

U.S. Department of Transportation

## Federal Railroad Administration

WASHINGTON UNION STATION STATION EXPANSION Draft Environmental Impact Statement and Draft Section 4(f) Evaluation for

# Washington Union Station Expansion Project Executive Summary

District of Columbia June 2020



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# **Acronyms and Abbreviations**

ADA	Americans with Disabilities Act		
Amtrak	National Railroad Passenger Corporation		
ANC	Advisory Neighborhood Commission		
AOC	Architect of the Capitol		
APE	Area of Potential Effects		
BID	Business Improvement District		
ССС	Community Communications Committee		
CFA	Commission of Fine Arts		
CFR	Code of Federal Regulations		
CEQ	Council on Environmental Quality		
CTR	Comprehensive Transportation Review		
DC	District of Columbia		
DCOP	District of Columbia Office of Planning		
DDFHV	District Department of For-hire Vehicles		
DDOT	District Department of Transportation		
DEIS	Draft Environmental Impact Statement		
DMPED	Office of the Deputy Mayor for Planning and Economic Development		
EIS	Environmental Impact Statement		
EPA	United States Environmental Protection Agency		
FEIS	Final Environmental Impact Statement		
FHWA	Federal Highway Administration		
FRA	Federal Railroad Administration		
FTA	Federal Transit Administration		
GPO	Government Publishing Office		
GSA	General Services Administration		
MARC	Maryland Area Regional Commuter		
MDOT	Maryland Department of Transportation		

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MPD Metropolitan Police Department	
MTA	Maryland Transit Administration
MWCOG	Metropolitan Washington Council of Governments
NCPC	National Capital Planning Commission
NE	Northeast
NEC	Northeast Corridor
NEPA	National Environmental Policy Act
NOA	Notice of Availability
NoMA	North of Massachusetts Avenue
NPS	National Park Service
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
CWJ	Official with Jurisdiction
PA	Programmatic Agreement
REA	Railway Express Agency
ROD	Record of Decision
SHPO	State Historic Preservation Officer
The District	Washington, DC
The Project	Washington Union Station Expansion Project
TSA	Transportation Security Administration
TVRA	Threat and Vulnerability Risk Assessment
U.S.	United States
USC	United States Code
USCIS	U.S. Citizenship and Immigration Services
USDOT	United States Department of Transportation
USRA	Union Station Redevelopment Act of 1981
USRC	Union Station Redevelopment Corporation
VA DRPT	Virginia Department of Rail and Transportation
VRE	Virginia Railway Express
WMATA	Washington Metropolitan Area Transit Authority



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WUS

Washington Union Station

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# **Executive Summary**

# ES.1 What is the Washington Union Station Expansion Project?

The Washington Union Station (WUS) Expansion Project (the Project), proposed by Union Station Redevelopment Corporation (USRC) and the National Railroad Passenger Corporation (Amtrak), would expand and modernize WUS's multimodal transportation facilities to meet current and future transportation needs while preserving the historic station building. The Project includes: reconstructing and realigning the tracks and platforms; constructing a train hall and new concourses; enhancing WUS accessibility; improving multimodal transportation services and connectivity; and improving and expanding infrastructure and other supporting facilities. The planning horizon year for full operation of the Project is 2040.

The Project Area (Figure ES-1) covers approximately 53 14 acres. It includes the existing historic station building, the 15 WUS parking garage and bus facility, the rail terminal, and 16 the railroad infrastructure up to the lead tracks to the 17 Eckington and Ivy City Rail Yards, just north of New York 18 Avenue Northeast (NE). Neither rail yard is included in the 19 Project Area. The Project Area contains the Railway Express 20 Agency (REA) Building (owned by Amtrak) and the H Street 21 Bridge (property of the District Department of 22 Transportation [DDOT]<sup>1</sup>). 23

WASHINGTON UNION STATION TODAY



The multimodal hub of the Washington, DC region:

- The second busiest railroad station in the nation, with nearly 50,000 rail passenger trips per day.
- Over 37 million visitors annually, more than each of the three airports serving the region.
- A popular commercial and tourist destination for residents and visitors.
- An iconic historic station building listed in the National Register of Historic Places.

<sup>&</sup>lt;sup>1</sup> DDOT is leading a project to replace the H Street Bridge. This is a separate and independent action from the Project evaluated in this DEIS.

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Figure ES-1. Project Area

## ES.2 Who are the Project Proponents?

The Project Proponents are USRC and Amtrak. The Union Station Redevelopment Act of 1981 created USRC to oversee WUS's restoration and redevelopment and transform it into a modern transportation hub as well as a shopping and tourist destination. Under a 99-year lease from the Federal Railroad Administration (FRA) executed in 1985, USRC is responsible for the rehabilitation, redevelopment, and ongoing management and operations of WUS. Amtrak controls WUS's tracks and the platforms. The Project Proponents are currently engaged in conceptual design and formal planning for the Project.

# ES.3 What is FRA's Role in the Project?

FRA is the Lead Agency preparing the Environmental Impact Statement (EIS) for the Project. 31 FRA owns the WUS building, the parking garage and underlying real property, and the rail 32 terminal north of the WUS building on behalf of the Federal Government. FRA's actions 33 relating to the Project may include issuing approvals or providing funding in the future for 34 design or construction. The Project Action Alternatives (see Section ES.9, What are the 35 Alternatives Assessed in the DEIS, below) include the potential development of Federally 36 owned air rights above WUS. If such development does occur in the future, FRA may be 37 involved with the transfer, lease, or disposal of this property as a separate Federal action. 38

# ES.4 Who are Other Key Project Stakeholders?

Three entities have a direct stake in the Project because their operations or property overlap with WUS:

- DDOT owns the H Street Bridge, which crosses the rail terminal to the north of the historic station building, and the DC Streetcar system that operates on the bridge as well as the old H Street right-of-way below the tracks.
   The Washington Area Metropolitan Transit Authority (WMATA) operates the Union Station Metrorail Station on the Red Line. This is WMATA's most heavily used Metrorail station.
- A private developer Akridge owns air rights above the rail terminal between K
   Street and the historic station building, excluding the H Street Bridge and the WUS
   parking garage (including vehicle access ramps).
  - Figure ES-2 shows existing ownerships in the Study Area.

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Figure ES-2. Presently Controlling Interests in Project Area<sup>2</sup>

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<sup>&</sup>lt;sup>2</sup> Smaller easements are not shown.

#### What is an EIS? **ES.5**

52	The National Environmental Policy Act of 1969 (NEPA) requires Federal agencies to identify
53	the environmental effects of their actions. NEPA also requires that agencies involve the
54	public in their decision-making. This allows agencies to make well-informed decisions. An EIS
55	identifies the impacts a project could have on the human and natural environment. An EIS
56	also identifies measures to avoid, minimize, or mitigate potential impacts. Finally, it helps
57	ensure compliance with applicable Federal, state, and local environmental laws and
58	regulations.

#### **ES.6** What is the Purpose and Need for the Project?

The purpose of the Project is to support current and future long-term growth in rail service and operational needs; achieve compliance with the Americans with Disabilities Act of 1990 (ADA) and emergency egress requirements; facilitate intermodal travel; provide a positive customer experience; enhance integration with the adjacent neighborhoods, businesses, and planned land uses; sustain WUS's economic viability; and support continued preservation and use of the Historic Station building.

The Project is needed to improve rail capacity, reliability, safety, efficiency, accessibility, and security for both current and future long-term railroad operations at WUS.

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Many aspects of WUS in its current condition are inadequate to meet current or anticipated 60 future passenger and station needs. WUS adequately accommodates current rail operations; 61 however, over the long-term, it will need additional capacity to meet future demand. 62 Cumulative train ridership across Amtrak, Maryland Area Regional Commuter (MARC), and 63 Virginia Railway Express (VRE) is anticipated to more than double by 2040, which would 64 65 quickly push WUS beyond its capacity unless substantial efforts are made to prepare for the growth. The Northeast Corridor (NEC) FUTURE plan anticipates growing ridership and train 66 service in the northeast corridor. The planned growth in passenger volumes at WUS would increase congestion on platforms, in queueing areas, and in the hallways connecting the 68 various transportation modes.

WUS's existing *platforms* and waiting areas do not provide high quality passenger experience 70 and accessibility. They would also not be able to adequately serve the projected future 71 passenger demand for Amtrak and other rail services. WUS's platforms are generally 72 adequate for current passenger volumes but would be unable to accommodate future needs 73 for nearly simultaneous train arrivals and for safe and efficient movement of a greater 74 volume of passengers. Furthermore, the existing station platforms are not compliant with 75 current ADA or emergency egress standards. 76

Multimodal operations and access also need improvement as they are frequently constrained today and will only become more so in the future. WUS does not provide a consistently positive passenger experience befitting a central multimodal transportation facility in the nation's capital. The layout of the rail terminal restricts connectivity with and between the adjacent neighborhoods to its east and west. The Project would enhance connections with and among these neighborhoods. Finally, to provide for sustainable future operation, preservation, and maintenance, WUS needs to remain financially viable.

# **ES.7** How Did the Project Proponents and FRA Develop Project Alternatives?

- NEPA requires the consideration of a reasonable range of alternatives. FRA, working with the
   Project Proponents, identified a reasonable range of alternatives for the Project through a
   multi-step alternative development and evaluation process. Figure ES-3 illustrates this
   process.
- The Project Proponents first developed and refined various station expansion concepts. In compliance with NEPA and FRA regulations, FRA then screened these concepts using a multistep, iterative evaluation process that included public participation, leading to the identification of six Action Alternatives retained for evaluation in the Draft EIS (DEIS). The overall process included the following steps:
- Identification of Project Elements;
  - Concept Development;
  - Concept Screening;
- 96 Concept Refinement;

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- 97 Alternatives Refinement; and
  - Further Alternatives Refinement.

