (DDOT, 2013) showed that 443 vehicles turn left during the PM peak period from eastbound Benning Road to northbound Minnesota Avenue, and projected the number of vehicles to increase to 563 by 2040. The length of the left turn lane is not adequate to accommodate the number of buses and cars attempting to make this turn, and traffic attempting to clear the intersection within the allowed signal timings has resulted in numerous left-turn swipes, rear-end vehicle collisions, and pedestrian collisions, as shown in **Figure 1-2**. Conflicts at this intersection affects safety for all modes and an intersection reconfiguration is required to improve the overall level of service and geometry for pedestrians, bicyclists, buses, and vehicles.

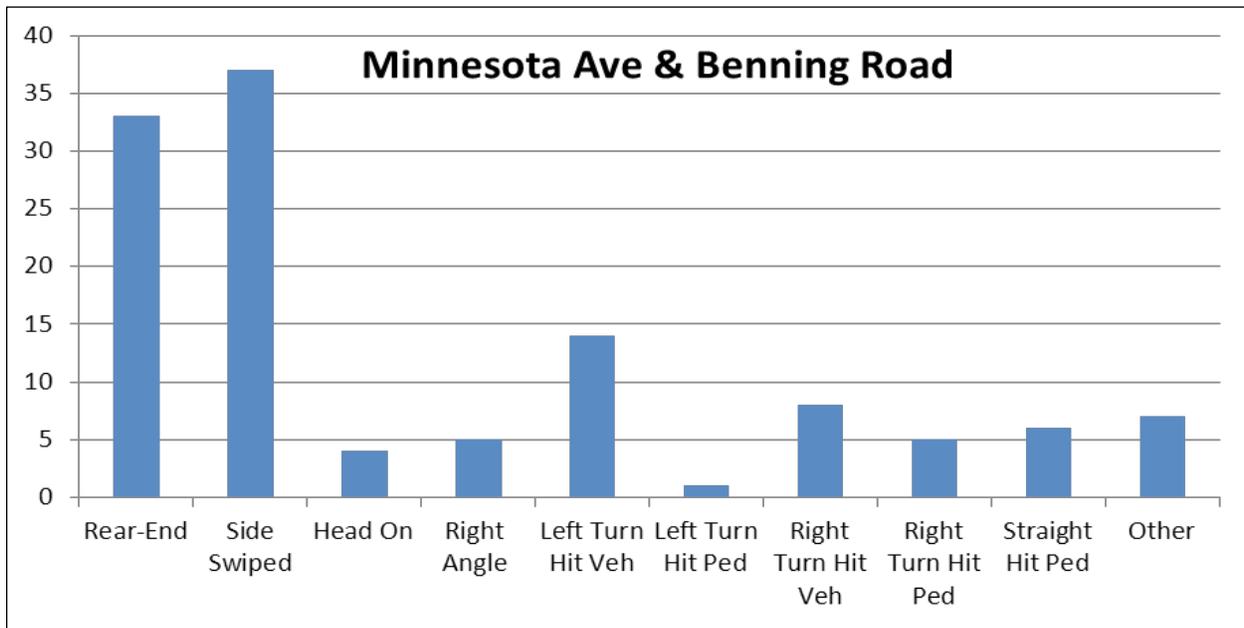
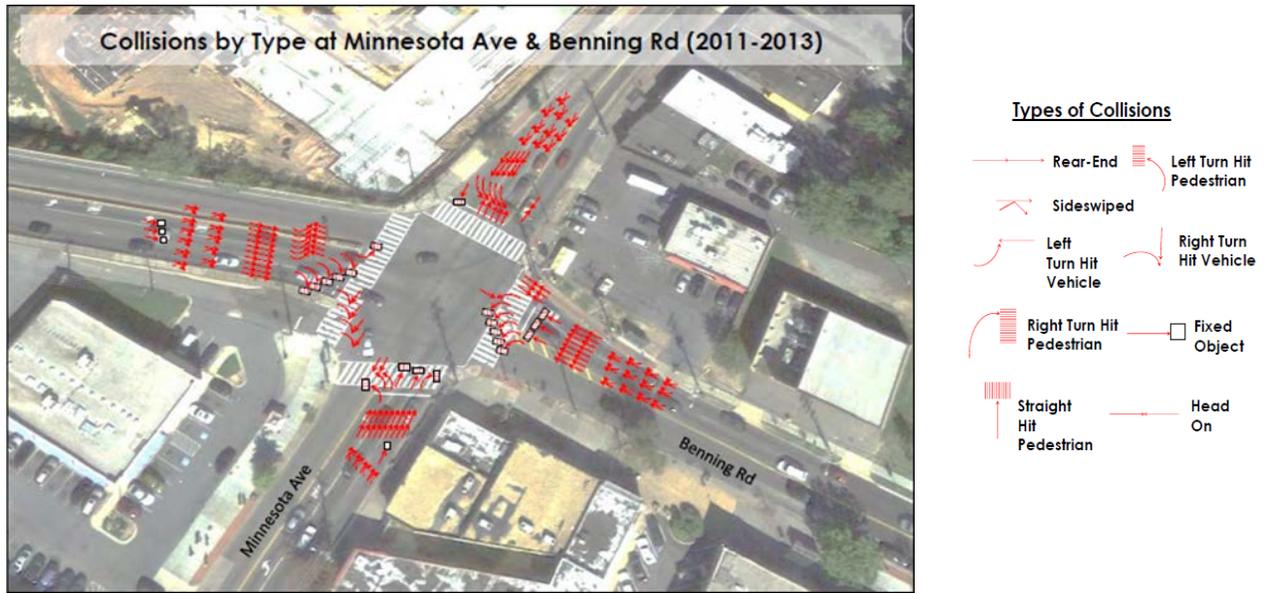
Safe pedestrian crossings are also needed at the intersection of 36th Street where pedestrians must cross the DC-295 expressway ramp to access the Viaduct Bridges. The pedestrian curb ramp at 36th Street is not aligned to the crossing and the curb ramp to access the Viaduct Bridges is not compliant with the Americans with Disabilities Act of 1990 (ADA).

Table 1-1: Benning Road Corridor Crash Data

Intersection	Number of Crashes	Crash Rate (MEV)	Collision Type (2011-2013)									Crashes Resulting in Injury	
			Rear-end	Sideswipe	Right Angle	Head on	Left Turn Hit Veh	Left Turn Hit Ped	Right Turn Hit Veh	Right Turn Hit Ped	Straight Hit Ped		
Benning Rd and Anacostia Ave	23	0.46	52%	17%	17%		4%						12
Benning Rd and 34 th St	16	0.31	19%	25%	6%	6%	19%		13%				9
Benning Rd and 36 th St	26	0.74	46%	31%	4%	4%	8%						14
Benning Rd and Minnesota Ave	120	2.48	28%	31%	4%	3%	12%	1%	7%	4%	5%		38
Benning Rd and 45 th St	12	0.49	25%	42%			8%		8%		8%		4
Benning Rd and Central Ave	10	0.43	30%	40%			10%		10%		10%		3
Benning Rd and East Capitol St	90	1.51	26%	27%	8%	4%	6%		9%	2%	7%		32
Minnesota Ave and Dix St	16	0.64	44%	0%	6%		19%		13%		6%		9
Minnesota Ave and Grant St	16	0.72	44%	19%			13%						7
Minnesota Ave and Hayes St	2	0.11	50%	50%									0
Minnesota Ave and Gault Pl	6	0.32	17%	50%			17%						1
Minnesota Ave and NHB Ave	49	1.39	35%	27%	12%	6%	6%		6%				22

Source: Traffic Safety Statistics Report for the District of Columbia (DDOT, 2011-2013)

Figure 1-2: Minnesota Avenue and Benning Road Intersection Crash Data



Source: *Traffic Safety Statistics Report for the District of Columbia* (DDOT, 2011-2013)

1.3.3 ENHANCE AND INSTALL PEDESTRIAN AND BICYCLE FACILITIES

Sidewalks are located along the north and south sides of Benning Road for much of the length of the corridor; however, in several areas these sidewalks are narrow, not ADA compliant, in poor condition and unwelcoming, as shown in **Figure 1-3**.