### **ES.7.1** Identification of Project Elements

- <sup>99</sup> During the first step, the Project Proponents<sup>3</sup> identified the following Project elements:
  - Historic Station: The historic station building, listed in the National Register of Historic Places (NRHP), is an important part of the urban fabric of Washington, DC. All concepts preserve the historic station and would sensitively integrate it with the Project.

<sup>&</sup>lt;sup>3</sup> In addition to the Project Proponents, Akridge, the private air-rights owner and developer, participated in identifying Project elements and in the early stages of concept development.



### Figure ES-3. Concept and Alternatives Development and Screening Process

104     105       106     107       108     109       110     111       112     113       114	Tracks and Platforms: The tracks and platforms provide space for trains and their passengers. They serve a core function of WUS. Amtrak initially evaluated 21 options for tracks and platforms and identified two that would meet 2040 demand: Terminal Infrastructure (TI) Option 14 and Option 16. Both options would provide 19 revenue tracks, including seven run-through tracks. TI Option 14 would feature 30-foot-wide platforms with an opening to provide light and air for a concourse beneath the track level. TI Option 16 would feature a large central platform with the potential to accommodate openings for skylights at track level to let light into the concourse below. Though both TI options would be adequate, FRA chose to advance TI Option 14 through the DEIS analysis because of anticipated operational benefits. TI Option 16 remains available as a potential refinement at a later stage of Project design.
115 116 117	<ul> <li>Bus Facility: Intercity and charter bus services are long-established transportation modes at WUS. The Proponents initially identified and evaluated thirteen options for a new bus facility, including five off-site options.</li> </ul>
118 119 120 121	Train Hall: A monumental train hall is an architectural feature that adds air and light to the main train concourses and train platforms. It enhances passenger and visitor experience and is a common feature at large train stations across the world. The Proponents initially identified four train hall options.
122 1 123 124	<ul> <li>Parking: Parking at WUS serves Amtrak and bus passengers, WUS users, and car rental companies. The Project Proponents initially identified and evaluated eleven options for a new parking facility, including five off-site options.</li> </ul>
125 126 127 128 129 130	Concourses and Retail: Concourses provide circulation space for passengers as well as room for retail, which contributes revenue for WUS maintenance and operations. Circulation space and retail opportunities in concourses enhance passenger experience. The Project Proponents initially identified and evaluated ten concourse options. Ultimately, they developed a single concourse option featuring two east- west and two north-south concourses.
131 132 133 134 135 136	For-Hire Vehicles: For-hire vehicle facilities provide WUS users and visitors with a range of transportation options. The Project concepts to incorporate for-hire vehicles included pick-up and drop-off areas at the front of the historic station; in an underground facility; on the same level as H Street NE; and on First and 2nd Street NE. The Proponents identified and evaluated 17 options for pick-up and drop-off areas.
137 138 139 140 141 142	Bicycle and Pedestrian Access: Ensuring quality bicycle and pedestrian access is essential for a multimodal facility in an urban environment. All concepts and alternatives the Project Proponents envisioned included enhancements to bicycle and pedestrian access to, and circulation within, WUS as well as new opportunities for bicycle parking. The Proponents identified and evaluated six new entrances to WUS.

### ES.7.2 Concept Development

143During the Concept Development step, the Project Proponents developed a total of 18144preliminary concepts by variously combining the eight Program Elements. All preliminary145concepts had elements in common, including preservation of the historic station, the new146tracks and platforms, and the new concourses. The Proponents evaluated the concepts based147on feasibility and whether they would help achieve a set of design goals derived from the148Project's Purpose and Need.

FRA retained nine preliminary concepts for further consideration. The nine eliminated
 preliminary concepts included below-grade tracks that Amtrak determined it did not need to
 meet its operational requirements. All preliminary concepts required placement of some
 Program elements within the privately owned air rights.

### ES.7.3 Concept Screening

- 153In the Concept Screening step, FRA put the preliminary concepts through a screening process154based on the Project's Purpose and Need. FRA first determined that the nine preliminary155concepts recommended in the report were reasonable and feasible. Then, FRA conducted an156initial assessment of whether each concept would meet the Purpose and Need. The157assessment was based on a "yes or no" review of whether, at a minimum, the concepts158addressed the different aspects of the Purpose and Need. FRA found that all the concepts159met the Purpose and Need.
- 160Following this initial review, FRA further assessed the nine preliminary concepts for the161degree to which they would meet the Purpose and Need. For this assessment, FRA developed162and used the following set of screening criteria:
  - Provide Needed Platform/Rail Capacity and Rail Operational Requirements;
  - Achieve compliance with the ADA and emergency egress requirements;
  - Meet Future Multimodal Capacity Needs;
    - Meets Operational Needs of Multimodal Facilities and Minimizes Impacts on Roadways;
  - Improves Internal Circulation;
    - Supports quality of Train Hall Experience and Quality of Concourse Experience;
    - Enhances Integration with Adjacent Businesses, Neighborhoods, and Future Land Uses;
      - Sustains the Station's Economic Viability;
  - Preserves and Maintains the Historic Union Station Building and Urban Environment; and

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• Offers Ease of Construction and Maintains Station Operations During Construction.

FRA presented the preliminary screening results to members of the public, cooperating 176 agencies<sup>4</sup> and interested agencies<sup>5</sup> in a series of meetings held in October 2016. When 177 identifying the concepts that it would retain for further refinement, FRA considered the 178 comments received in those meetings and during a comment period that ended on 179 November 6, 2016. Members of the public, cooperating agencies, and interested agencies 180 provided comments on the preliminary concepts, including general opinions; preliminary 181 discussion of the concepts' potential environmental impacts; and suggestions for approaches 182 that FRA and the Proponents may not have considered. Public and agency input yielded 183 suggestions that called for further investigation during the Concept Refinement and 184 Alternatives Refinement steps. 185

186Based on the result of the Concept Screening step, FRA retained five concepts for further187refinement and evaluation of their suitability for analysis in the DEIS. FRA evaluated the188concepts holistically and selected the concepts it would retain based on their average189performance under the different criteria.

### ES.7.4 Concept Refinement

- During the Concept Refinement step, FRA worked with the Project Proponents to refine the 190 191 five retained concepts and address public and agency comments. In addition, FRA analyzed some of the suggestions and issues put forth by the public, agencies, and Project Proponents 192 during Concept Screening. Using the same approach as for the initial nine preliminary 193 concepts, the agency assessed new suggestions for feasibility, reasonableness, and 194 compatibility with the Project's Purpose and Need. As a result of Concept Refinement, FRA 195 eliminated one of the five retained concepts and modified the other four by reducing the size 196 of the bus and parking elements. 197
- 198Upon completion of Concept Refinement step, FRA decided that the four remaining concepts199would move forward into the Alternative Refinement step as preliminary alternatives.

### **ES.7.5** Alternatives Refinement

- 200During the Alternatives Refinement step, the Project Proponents, with support from FRA,201further developed the preliminary alternatives to better address issues raised by agency and202public comments and to advance the quality of the design of the Action Alternatives. The203Project Proponents and FRA investigated the following topics:
  - Cost and Constructability;

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<sup>&</sup>lt;sup>4</sup> See **Section ES.15.1**, What are the Cooperating Agencies?

<sup>&</sup>lt;sup>5</sup> See **Section ES.15.2**, *What are the Interested Agencies?* 

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Reduction of Amtrak's operational space; 205 Continued use of the existing WUS parking garage; 206 Traffic operations on H Street NE; 207 K Street Access and Operation; 208 Bicycle and Pedestrian Access; 209 Modification to the train hall; 210 Modifications to the parking garage and bus facility north of H Street; 211 Design refinement to enhance passenger experience; 212 Bus and other multimodal uses on First Street NE: 213 Columbus Circle Roadways modifications; and 214 WMATA Metrorail Station 215 To address some of the issues considered during the Alternatives Refinement step, FRA and 216 the Project Proponents made several changes to the preliminary alternatives. These 217 included: a set of air conditioning strategies for the train hall and concourses; multimodal 218 access and circulation design refinement; and reductions in the amount of below-ground 219 construction. 220 At the conclusion of this step, FRA identified five Action Alternatives (Alternative A through E) 221 that would be analyzed in the DEIS. Alternative C had two options (East Option and West 222 Option) depending on the location of the bus facility and above-ground parking facility on the 223 east or west side of the rail terminal. All five Action Alternatives would place some Project 224 elements on an overbuild deck in the air rights above the rail terminal. FRA shared the Action 225 Alternatives, as well as the No-Action Alternative, with the agencies and the public in March 226 2018. 227

### ES.7.6 Further Alternatives Refinement

After the March 2018 presentation of the DEIS alternatives, FRA analyzed their 228 environmental impacts and continued constructability analysis and coordination with 229 stakeholders and agencies. The initial results of the impacts analysis and stakeholders and 230 agencies coordination indicated that the following issues warranted further consideration: 231 232 Excavation depth and complexity of construction; Location of the intermodal uses relative to the historic station building; 233 Traffic operations on the H Street Bridge and the public street network; 234 Impacts to the privately owned air rights above the rail terminal; and 235 Quality of the urban setting at the deck level. 236 

- 237Based on coordination with DDOT about traffic operations on the H Street Bridge, FRA and238the Proponents investigated how the different vehicular modes serving WUS would circulate239on the deck-level roads connecting to H Street NE. To improve operations on the bridge,240DDOT recommended that WUS adopt, to the extent possible, a one-way circulation pattern241on the deck, with as few left-turning movements in and out of H Street as possible. This242recommendation was incorporated into Alternatives A through E.
- 243 Further, after reviewing the major elements of each Action Alternative – including below-and above-ground parking, train hall, and bus facility – in the light of the five issues identified 244 above, the Project Proponents and FRA developed an additional Action Alternative, 245 Alternative A-C. This alternative, which would combine elements of Alternative A (bus facility 246 and above-ground parking combined into a multimodal surface transportation center located 247 to the southwest of the H Street Bridge; no below-ground parking) and Alternative C (east-248 west train hall) would effectively address each of the five issues. Consistent with the 249 screening process conducted for the other Action Alternatives, FRA determined that 250 Alternative A-C would meet the Project's Purpose and Need and retained it for analysis in the 251 DEIS along with Alternatives A through E. 252

### ES.8 What are the Alternatives Assessed in the DEIS?

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FRA identified six Action Alternatives for analysis in the DEIS along with the No-Action Alternative. This section provides a summary description of the seven alternatives.

### ES.8.1 No-Action Alternative

- NEPA requires considering a No Action Alternative, which is an alternative reflecting the
   conditions that would exist if the proposed action were not implemented The No-Action
   Alternative reflects the state of the environment in the absence of the Project in the planning
   horizon year of 2040. In the No-Action Alternative, many aspects of WUS would continue as
   at present, including:
  - Structures: No major new infrastructure would be built. Routine maintenance and repairs would continue.
  - Mix of Uses: The current mix of uses at WUS would continue, including approximately 208,000 square feet of retail space, 120,000 square feet of office space, and 85,600 square feet of Amtrak support areas.
- Parking: Parking would remain southwest of H Street NE within the existing garage, capable of accommodating around 2,450 cars. Access to the garage would continue to be from H Street NE (west intersection) and Columbus Circle (east ramp). Exit would continue to be through H Street NE via the west intersection and through the ramp running parallel to First Street along the west side of the station (west ramp).

270	Buses: There would continue to be 61 bus spaces in the existing bus facility
271	southwest of H Street NE, below the parking garage. Buses would continue to enter
272	the facility via the H Street west intersection and to exit through the bus-only exit
273	ramp to H Street NE.
274	■ For-Hire Vehicles/Pick-up and drop-off: Taxis would continue to have approximately
275	24 spaces, distributed across the two northernmost lanes of Columbus Circle, for
276	pick-up and drop-off. Non-taxi for-hire vehicles would continue to share with private
277	vehicles the approximately 24 spaces available in the two southernmost traffic lanes
278	of the circle.
279	<ul> <li>Bicycles: Bikeshare facilities would remain on the east side of WUS at F Street NE,</li> </ul>
280	with 54 bikeshare spaces. The bicycle station parking facility in the southwest would
281	continue to offer around 100 bicycle parking spaces.
282	Pedestrians: Pedestrians would continue to enter or exit WUS via the WMATA
283	Metrorail First and G Street entrances, the southwest portico and front of the historic
284	station building, and the bus facility.
285	Intercity and Commuter Operations and Ridership: Operations by Amtrak, VRE, and
286	MARC as well as intercity bus companies would continue but with increased
287	passenger volumes and levels of service as shown in <b>Table ES-1</b> . Growth would be
288	constrained by the lack of infrastructure improvements. The ridership and service
289	increases in <b>Table ES-1</b> represent the growth possible without the improvements
290	proposed in the Action Alternatives.

Service	Existing Passenger Volumes	2040 Passenger Volumes	Volume Increase over Existing	
Amtrok	16,400 daily	21,800 daily (+33%)	+2/10/	
Amtrak	5.033 million annually	6.694 million annually	+2470	
MARC	28,100 daily	37,930 daily (+35%)	<b>±11%</b>	
WARC	7.683 million annually	9.483 million annually	+11/0	
VDE	3,900 daily	4,900 daily (+26%)	+6%	
VNE	1.060 million annually	1.378 million annually	+076	
14/N/AATA	29,000 daily boardings	43,800 daily boardings (+51%)	+00/6	
WWATA	7.250 million annual boardings	10.950 million annual boardings	+076	
Intercity	10,000 daily	12,700 daily (+27%)	. 270/	
Bus	2.500 million annually	3.175 million annually	TZ / 70	

<sup>&</sup>lt;sup>6</sup> Operationally, based on information from WMATA, it is expected that in 2040, trains would continue to serve the WUS WMATA station with the same frequency as today, including every three minutes during the peak periods. However, it is anticipated that all peak-period trains on the Red Line would be eight-car trains, increasing overall capacity.

291 292	The No-Action Alternative would further include the following projects, which are all independent of the Project and have anticipated completion dates earlier than 2040:
293	<ul> <li>Twenty near-term station and track improvement projects at WUS, including but</li> </ul>
294	not limited to, the Concourse Modernization Project, which would fully renovate the
295 296	ADA-compliance improvements; and track electrification and rehabilitation work.
297	<ul> <li>VRE Midday Storage Replacement Facility Project: The VRE Midday Storage</li> </ul>
298	Replacement Facility Project would replace the current storage space leased from
299	Amtrak at the Ivy City Coach Yard in the District.
300	<ul> <li>H Street Bridge Replacement: DDOT is planning to replace the H Street Bridge</li> </ul>
301	because the deck is reaching the end of its useful life.
302	<ul> <li>DC Streetcar Extension: The current DC Streetcar line, which runs from WUS to</li> </ul>
303	Benning Road NE and Oklahoma Avenue NE is programmed for extension eastward
304	and westward. As part of this expansion, the construction of a new streetcar stop
305	and the realignment of tracks on the H Street Bridge to accommodate the western
306	extension would take place within the Project Area.
307	<ul> <li>WMATA Station Improvements: WMATA would expand and relocate the First Street</li> </ul>
308	entrance to the North Mezzanine of the Union Station Metrorail Station. A new ramp
309	would be outside of the station, above the First Street sidewalk. Moving the ramp
310	outside would make room for additional fare gates and circulation space inside.
311	<ul> <li>Private Air-rights Development: This project would be a mixed-use development in</li> </ul>
312	the private air rights above the WUS rail terminal. Total development would be
313	approximately 3.7 million square feet of residential, hotel, office, and retail uses.
314	Development would be in accordance with the existing zoning designation for the
315	private air-rights area.
316	The No-Action Alternative would not meet the Project's Purpose and Need. It would not
317	adequately support current and future long-term growth in rail service and operational
318	needs; fail to achieve compliance with the ADA; and cause a deterioration in customer
319	experience rather than facilitate intermodal travel.

<sup>&</sup>lt;sup>7</sup> Built in 1980, the Claytor Concourse is located immediately to the north of the historic station building. It provides access to the tracks and platforms, the Metrorail Station, the bus facility and parking garage, and various passenger and visitor services and amenities, including waiting areas and retail and food outlets.

### **ES.8.2** Action Alternatives

### ES.8.2.1 Features Common to All Action Alternatives

All six Action Alternatives would include the features described in Sections ES.8.2.1.1 through ES.8.2.1.6 below. Sections ES.8.2.2 through ES.8.2.7 present the features specific to each Action Alternative.

### **Tracks and Platforms**

- In all Action Alternatives, the new tracks would replace the existing tracks with 19 new
- tracks: 12 stub-end tracks on the west side of the rail terminal and 7 run-through tracks on
- the east side. New platforms would be 30 feet wide. The stub-end platforms would be at the
- same elevation as Concourse A, allowing direct access for passengers coming in through the
- southern end of the station. The run-through platforms would be at a lower elevation.
- Passengers would reach them via vertical circulation elements (such as stairs, escalators, or
- elevators). Figure ES-4 shows the proposed new tracks and platforms.



Figure ES-4. New Tracks and Platforms in All Action Alternatives

- Construction of the new tracks and platforms would require reconfiguring the portion of the First Street Tunnel under the east side of the historic station building, where the run-through
- tracks converge toward the two-track portion of the tunnel. To accommodate the new track
- alignments, 18 of the 28 building-supporting columns that currently extend from the track
- bed to the floor of the Retail and Ticketing Concourse would have to be removed.

### Loading

The two existing loading docks would continue to support the unloading and distribution of goods at WUS. Additionally, a new loading dock would be provided on 2nd Street NE, adjacent to the Railway Express Agency (REA) Building. Users of the new loading dock, which would have approximately 12 slips, may include new retail and Amtrak back of house services.

### Concourses

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In all Action Alternatives, the following new concourses would facilitate public access to and
 circulation through WUS:

- Concourse A: This east-west concourse, replacing the current Claytor concourse, would connect directly to the existing Retail and Ticketing Concourse and the stubend platforms. Vertical station elements would connect to upper level of Concourse A to the lower-level concourses.
  - Central Concourse: This north-south concourse would connect Concourse A to the H Street Concourse.
  - H Street Concourse: This east-west concourse would run below H Street NE and provide access to WUS and the platforms from the north. It would connect the neighborhoods east and west of WUS with entrances at First Street NE and 2nd Street NE. Vertical circulation elements would bring people up to H Street NE.
  - First Street Concourse: This north-south concourse would run parallel to First Street NE and connect the H Street Concourse to Concourse A and the Metrorail station.