The Viaduct Bridges over DC-295 have a narrow sidewalk only on the south side of the bridge. The original bridges did not include facilities for pedestrians or bicycles. A sidewalk on the south side of the bridge was created by adding a Jersey barrier at the edge of the outside travel lane and using the shoulder area as a sidewalk, as shown in **Figure 1-4**. This sidewalk is narrow and does not encourage a pleasant walking experience. With the Jersey barrier on one side and a metal fence on the other side, it also creates a confined experience. The bridge needs to have appropriate and safe sidewalks on both sides of the bridges to enhance pedestrian mobility and access.

Figure 1-3: Existing Sidewalk on North Side of Benning Road near Oklahoma Avenue (looking West)



Figure 1-4: Existing Sidewalk on South Side of Benning Road Viaduct Bridges (looking East)



The study corridor lacks adequate facilities for non-motorized access. There are no existing bike facilities or shared use paths that provide safe bicycle access in the corridor. Benning Road is identified as “poor” condition in the District’s *Bicycle Master Plan* (DDOT, 2005). The *Bicycle Master Plan* and the Bicycle Element of the *moveDC Plan* (DDOT, 2014) also identify Benning Road across the Anacostia River, as an off-street trail as part of Anacostia River recreational facilities. With the increase in businesses, facilities, and population along the corridor, and around the Benning Road and Minnesota Avenue intersection area in particular, the need to accommodate non-motorized modes such as bicycles is increasing. In addition, because of the area around the intersection of Benning Road and Minnesota Avenue is an activity hub and a neighborhood destination, and Benning Road’s direct access to destinations such as H Street and Anacostia River recreational facilities, there is a need to improve the bicycle connections and access across the Anacostia River and the DC-295 bridges.

1.3.4 EXTEND STREETCAR TRANSIT SERVICES

Benning Road is an important transit corridor exhibiting heavy Metrorail access and bus activity. The Minnesota Avenue and Benning Road Metrorail stations are located within the project study area and provide access to the Orange Line, and Silver and Blue Lines, respectively. In 2012, on an average weekday, 3,257 passengers boarded at the Minnesota Avenue Metrorail Station, while 3,183 boarded at the Benning Road Metrorail Station.

Figure 1-5: Crowded Bus Stop on Minnesota Avenue at Benning Road (looking South)



Bus service in the project study area is provided by the Washington Metropolitan Area Transit Authority (WMATA). Commuter routes X1 and X3 operate in peak hours from the Minnesota Avenue Metrorail Station via Benning Road continuing to Tenleytown and Foggy Bottom, respectively. Route X2 is a major Metrobus service operating between the Minnesota Avenue Metrorail Station via H Street to McPherson Square. Current ridership for X1, X2, and X3 is the

fourth highest in the Metrobus system with almost 14,000 passengers per day and approximately 4,700 passengers accessing the routes at the Minnesota Avenue Metrorail Station. MetroExtra Route X9 provides limited-stop rush-hour service from the Capitol Heights Metrorail Station via Benning Road and H Street to Metro Center. Metrobus U8 serves as a neighborhood circulator and feeder to the Minnesota Avenue, Benning Road, and Capitol Heights Metrorail Stations via Benning Road, Minnesota Avenue and Nannie Helen Burroughs Avenue.

WMATA, in cooperation with DDOT, completed a transit assessment study in January 2010 and identified the H Street/Benning Road Metrobus corridor as part of the Metrobus Priority Corridor Network (PCN). The PCN includes 24 high-volume Metrobus corridors across the region. These high-volume corridors account for half of all bus ridership in the current Metrobus system. Key findings from the assessment revealed that buses on the corridor:

- *Experience passenger crowding:* Despite very high combined frequencies of bus routes, buses are approaching or are at capacity not only during peak periods but also at mid-day and in the evenings occasionally. The X lines (X1, X3, X2, and X9) have a combined frequency of 3.5 minutes during the morning peak hour (6:00–7:00 AM) between the Minnesota Avenue Metrorail Station and the H Street corridor. According to 2013 WMATA ridership data, maximum passenger loads on this segment approach the high 40s on standard 40' buses (39 seated load) and the high 60s (Route X2) on the articulated buses (60 seated load). WMATA service standards allow for 120% of the seated load during peak periods. The U8 runs every 15 minutes between the Benning Road Metrorail Station and the Minnesota Avenue Metrorail Station.
- *Do not adhere to schedule:* Schedule adherence is reported to be a problem, along with bus bunching resulting from schedule non-adherence and delays caused by congestion. The frequency in which buses arrive is also reported to be a common issue for X line riders.