354Figures ES-5 and ES-6 illustrate the proposed new concourses. The concourses would355connect the various transportation modes serving the station, including the train platforms,356the bus facility, the Metrorail station, and the DC Streetcar. Additionally, they would offer357various services and amenities. These may include information, ticketing, and baggage358services. Waiting areas would provide secure and organized access to the platforms. Retail359would be available for passengers and visitors circulating through the station.

#### DRAFT ENVIRONMENTAL IMPACT STATEMENT





#### Figure ES-5. Upper-Level Concourse in All Action Alternatives

Figure ES-6. Lower-Level Concourses in All Action Alternatives





#### **Pedestrian Access**

All the Action Alternatives would provide new pedestrian entrances to WUS from First Street 360 NE, 2nd Street NE, and the H Street Bridge into the H Street Concourse. The existing 361 entrances to the WMATA Metrorail station would remain available, as would the existing 362 access points to WUS from the front of the station. At that location, all Action Alternatives 363 would improve pedestrian circulation by realigning roadways and sidewalks as shown in 364 Figure ES-7a (for Alternatives A through E) and ES-7b (for Alternative A-C). Instead of four 365 crosswalks today, pedestrians reaching WUS from the west side of First Street NE would only 366 have to cross one. This would be achieved by turning First Street NE from a two-way road 367 into a northbound, one-way street, eliminating the right-turn lane and station ramp to 368 Massachusetts Avenue. 369

#### **Bicycle Access**

All Action Alternatives would provide additional bicycle accommodations at WUS, including approximately 105 new Bikeshare spots and storage capacity for approximately 200 bicycles. These new facilities would be located near the new pedestrian entrances on First, 2nd, and H Street NE. The First Street cycle track would remain on the east side of the street.

#### Figure ES-7a. Proposed Pedestrian Access Changes in Front of WUS Alternatives A through E





#### Figure ES-7b. Proposed Pedestrian Access Changes in Front of WUS Alternative A-C

### **Pick-up and Drop-off Areas**

All Action Alternatives would improve the existing six lanes of traffic on the north side of Columbus Circle in front of WUS currently used for pick-up and drop-off. The six lanes would remain but the hop-on/hop-off sight-seeing buses currently using the two central lanes would move to G Street NE, making the four southernmost lanes available for non-taxi pickup and drop-off. Taxis would continue to have the exclusive use of the two northernmost lanes as they do now. Taxis would also continue to use the east ramp to reach the front of WUS.

All Action Alternatives would also change the circle's approaches. Adding a third lane to the 381 approach from First Street NE to the south and central lanes would minimize queuing. 382 Modification of the east ramp to allow southbound traffic only would minimize queuing from 383 H Street NE and provide an exit from the ramp to F Street NE. The connection for vehicles 384 traveling northbound from Massachusetts Avenue NE and Columbus Circle to F Street NE 385 would stay as it is now. However, on the left side of that segment, there would be two pick-386 up/drop-off spaces for use by WUS commercial tenants. Figure ES-8 illustrates these 387 improvements. 388

389	New spaces for pick-up and drop-off would be provided along First Street NE in two
390	segments to the south (approximately from G Street to H Street) and north (from H Street to
391	I Street) of the new H Street Concourse entrance, respectively. Each segment would be
392	capable of accommodating approximately 15 vehicles. The conversion of First Street to one-
393	way northbound would ensure that pick-up and drop-off activities are on the same side of
394	the street as the WUS entrance, reducing the potential for conflicts with pedestrians and
395	bicycles. The First Street drop-off and pick-up area could also accommodate buses if needed.
396	All Action Alternatives would provide additional pick-up and drop-off space on the deck next
397	to the new train hall and on 2nd Street NE. Just south of the H Street Bridge, a pick-up and
398	drop-off lane with room for approximately seven vehicles would be provided on the west
399	(southbound) side of the street through lane shifting, restriping, and potentially a slight
400	narrowing of the sidewalk at that location. Just north of the H Street Bridge, portion of the
401	existing parking lane on the east (northbound) side of the street would be converted to a
402	pick-up and drop-off lane for approximately eight vehicles.







### **Intercity and Commuter Operations and Ridership**

403In all Action Alternatives, the Project would allow intercity, commuter and transit passenger404volumes to grow as shown in **Table ES-2**. The greatest increase would be for VRE, with a 187405percent increase in train volumes accommodating an almost 250 percent increase in406passengers. Amtrak and MARC would also experience substantial increases in passenger and407train volumes.

Service	Existing Passenger Volumes	2040 Passenger Volumes	Train or Bus Volume Increase over Existing
Amtrok	16,400 daily	32,000 daily (+95%)	+1/0%
AIIIIIdk	5.033 million annually	9.070 million annually	+14070
MARC	28,100 daily	70,700 daily (+151%)	+162%
IVIANC	7.683 million annually	19.293 million annually	+10370
	3,900 daily	13,600 daily (+249%)	+1970/
VKE	1.060 million annually	3.706 million annually	+10770
\A/N/AATA	29,000 daily boardings	43,800 daily boardings (+51%)	+0%8
WIVIAIA	7.250 million annual boardings	10.950 million annual boardings	+070
	10,000 daily	11,900 daily (+19%)	100/
intercity Bus	2.500 million annually	2.975 million annually	+19%

#### Table ES-2. Passenger and Train Volumes by Service, All Action Alternatives

Each full day, Amtrak would operate 57 high-speed trains per direction, 23 intercity trains per direction, and 6 long distance trains per direction. Additionally, Amtrak would run 58 Metropolitan trains per direction. MARC full-day service would consist of 57 Penn Line trains, 30 Camden Line trains, and 38 Brunswick Line trains per direction. Of 14 peak-hour Penn Line trains, it is anticipated that eight would continue to Virginia. For VRE, daily, 23 trains per direction would run on the Fredericksburg Line and 23 trains per direction would run on the Manassas Line.

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<sup>&</sup>lt;sup>8</sup> It is expected that in 2040, trains would continue to serve the WUS WMATA station with the same frequency as today, including every three minutes during the peak periods, and it is anticipated that all peak-period trains on the Red Line would be eight-car trains.

#### DRAFT ENVIRONMENTAL IMPACT STATEMENT

### ES.8.2.2 Alternative A



Along with the features common to all Action Alternatives, Alternative A would include:
<ul> <li>A north-south train hall approximately 180,000 square feet in size over part of the</li> </ul>
three centrally located platforms between H Street NE and the south end of the
tracks.
<ul> <li>Approximately 280,000 square feet of total retail space and an approximately</li> </ul>
297,400-square-foot Amtrak support area.
<ul> <li>Parking for approximately 1,750 cars in a new above-ground facility combined with</li> </ul>
the bus facility below it into a multimodal surface transportation center, located
where the existing WUS parking garage stands.
A 26-slip bus facility below the parking facility in the multimodal surface
transportation center. Buses would enter and exit via intersections on the west side
of H Street NE.
<ul> <li>Three new deck-level roadways south of the H Street Bridge (southwest, center, and</li> </ul>
southeast roads) and three new intersections (west side, center, and east
intersections). WUS-related traffic would move in a one-way, counterclockwise
pattern across the deck. Cars would access the parking facility via the west
intersection. Car access to the deck-level pick-up and drop-off area would be via the

432	center intersection, traveling southbound down the center road. From there, cars
433	could return to H Street NE by traveling northbound along the southeast road. To the
434	south, they could exit via the modified east ramp toward F Street NE or the front of
435	WUS (taxis only). Traffic from the west intersection or parking facility would exit to
436	the south through the existing west ramp southbound toward First Street NE. Buses
437	would enter the bus facility via the west intersection and leave via a dedicated, right-
438	turn only ramp just to the east of this intersection.
439	In Alternative A, approximately 3.1 acres of private air rights would be acquired for various
440	Project Elements. Approximately 323,720 square feet of Federally owned air rights would be
441	available for potential development.



#### **Alternative B** ES.8.2.3

442	Along with the features common to all Action Alternatives, Alternative B would include:
443	<ul> <li>A north-south train hall approximately 180,000 square feet in size over part of the</li> </ul>
444	three centrally located platforms between H Street NE and the south end of the
445	tracks.
446	<ul> <li>Approximately 280,000 square feet of total retail space and an approximately</li> </ul>
447	297,400-square-foot Amtrak support area.

448 449	<ul> <li>A new below-ground, two-level parking facility located along the west side of the rail terminal. The new parking facility would provide approximately 2,000 spaces.</li> </ul>
450	<ul> <li>A 26-slip bus facility located where the existing bus facility and parking garage stand.</li> </ul>
451	<ul> <li>Deck levels roadways, intersections, and circulation would be as in Alternative A.</li> </ul>
452	Additionally, access to the below-ground parking facility would be through a new
453	portal and intersection in the K Street Underpass, between First and 2nd Streets NE.
454	In Alternative B, approximately 2.8 acres of private air rights would be acquired for various
455	Project Elements. Approximately 917,420 square feet of Federally owned air rights would be
456	available for potential development.



### ES.8.2.4 Alternative C, East Option

457	Along with the features common to all Action Alternatives, Alternative C, East Option would
458	include:
459	An east-west train hall approximately 115,000 square feet in size that would cover
460	the train engines and part of the first car on all tracks.
461 462	<ul> <li>Approximately 280,000 square feet of total retail space and an approximately 297,400-square-foot Amtrak support area.</li> </ul>
463	Parking for approximately 750 cars in an above-ground facility located to the
464	northeast of the H Street Bridge, above the hus facility and parking for approximately
465	900 cars in a one-level below-ground facility.
466	A 17-slip bus facility below the above-ground parking facility and a nine-slip bus pick-
467	up and drop-off area just south of the new train hall. Access would be via H Street
468	NE.
469	<ul> <li>Two new deck-level roadways (southeast and southwest roads) south of the H Street</li> </ul>
470	Bridge and two new intersections (west and east intersections), along with a new
471	east-west road parallel to the train hall. WUS-related traffic would move in a one-
472	way, counterclockwise pattern across the deck, entering from H Street NE via the
473	west intersection, traveling southbound along the southwest road, eastbound along
474	the east-west road, and northbound along the southeast road to exit back to H Street
475	NE. To the south, cars could continue from the southwest road to First Street NE via
476	the west ramp. From the east-west road, they could use the east ramp to reach F
477	Street NE or the front of WUS (for taxis). Buses making use of the bus pick-up and
478	drop-off area would enter from H Street NE via the west intersection and southwest
479	road, loop clockwise around the train hall, and return to H Street via the southeast
480	road and east intersection. Access to the bus facility and above-ground parking
481	facility would be directly off H Street via the east intersection. Access to the below-
482	ground parking would be via a new intersection and portal on K Street NE, as in
483	Alternative B.
484	In Alternative C, East Option, approximately 4.6 acres of private air rights would be acquired
485	for various Project Elements. Approximately 952,600 square feet of Federally owned air
486	rights would be available for potential development. <sup>9</sup>

<sup>&</sup>lt;sup>9</sup> For Alternatives C, D, E, and A-C, FRA and the Proponents delineated areas designated as Visual Access Zone and Daylight Access Zone. The Daylight Access Zone is the general area where daylighting features needed for the Central Concourse, such as skylights, may be established through agreement with the private air-rights developer. Such features would only use a portion of the Daylight Access Zone. The Visual Access Zone is the general location where the private air-rights developer could provide a visual connection from H Street to the new train hall and station. The Visual Access Zone may be centered on the historic station building. In Alternatives C, D, and E, the access zones are located within the private air rights. They are not part of the Project but the Project would not preclude them from being developed as part of the private air-rights development.

#### DRAFT ENVIRONMENTAL IMPACT STATEMENT



### ES.8.2.5 Alternative C, West Option

487 488	Alternative C with the West Option would be the same as Alternative C with the East Option, with the following exceptions:
489	The West Option would place the new bus facility and above-ground parking facility
490	to the northwest of the H Street Bridge.
491	<ul> <li>The bus facility to the northwest of the H Street Bridge would have 19 slips.</li> </ul>
492	<ul> <li>The above-ground parking facility would have space for approximately 710 cars.</li> </ul>
493	<ul> <li>Access to the above-ground parking facility and bus facility would be via the west</li></ul>
494	intersection.
495	<ul> <li>Approximately 4.8 acres of private air rights would be acquired for various Project</li></ul>
496	Elements.

#### DRAFT ENVIRONMENTAL IMPACT STATEMENT

### ES.8.2.6 Alternative D



497	Along with the features common to all Action Alternatives, Alternative D would include:
498	<ul> <li>An east-west train hall approximately 100,000 square feet in size that would cover</li></ul>
499	the train engines and part of the first car on all tracks.
500	<ul> <li>Approximately 308,000 square feet of total retail space and an approximately</li></ul>
501	297,400-square-foot Amtrak support area.
502	A new above-ground parking facility just south of K Street NE, with space for
503	approximately 750 cars and vehicular access via H Street NE; and a new below-
504	ground, one-level parking facility capable of accommodating approximately 900 cars.
505	<ul> <li>A 27-slip bus facility integrated with the train hall. Buses would enter the facility from</li></ul>
506	H Street NE and loop back to H Street NE to exit.
507 508	New deck-level roadways south and north of the H Street Bridge (southwest, northwest, southeast, and northeast roads) and two new intersections (west and the strength of t
509	east intersections), along with an east-west road parallel to the train hall. WUS-
510	related traffic would move in a one-way, counterclockwise pattern across the deck.
511 512	Cars and buses would use the southwest road to reach the east-west road and bus facility. Cars could continue to First Street NF via the west ramp. Buses would loop
513	clockwise around the bus facility and exit back to H Street NE via the southeast road

514	and east intersection. Cars could do the same or exit south via the east ramp toward
515	F Street NE or the front of WUS (for taxis). North of H Street, parking users would
516	reach the parking facility via the east intersection and northeast road northbound.
517	Exiting, they would return to H Street via northwest road southbound and the west
518	intersection. Access to the below-ground parking would be via a new intersection
519	and portal on K Street NE, as in Alternative B.
520	In Alternative D, approximately 4.8 acres of private air rights would be acquired for various
521	Project Elements. Approximately 688,050 square feet of Federally owned air rights would be
522	available for potential development.



### ES.8.2.7 Alternative E

523	Along with the features common to all Action Alternatives, Alternative E would include:
524	<ul> <li>An east-west train hall approximately 100,000 square feet in size that would cover</li></ul>
525	the train engines and part of the first car on all tracks.
526	<ul> <li>Approximately 308,000 square feet of total retail space and an approximately</li></ul>
527	297,400-square-foot Amtrak support area.
528	<ul> <li>A new below-ground, two-level parking facility located along the west side of the rail</li></ul>
529	terminal. The new facility would provide space for approximately 2,000 cars.

530	<ul> <li>A 27-slip bus facility integrated with the train hall.</li> </ul>
531	<ul> <li>Deck-level roadways, intersection, and circulation be as in Alternative D on the south</li> </ul>
532	side of the H Street Bridge. There would be no WUS-related roadways or traffic north
533	of H Street. Below-ground parking access would from K Street NE, as in Alternative B.
534	In Alternative E, approximately 1.9 acres of private air rights would be acquired for various
535	Project Elements. Approximately 688,050 square feet of Federally owned air rights would be
536	available for potential development.

## Private Air-Rights Development Potential Federal Air-Rights Development Above-Ground Parking Facility **Bus Facility** Daylight Visu Access Zor Train Hall ess Z Federal Air Rights Street NE Historic Station Building First Street NE Columbus Columbus Plaza ٢ For illustrative purposes only

ES.8.2.8 Alternative A	-C
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537	Along with the features common to all Action Alternatives, Alternative A-C would include:
538	<ul> <li>An east-west train hall approximately 113, 500 square feet in size. Track and platform</li></ul>
539	ends would remain outside the train hall.
540	<ul> <li>Approximately 280,000 square feet of total retail space and an approximately</li></ul>
541	297,400-square-foot Amtrak support area.
542	<ul> <li>Parking for approximately 1,600 cars in a new above-ground facility combined with</li></ul>
543	the bus facility below it into a multimodal surface transportation center, located
544	where the existing WUS parking garage stands.
transportation center. The bus facility would be capable of accommodating 40 bus	
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slips (20 per level). If not needed for buses, the second level could potentially be	
used for other activities such as for-hire and private pick-up and drop-off.	
<ul> <li>Two new deck-level roadways (southeast and southwest roads) south of the H Street</li> </ul>	
Bridge and two new intersections (west and east intersections), along with a new	
east-west road parallel to the train hall. WUS-related traffic would move in a one-	
way, counterclockwise pattern across the deck. Buses would reach the bus facility via	
the west intersection and the southwest road. They would exit via a right-turn only	
ramp directly onto H Street. Cars would reach the deck, parking garage, and pick-up	
and drop-off area by traveling either southbound along the southwest road from H	
Street or northbound via the west ramp from First Street. They would exit via either	
the southeast road northbound to H Street NE or the east ramp southbound to F	
Street NE or the front of WUS (for taxis).	
In Alternative A-C, approximately 1.1 acres of private air rights would be acquired for various	
Project Elements. Approximately 380,000 square feet of Federally owned air rights would be	
available for potential development. <sup>10</sup>	

# ES.9 How Would the Project be Constructed?

#### **ES.9.1** Phasing and Duration

In all Action Alternatives, construction would proceed from east to west in four sequential 562 phases. Each phase's width would be determined by the need to provide adequate space for 563 construction and by the maximum number of tracks that can be removed while still 564 maintaining adequate rail operations. The minimum average phase width would be 565 approximately 90 feet. The construction sequence would be generally the same in each 566 phase. A set of tracks would be taken out of service. Temporary tracks and connections 567 would be constructed as needed to help maintain operations and potentially support the 568 operation of work trains. Cut-off and support walls would be installed, as needed, to support 569

<sup>&</sup>lt;sup>10</sup> For Alternative A-C as for Alternatives C, D, and E, FRA and the Proponents delineated areas designated as Visual Access Zone and Daylight Access Zone. The Daylight Access Zone is the general area where daylighting features needed for the Central Concourse, such as skylights, may be established through agreement with the private air-rights developer. Such features would only use a portion of the Daylight Access Zone. The Visual Access Zone is the general location where the private air-rights developer could provide a visual connection from H Street to the new train hall and station. The Visual Access Zone may be centered on the historic station building. In Alternative A-C, the access zones would mostly be located within the private air rights. They are not part of the Project but the Project would not preclude them from being developed as part of the private air-rights development. The southern end of the Visual Access Zone, just north of the new train hall and historic station building, would be within the federally owned air rights. Neither the Project nor the potential federal air-rights development would create an obstruction in that part of the Visual Access Zone that might preclude the private air-rights development would create an obstruction from H Street to the new train hall and station.