The current passenger crowding on these routes indicates the need for an additional transit option that can provide a direct connection to the H Street corridor, Union Station and the downtown area. Neither the Minnesota Avenue Metrorail Station on the Orange Line nor the Benning Road Metrorail Station on the Blue and Silver Lines provide a direct connection to the H Street corridor or Union Station. In addition, the study area is also experiencing an increase in businesses and population. Several new buildings and offices have opened up in the study area in the past few years. With the increase in activity centers and population, the need for an additional transit service is becoming more apparent.

Benning Road is also an important component of the DC Streetcar program. The Benning Road corridor was identified in the *DC Transit Future System Plan* (DDOT, 2010) as part of DDOT's 22-mile priority streetcar system. DDOT recently began operation of its first streetcar line that runs on H Street and Benning Road between Union Station and Oklahoma Avenue (H Street ends at 15th Street and continues as Benning Road westward starting at 15th Street). The H/Benning Streetcar Line operates at 10 to 15 minute headways Monday through Thursday from 6:00 a.m. to midnight; Friday from 6:00 a.m. to 2:00 a.m.; Saturday from 8:00 a.m. to 2:00 a.m.; and closed Sunday (Sunday service may be phased in at a later date). The Benning Road and Bridges Transportation Improvements project would provide a natural extension of the DC Streetcar system eastwards. It would connect to several activity hubs including the area around the intersection of Benning Road and Minnesota Avenue, a major activity center in Ward 7, as well the Benning Road Metrorail

Station located in close proximity to the District boundary. These activity hubs underline the need to connect this important area of Ward 7 with the H Street corridor, Union Station, and the downtown area with a direct enhanced transit connection through the streetcar system.

1.4 LOGICAL TERMINI

The FHWA regulations outline three general principles at 23 CFR 771.111(f) that are to be used to frame a highway project:

In order to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated, the action evaluated in each environmental impact statement (EIS) or finding of no significant impact (FONSI) shall:

1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope;
2. Have independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and
3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

This section covers the applicability of these principles to the Benning Road and Bridges Transportation Improvements project.

1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope:

The Benning Road and Bridges Transportation Improvements project connects logical termini and is of sufficient length to address environmental matters on a broad scope. This project would connect two major activity centers in northeast Washington, DC. The eastern terminus is at the Benning Road Metrorail Station with the possibility of connecting to the Minnesota Avenue Metrorail Station; two heavily traveled areas and utilized stations. The western terminus is at Benning Road and Oklahoma Avenue, which is heavily traveled by buses and is expected to become a bus transfer area. The Benning Road and Bridges Transportation Improvements project is also a logical extension of the H/Benning Streetcar Line, which goes from H Street behind Union Station to the intersection of Benning Road and Oklahoma Avenue.

The proposed termini for the Benning Road and Bridges Transportation Improvements project are the intersection of Benning Road at Oklahoma Avenue to the west and the Benning Road Metrorail Station to the east.

The proposed western terminus for the project at the intersection of Benning Road and Oklahoma Avenue is also the east terminus for the H/Benning Streetcar Line. Streetcar maintenance facilities are located at 26th Street at a former high school facility, a few hundred feet north of the intersection of Benning Road and Oklahoma Avenue. The intersection of Benning Road and Oklahoma Avenue is also the location of an existing WMATA Metrobus stop for the heavily-used X1, X2, and X3 lines; this location is expected to soon become a transfer area for WMATA bus riders to transfer to the H/Benning Streetcar Line. Oklahoma Avenue is a major route for traffic accessing special events at the RFK Stadium.

The eastern terminus at the Benning Road Metrorail Station is an important origin and destination. It is a multimodal activity center where residents and transit riders access and exit the Metrorail Blue or Silver Line and walk to their homes and or local businesses, or access surface transit via the Metrobus U8 route.

The project limits contain numerous NEPA-related considerations including, from west to east, the NPS Langston Public Golf Course, Waters of the US associated with Kingman Island and the Anacostia River, Anacostia Park, and the Anacostia Riverwalk Trail, hazardous materials associated with a former power generation facility and railroad facilities, new mixed-use development at the corner of Benning Road and Minnesota Avenue, historic resources associated with Fort Mahan Park and the Fort Circle Trail, multiple community facilities and established residential development adjacent to both Benning Road and Minnesota Avenue.