# UNION STATION STATION EXPANSION

- excavation and keep groundwater out. Following excavation, drilled shafts would be
   constructed to provide deep foundations for the slabs supporting the new tracks and the
   columns supporting the deck on which the Project elements would stand. As construction
   moves to the next phase, the deck-level Project elements would be constructed.
- The First Street Tunnel column removal work (see Section ES.8.2.1, Features Common to All 574 Action Alternatives, Tracks and Platforms) would also take place in three sequential phases 575 576 from east to west and would largely overlap with the main construction effort. Each column removal phase would include: strengthening and modifying the structural connections of the 577 tunnel columns to be maintained; replacing or strengthening the overhead tunnel roof 578 beams to span across the gaps created by the removal and replacement of the existing 579 columns and crash walls; removing select existing columns and crash walls; finalizing tunnel 580 deck substructure improvements as needed; and shifting the tracks. 581
- Column Removal Phase 1 would take place during main construction Phase 1 and Column 582 Removal Phase 3 during main construction Phase 2. To maintain adequate levels of rail 583 service, Column Removal Phase 2 must start after main construction Phase 1 is complete and 584 be finished before main construction Phase 2 begins. Therefore, there would be a period – 585 anticipated to extend over approximately 12 months in all Action Alternatives - between 586 main construction Phase 1 and Phase 2 during which only column removal work would be 587 conducted. In Table ES-3, which shows the anticipated duration of construction for each 588 phase of each Action Alternative, this period of lower construction activity is designated as 589 the Intermediate Phase. 590

Table Lo of Estimated construction schedule per Action Attendance								
Phase	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative A-C		
Phase 1	2 years, 5 months	2 years, 5 months	2 years, 5 months	2 years, 5 months	2 years, 5 months	2 years, 5 months		
Intermediate Phase	12 months	12 months	12 months	12 months	12 months	12 months		
Phase 2	2 years, 5 months	3 years	2 years 2 yea 4 months 4 mon		3 years	2 years, 5 months		
Phase 3	2 years 6 months	3 years	2 years 6 months	2 years 6 months	3 years	2 years 6 months		
Phase 4	3 years 1 month	4 years, 11 months	4 years	4 years	4 years, 11 months	3 years 1 month		
Project Completion	11 years, 5 months	14 years, 4 months	12 years, 3 months	12 years, 3 months	14 years, 4 months	11 years, 5 months		

#### Table ES-3. Estimated Construction Schedule per Action Alternative

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# ES.9.2 Excavation and Spoil Removal

Construction of all the Action Alternatives would require excavating the stub-end portion of the rail terminal. The maximum depth of excavation would vary with the Action Alternative as shown in **Table ES-4.** 

Action Alternative	Depth below Existing Grade1	Elevation above Mean Sea Level
Alternative A	32	20
Alternative B	62	- 10
Alternative C	49	3
Alternative D	49	3
Alternative E	62	- 10
Alternative A-C	32	20

 Table ES-4. Approximate Depth of Excavation per Action Alternative (Feet)

1. Existing grade is approximately 52 feet above mean sea level

Walls would be needed to support the excavation and control groundwater seepage. The support of excavation (SOE) method would vary with the Action Alternative:

- Secant-pile cut-off wall for Alternatives A and A-C: Construction of these 596 alternatives would involve constructing an approximately 64-foot deep secant-pile 597 cut-off wall around the perimeter of the excavated portion of the rail terminal. 598 Secant-pile walls are made of intersecting reinforced concrete piles reinforced with 599 either steel rebar or steel beams. The piles are installed by drilling into the ground. 600 Slurry Cut-off Wall for Alternatives B and E: Construction of these alternatives would 601 involve building a slurry cut-off wall to a depth of 210-foot deep around the stub-end 602 track portion of the rail terminal. The slurry wall would reach down to the underlying 603 bedrock and would isolate the construction site from the underlying aguifers. 604 Constructing a slurry wall involves excavating a trench that is simultaneously filled 605 with a mix of bentonite and water (slurry), which keeps the trench from collapsing. 606 607 The trench is then filled with concrete from the bottom up after installation of reinforcing steel. The concrete displaces the slurry as the trench fills up and hardens 608 around reinforcement to form a structural wall. 609 Sheet-pile Cut-off Wall for Alternatives C and D: Construction of these alternative 610 would involve building a 100-foot deep sheet-pile cut-off wall around the stub-end 611 track portion of the rail terminal. This wall would reach down to the underlying 612 Potomac Clay layer. The wall would isolate the construction site from the underlying 613 upper aquifer. 614 615 The amount of excavation spoil to be removed from the Project Area would vary from approximately 1.16 million cubic yards in Alternatives A and A-C to 1.85 million cubic yards 616
- for Alternatives B and E. Removal of the spoil would be by trucks or work trains, or a combination of both. Removal by trucks only would require up to 120 truck trips a day spread



621

622

- 619over a 20-hour day, in addition to 10 to 20 truck trips for deliveries. Spoil removal by work620train would require two 20-gondola trains a day to transport the same amount as 120 trucks.
  - If used, the work trains would be scheduled in a manner that does not interfere or conflict with Amtrak, VRE, and MARC operations.

#### ES.9.3 Access and Staging

Figure ES-9 shows the five potential areas that would be used for construction site accessand staging.





62	525 The five	e staging areas are:
62	526	Access Ramp: The east loading dock access ramp and local roads (First Street, 2nd
62	527	Street, H Street) would serve as access points for personnel, minor equipment, and
62	528	limited material.
62	529	H Street Tunnel: The H Street Tunnel would serve as a major access point for all
63	530	phases of construction. It would serve as access for personnel, equipment, and
63	531	materials. After the completion of Phase 1, construction access would be at First
63	532	Street NE only.
63	533	West Yard: The west yard would serve as a major staging area for all phases. It would
63	534	be used for deliveries and potential excavation spoil removal by work trains. It may
63	535	also potentially serve as a location for the concrete batch plant.
63	536	REA Parking Lot: The REA Parking Lot would serve as a major access point during
63	537	construction for personnel, equipment, and materials. It may also serve as a
63	538	potential staging area for construction materials.

Train Access Area: This area would provide access for work trains during the
 construction period. Materials may be delivered and removed by train to reduce
 truck volumes during construction.

#### **ES.9.4** Station Access During Construction

642Construction activities would disrupt the various transportation modes serving WUS.643Operations would be maintained, as much as possible, to minimize disruptions to the644traveling public. The modes affected, and the level of disruption would vary with the phase.645The greatest level of disruption would occur during Phase 4, when the existing WUS parking646garage and bus facility would be demolished while the new facilities are not yet completed.

#### ES.9.5 Cost of Construction

647The cost of constructing each Action Alternative would vary mostly based on the depth of648excavation required and total duration. The size and complexity of the train hall would also649affect the cost of construction. Alternatives A and A-C would be the least costly and650Alternatives B and E the costliest Action Alternatives. Table ES-5 shows the estimated cost of651constructing each Action Alternative.

Alternative	Estimated Cost <sup>11</sup>
Alternative A	\$6.1
Alternative B	\$7.5
Alternative C	\$6.2
Alternative D	\$6.2
Alternative E	\$6.9
Alternative A-C	\$5.8

Table ES-5. Estimated Construction Cost per Action Alternative (\$ Billion)

# ES.10 What is the Preferred Alternative?

# **ES.10.1** Identification of the Preferred Alternative

652After carefully considering the Purpose and Need for the Project as well as stakeholder,653agency, and public input, FRA and the Project Proponents identified Alternative A-C as the654Preferred Alternative. Alternative A-C is best responsive to the full range of issues and655concerns raised during the development and preliminary analysis of the Action Alternatives

<sup>&</sup>lt;sup>11</sup> Cost estimates are in "today's dollars." They include escalation.

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656	and it meets the Project's Purpose and Need as well as or better than the other Action							
657	Alternatives.							
	Alternative A-C would:							
658	<ul> <li>Minimize depth and complexity of construction by placing all parking and pick-</li> </ul>							
659	up/drop-off areas above ground and requiring no significant excavation below the							
660	concourse level.							
661	<ul> <li>Keep intermodal uses close to the main station.</li> </ul>							
662	<ul> <li>Minimize operational traffic impacts on the H Street Bridge and surrounding public</li> </ul>							
663	street network by including one-way deck circulation, deck access from the south,							
664	and no parking entrance on K Street NE.							
665	<ul> <li>Make optimal use of the Federal air rights and minimize impacts on the private air</li> </ul>							
666	rights.							
667	Enhance the urban setting at deck level by aligning the multimodal surface							
668	transportation center with the western edge of the historic station building and							
669	enhancing commercial development opportunities around the bus facility.							
670	<ul> <li>Reduce overall project costs and risk with a flexible and compact above-ground bus</li> </ul>							
671	and parking facility, and efficient train hall layout.							

# ES.10.2 Public and Agency Coordination

FRA and the Project Proponents presented the Preferred Alternative to DDOT on October 25,
2019 and to the Commission of Fine Arts (CFA) during a public information meeting on
November 21, 2019. On January 9, 2020, the National Capital Planning Commission (NCPC)
reviewed and commented on Alternative A-C at a Concept Review Hearing. The Preferred
Alternative was made public on the Project website in December 2019.<sup>12</sup>

In response to comments from CFA and NCPC and to public input, FRA and the Project 677 Proponents coordinated with DDOT and the District of Columbia Office of Planning (DCOP) to 678 review the parking program in light of the Project's Purpose and Need, Union Station 679 Redevelopment Act of 1981 (USRA) requirements, <sup>13</sup> NEPA standards based on best available 680 scientific information, and the District's applicable parking policies. This coordination was 681 conducted through a Parking Working Group comprised of representatives of DDOT, DCOP, 682 NCPC, FRA, and the Project Proponents. The Parking Working Group met several times 683 between February and April 2020. In the Parking Working Group meetings, FRA and USRC 684 685 provided information supporting the 1,600-space parking program used for the development of the DEIS Action Alternatives, including Alternative A-C. DDOT and DCOP staff 686

<sup>13</sup> Public Law 97-125. The USRA governs the conditions under which WUS is managed.

<sup>&</sup>lt;sup>12</sup> <u>https://railroads.dot.gov/current-environmental-reviews/washington-union-station-expansion-project/alternative-c-preferred.</u>

687	recommended a smaller program. After considering the District's proposed parking program,
688	FRA determined that the best information currently available does not warrant a further
689	reduction of the Project's parking program at this time. The parking program used to develop
690	the Action Alternatives is consistent with the USRA and supported by analysis conducted to
691	support the NEPA review. The Action Alternatives with this program support the Project's
692	Purpose and Need by maintaining full multimodal functionality at WUS and a reliable source
693	of commercial revenue for the preservation of the historic station building. FRA recognizes
694	the substantial interest in the amount of parking included in the Project. Therefore, FRA
695	specifically seeks public comment about the parking program for FRA to consider.

# **ES.11** What Would be the Impacts of the Alternatives?

# **ES.11.1** Definitions

696	To comply with NEPA and the Council on Environmental Quality (CEQ) Implementing
697	Regulations for NEPA, the DEIS identifies the direct, indirect, and cumulative effects the
698	Project could have on the human and natural environment. The DEIS also identifies measures
699	to avoid, minimize, or mitigate potential adverse impacts.
700	The CEQ's Implementing Regulations for NEPA and Forty Most Asked Questions provide the
701	following key definitions:
702	<ul> <li>Direct impacts result from the action and occur at the same time and place.</li> </ul>
703	<ul> <li>Indirect impacts result from the action and are later in time or farther removed in</li> </ul>
704	distance but are still reasonably foreseeable.
705	Impacts may vary with regard to their duration, context and intensity, and outcome:
706	<ul> <li>Duration: The impact analyses for each alternative address operational impacts and</li> </ul>
707	construction impacts. Operational impacts are long-term or permanent impacts
708	associated with the operation of the Project. They would occur for the foreseeable
709	future. Construction impacts are associated with the construction phase of the
710	Project and would stop with the completion of construction activities. In that sense,
711	they are short-term or temporary impacts.
712	<ul> <li>Context and Intensity: Depending on the nature of the topic, relevant contexts</li> </ul>
713	include society as a whole, the affected region, the affected interests, or the locality.
714	Intensity refers to the severity of impact. Intensity can be assessed using a wide
715	range of criteria. Among these criteria are public health and safety, unique
716	characteristics of the geographic locale, the level of public controversy, whether the
717	action would fail to comply with applicable laws and regulations, and other
718	considerations. In the DEIS, impacts are assessed using the following scale:

719	Negligible impacts may be adverse or beneficial but would occur at the
720	lowest level of detection.
721	Minor impacts would be noticeable but would not affect the function or
722	integrity of the resource.
723	<ul> <li>Moderate impacts would be readily apparent and would influence the</li> </ul>
724	function or integrity of the resource.
725	Major impacts would be substantial and would result in severely adverse or
726	exceptionally beneficial changes to the resource.
727	<ul> <li>Outcome: Impacts may be beneficial or adverse:</li> </ul>
728	Beneficial impacts would result in positive outcomes to the natural or
729	human environment.
730	Adverse impacts would result in unfavorable or undesirable outcomes to the
731	natural or human environment.

#### ES.11.2 Resources Considered

FRA analyzed and assessed the potential environmental impacts of the No-Action Alternative
 and five Action Alternatives on the following resource categories:

- Natural Ecological Systems
- Water Resources and Water Quality
- Solid Waste Disposal and Hazardous Materials
- Transportation
- Air Quality
- Greenhouse Gas Emissions and Resilience
- Energy Resources
- Land Use, Land Planning, and Property

- Noise and Vibration
- Aesthetics and Visual Quality
- Cultural Resources
- Parks and Recreation Areas
- Social and Economic Conditions
- Public Safety and Security
- Public Health, Elderly and Persons with Disabilities
- Environmental Justice

#### ES.11.3 Methodology

The DEIS analyzed the potential operational impacts of the Action Alternatives relative to two
 baselines: No-Action Alternative conditions in the 2040 planning horizon year and existing
 conditions as of 2017. The two-baseline approach was adopted because the No-Action
 Alternative includes the development of the privately owned air rights above the WUS rail

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- 738terminal, a separate, large scale project that would substantially change conditions in the739Project Area. Assessment against both No-Action Alternative and existing conditions is740intended to provide a more complete understanding of the impacts of the Project.
- The potential impacts of the No-Action Alternative and the construction impacts of all alternatives were assessed relative to existing conditions as of 2017.

#### **ES.11.4** Summary of Impacts

Table ES-6 summarizes the direct and indirect operational impacts of the seven alternatives
 evaluated in the DEIS. Table ES-7 summarizes their construction impacts.

#### Abbreviations Used in Tables ES-6 and ES-7

1-hr: one-hour standard
8-hr: eight-hour standard
24-hr: twenty-four hour standard
CO: carbon monoxide
cy: cubic yard
dBA: A-weighted decibel
gpd: gallons per day
gpm: gallons per minute
in/s: inches per second
KBTU: kilo British thermal unit
LOS: level of service
MBT: Metropolitan Branch Trail

NAAQS: National Ambient Air Quality Standard NO<sub>x</sub>: nitrogen oxide PM<sub>2.5</sub>: particulate matter 2.5 micrometers or less PM<sub>10</sub>: particulate matter 10 micrometers or less ppm: parts per million tpy: tons per year SF: square foot SOE: support of excavation St.: Street VOC: volatile organic compounds μg/m<sup>3</sup>: micrograms per cubic meter

Table ES-6. Summary of Direct and Indirect Operational Impacts												
Resource and Type of Impact			No Action Alternative	Alternative A	Alternative B	Alternative C East Option	Alternative C West Option	Alternative D	Alternative E	Alternative A-C (Preferred)		
Natural Ecological Systems		Direct and Indirect Impacts	None	None	None	None	None		None	None		
	Surface	Direct Impacts	None	None	None	None		None	None	None		
	Waters	Indirect Impacts	Negligible adverse	Negligible adverse	Negligible adverse	Negligible ad	Negligible adverse		Negligible adverse	Negligible adverse		
	Groundwater	Direct Impacts	Negligible adverse Dewatering <10 gpm	Negligible adverse Dewatering <10 gpm	Negligible adverse Dewatering <10 gpm	Moderate ad Dewatering from 2	Moderate adverse Dewatering from 20 to 30 gpm		Negligible adverse Dewatering <10 gpm	Negligible adverse Dewatering <10 gpm		
		Indirect Impacts	None	Negligible adverse	Negligible adverse	Negligible ad	lverse	Negligible adverse	Negligible adverse	Negligible adverse		
Water Resources	Stormwater	Direct Impacts	Minor adverse on infrastructure none on flows	Minor adverse on infrastructure none on flows	Minor adverse on infrastructure none on flows	Minor adverse on infrastructure none on flows		Minor adverse on infrastructure none on flows		Minor adverse on infrastructure none on flows	Minor adverse on infrastructure none on flows	Minor adverse on infrastructure none on flows
		Indirect Impacts	None	None	None	None		None	None	None		
	Wastewater	Direct Impacts	Minor adverse Demand 464,200 gpd	Minor adverse Demand 104,530 gpd	Minor adverse Demand 104,530 gpd	Minor adverse Demand 133,330 gpd		Minor adverse Demand 134,730 gpd	Minor adverse Demand 105,930 gpd	Minor adverse Demand 104,530 gpd		
		Indirect Impacts	None	None	Minor adverse Demand 82,600 gpd	Minor adverse Demand 85,700 gpd		Minor adverse Demand 61,900 gpd	Minor adverse Demand 61,900 gpd	Minor adverse Demand 34,200 gpd		
	Drinking Water	Direct Impacts	Minor adverse Demand 510,620 gpd	Minor adverse Demand 99,143 gpd	Minor adverse Demand 99,143 gpd	Minor adve Demand 99,14	Minor adverse Demand 99,143 gpd		Minor adverse Demand 100,683 gpd	Minor adverse Demand 99,143 gpd		
		Indirect Impacts	None	None	Minor adverse Demand 90,860 gpd	Minor adverse Demand 94,300 gpd		Minor adverse Demand 68,100 gpd	Minor adverse Demand 68,100 gpd	Minor adverse Demand 37,620 gpd		
Solid Wasto	Municipal	Direct Impacts	Minor adverse Generation 15,245 tpy	Minor adverse Generation 2,744 tpy	Minor adverse Generation 2,744 tpy	Minor adverseMinor adverseGeneration 2,744 tpyGeneration 2,744 tpy		Minor adverse Generation 3,021 tpy	Minor adverse Generation 3,021 tpy	Minor adverse Generation 2,744 tpy		
and Hazardous Materials	Solid Waste	Indirect Impacts	None	Negligible adverse	Minor adverse Generation 4,532 tpy	Minor adverseMinor adverseGeneration 4,532 tpyGeneration 4,700 tpy		Minor adverse Generation 3,410 tpy	Minor adverse Generation 3,410 tpy	Minor adverse Generation 1,881 tpy		
	Hazardous	Direct Impacts	Negligible adverse	Negligible adverse	Negligible adverse	Negligible ad	lverse	Negligible adverse	Negligible adverse	Negligible adverse		
	Materials	Indirect Impacts	Negligible adverse	Negligible adverse	Negligible adverse	Negligible ad	lverse	Negligible adverse	Negligible adverse	Negligible adverse		
Turana atatian	Commuter and Intercity Railroads	Direct Impacts	Major adverse Constrains rail growth	Major beneficial Supports rail growth	Major beneficial Supports rail growth	Major bene Supports rail و	ficial growth	Major beneficial Supports rail growth	Major beneficial Supports rail growth	Major beneficial Supports rail growth		
Transportation	WMATA Metrorail	Direct Impacts	Moderate adverse Excess demand 0 to 1,110	Moderate adverse Excess demand 469 to 2,421	Moderate adverse Excess demand 400 to 2,421	Moderate ad Excess demand 44	Moderate adverse Excess demand 444 to 2,421		Moderate adverse Excess demand 422 to 2,421	Moderate adverse Excess demand 444 to 2,421		