The proposed termini allow for a sufficient range of physical construction alternatives and transit technology options to address the Purpose and Need elements and provide avoidance and minimization opportunities of the identified NEPA concerns.

2. Have independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made:

The project corridor would have independent utility and would be usable and reasonable even if no additional transportation improvements in the area are made. Benning Road serves as the main transportation corridor within the project area. Several safety, operation and multi-modal improvements are needed on Benning Road and have been studied in previous efforts.

3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements:

This project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements. Implementation of the transportation improvements, including those that would provide for transit, would not limit future considerations for alternatives within or beyond the project corridor.

In 2003, DDOT initiated the DC's Transit Future (DCTF) System Plan and Alternatives Analysis (AA). The DCTF System Plan and AA consisted of a comprehensive assessment and evaluation of alternative modes and levels of investment in 14 corridors across the District including the H Street/Benning Road corridor. The evaluation compared the performance of Bus Rapid Transit (BRT) and streetcar modes with No Build and Baseline options in each of the system corridors. The evaluation considered more than 30 individual measures that addressed four primary goals: Improve Access and Mobility, Encourage Community and Economic Development, Enhance System Performance, and Promote Environmental Quality. The process resulted in an integrated system of recommended transit service investments in the District that includes combinations of streetcar, BRT, and enhanced bus services in appropriate corridors. The DCTF System Plan and AA was substantially completed in 2005 and subsequently updated in 2008 and 2009.

The proposed western terminus of Benning Road and Oklahoma Avenue is the eastern termini of one of the District's initial streetcar lines, the H/Benning Streetcar Line and the associated Car Barn. The Benning Road and Bridges Transportation Improvements project will consider the

extension of the streetcar and other transit technologies into the proposed project study area but will not restrict the alternatives or technologies to be investigated for future improvements beyond the project study corridor.

The Benning Road and Bridges Transportation Improvements project's proposed termini meet the tenets of FHWA's *NEPA and Transportation Decisionmaking, The Development of Logical Project Termini, November 5, 1993*. The project will satisfy identified safety and rehabilitation of existing bridge structures along the facility, and multi-modal capacity improvements within the context of the local socioeconomics, future travel demand and other infrastructure improvements in the area.

1.5 PROJECT GOALS

The project goals were developed by considering the Purpose and Need, agency/public comments, and project area constraints and opportunities. The goals for the Benning Road and Bridges Transportation Improvements project include the following:

- Create a safe facility for all users of the roadway (motorists, transit, pedestrians, and bicyclists);
- Effectively manage stormwater runoff;
- Avoid and minimize use of any additional ROW outside the existing DDOT ROW to the extent possible;
- Preserve and protect environmental resources, both man-made and natural, and retain the current context of the corridor (i.e., visual aesthetic, using context-sensitive solutions in the planning and design phases of the project);
- Provide improved access to transit users and pedestrians;
- Utilize environmentally sensitive materials and practices; and
- Support land use. Between 2000 and 2010, the project study area grew by 6 percent from 9,267 to 9,831 residents. The population is forecast to grow by 10 percent between 2020 and 2040 to approximately 11,455 people. This anticipated growth will create increased demand on the existing transportation network, and mobility improvements identified in land use plans will be essential to meet transportation needs.

In addition to the project goals, the proposed improvements for the Benning Road and Bridges Transportation Improvements project consider design criteria outlined in the American Association of State and Highway Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities* (AASHTO, 1999), *DDOT Design and Engineering Manual*, Chapter 28 (DDOT, 2009b), *DDOT Standard Specifications for Highways and Structures* (DDOT, 2009e), *DDOT Bicycle Master Plan* (DDOT, 2005b), *DDOT Bicycle Facility Design Guide* (DDOT, 2005a), *DDOT Environmental Policy and Process Manual* (DDOT, 2008), the *Manual on Uniform Traffic Control Devices (MUTCD) Traffic Controls for Bicycle Facilities, Part 9* (FHWA, 2009), *District of Columbia Pedestrian Master Plan* (DDOT, 2009d), *AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities* and 2010 Update of the *AASHTO Guide* (AASHTO, 2004; Toole, 2010), and other design guidance.

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