Resource and Type of Impact		No Action Alternative	Alternative A	Alternative B	Alternative C East Option	Alternative C West Option	Alternative D	Alternative E	Alternative A-C (Preferred)
DC Streetcar	Direct Impacts	Minor beneficial Increased ridership within capacity	Minor beneficial Increased ridership within capacity	Minor beneficial Increased ridership within capacity	Minor beneficial Increased ridership within capacity		Minor beneficial Increased ridership within capacity	Minor beneficial Increased ridership within capacity	Minor beneficial Increased ridership within capacity
Intercity, Tour/Charter, and Sightseeing Buses	Direct Impacts	Major adverse growth not accommodated	Moderate adverse 30-mn time limit	Moderate adverse 30-mn time limit	Moderate a 30-mn tim	adverse ne limit	Moderate adverse 30-mn time limit	Moderate adverse 30-mn time limit	Moderate adverse 30-mn time limit
Loading	Direct Impacts	None	None	None	Non	e	None	None	None
Pedestrians	Direct Impacts	Major adverse No accommodation of volume increases	Major beneficial Accommodates volume increases inside WUS Minor adverse Some crowding outside WUS	Major beneficial Accommodates volume increases inside WUS Minor adverse Some crowding outside WUS	Moderate beneficial Accommodates volume increases inside WUS but longer distances Minor adverse Some crowding outside WUS Minor adverse from increased conflicts despite added storage Minor adverse Incrementally greater overcrowding and congestion		Moderate beneficial Accommodates volume increases inside WUS but longer distances Minor adverse Some crowding outside WUS	Major beneficial Accommodates volume increases inside WUS Minor adverse Some crowding outside WUS	Major beneficial Accommodates volume increases inside WUS Minor adverse Some crowding outside WUS
Bicycle Activity	Direct Impacts	Moderate adverse No accommodation of volume increases	Minor beneficial from added storage despite increased conflicts	Minor adverse from increased conflicts despite added storage			Minor adverse from increased conflicts despite added storage	Minor adverse from increased conflicts despite added storage	Minor beneficial from added storage despite increased conflicts
City and Commuter Buses	Direct Impacts	Moderate adverse overcrowding and congestion	Minor adverse Incrementally greater overcrowding and congestion	Minor adverse Incrementally greater overcrowding and congestion			Minor adverse Incrementally greater overcrowding and congestion	Minor adverse Incrementally greater overcrowding and congestion	Minor adverse Incrementally greater overcrowding and congestion
Employee	Direct Impacts	None	Moderate adverse	Moderate adverse	Moderate a	adverse	Moderate adverse	Moderate adverse	Moderate adverse
Vehicular Parking	Direct Impacts	None	Moderate adverse Space for 700 fewer cars	Minor adverse Space for 450 fewer cars	Moderate adverse Space for 800 fewer cars	Moderate adverse Space for 840 fewer cars	Moderate adverse Space for 800 fewer cars	Minor adverse Space for 450 fewer cars	Moderate adverse Space for 850 fewer cars
Rental Cars	Direct Impacts	Minor adverse Increased activity without improvements	Minor beneficial Increased activity with improvements	Minor beneficial Increased activity with improvements	Minor ber Increased activity wi	neficial th improvements	Minor beneficial Increased activity with improvements	Minor beneficial Increased activity with improvements	Minor beneficial Increased activity with improvements
For-hire Vehicles	Direct Impacts	Major adverse Increased volumes without improvements	Moderate beneficial from new locations Major adverse from congestion	Moderate beneficial from new locations Major adverse from congestion	Moderate b from new lo Moderate adverse f	Moderate beneficial from new locations Moderate adverse from congestion		Moderate beneficial from new locations Moderate adverse from congestion	Moderate beneficial from new locations Moderate adverse from congestion

Resource and Type of Impact		No Action Alternative	Alternative A	Alternative B	Alternative C East Option	Alternative C West Option	Alternative D	Alternative E	Alternative A-C (Preferred)	
	Private pick- up/Drop-off	Direct Impacts	Major adverse Increased volumes without improvements	Moderate beneficial from new locations Major adverse from congestion	Moderate beneficial from new locations Major adverse from congestion	Moderate b from new lo Moderate adverse	peneficial ocations from congestion	Moderate beneficial from new locations Moderate adverse from congestion	Moderate beneficial from new locations Moderate adverse from congestion	Moderate beneficial from new locations Moderate adverse from congestion
		Direct Impacts	Major adverse	Major adverse	Major adverse	Major adverse	Major adverse	Major adverse	Major adverse	Major adverse
	Vehicular	Degradation to LOS F	6 out of 35 intersections	7 out of 35 intersections	4 out of 36 intersections	5 out of 36 intersections	4 out of 36 intersections	4 out of 36 intersections	4 out of 36 intersections	5 out of 35 intersections
	Traffic	Increase in queue >150 feet	21 out of 35 intersections	16 out of 35 intersections	15 out of 36 intersections	19 out of 36 intersections	21 out of 36 intersections	14 out of 36 intersections	16 out of 36 intersections	19 out of 35 intersections
		Delay increase > 5 seconds	18 out of 35 intersections	20 out of 35 intersections	21 out of 36 intersections	21 out of 36 intersections	20 out of 36 intersections	20 out of 36 intersections	20 out of 36 intersections	22 out of 35 intersections
		Peak-hour Volumes AM (PM)	1 631 (2 154)	3 994 (4 010)	4 058 (4 067)	3 985 (3 998)	3 985 (3 998)	3 985 (3 998)	4 058 (4 067)	3 994 (4 010)
	All Modes	Indirect Impacts	None	Minor adverse Additional trips on all modes	Moderate adverse Additional trips on all modes	Moderate Additional trips	adverse on all modes	Moderate adverse Additional trips on all modes	Moderate adverse Additional trips on all modes	Minor adverse Additional trips on all modes
	Mobile Source Microscale	Direct Impacts	Minor adverse Emissions below NAAQS	Minor adverse Emissions below NAAQS	Minor adverse Emissions below NAAQS	Minor adverse Emissions below NAAQS	Minor adverse Emissions below NAAQS	Minor adverse Emissions below NAAQS	Minor adverse Emissions below NAAQS	Minor adverse Emissions below NAAQS
		Max. CO Concentrations (Traffic)	2.2 ppm (1-hr) 1.8 ppm (8-hr)	2.3 ppm (1-hr) 1.9 ppm (8-hr)	2.6 ppm (1-hr) 1.9 ppm (8-hr)	2.6 ppm (1-hr) 1.9 ppm (8-hr)	2.6 ppm (1-hr) 1.9 ppm (8-hr)	2.4 ppm (1-hr) 1.9 ppm (8-hr)	2.5 ppm (1-hr) 1.9 ppm (8-hr)	2.3 ppm (1-hr) 1.9 ppm (8-hr)
		Max. PM <sub>2.5</sub> Concentrations	23.6 μg/m <sup>3</sup> (24-hr) 10.0 μg/m <sup>3</sup> (annual)	23.7 μg/m³ (24-hr) 10.0 μg/m³ (annual)	23.6 μg/m³ (24-hr) 9.9 μg/m³ (annual)	25.1 μg/m³ (24-hr) 10.8 μg/m³ (annual)	25.0 μg/m <sup>3</sup> (24-hr) 10.8 μg/m <sup>3</sup> (annual)	24.5 μg/m³ (24-hr) 10.6 μg/m³ (annual)	24.5 μg/m³ (24-hr) 10.6 μg/m³ (annual)	23.9 μg/m <sup>3</sup> (24-hr) 10.2 μg/m <sup>3</sup> (annual)
		Max. CO Concentrations (Parking Facility)	2.1 ppm (1-hr) 1.7 ppm (8-hr)	2.2 ppm (1-hr) 2.0 ppm (8-hr)	2.5 ppm (1-hr) 1.9 ppm (8-hr)	2.7 ppm (1-hr) 2.2 ppm (8-hr)	2.7 ppm (1-hr) 2.2 ppm (8-hr)	2.3 ppm (1-hr) 2.0 ppm (8-hr)	2.6 ppm (1-hr) 2.2 ppm (8-hr)	2.4 ppm (1-hr) 1.9 ppm (8-hr)
		Indirect Impacts	Beneficial Reduction in Emissions	Moderate adverse Project Emissions Below <i>de minimis</i>	Moderate adverse Project Emissions Below <i>de minimis</i>	Moderate adverse Project Emissions Below <i>de minimis</i>	Moderate adverse Project Emissions Below <i>de minimis</i>	Moderate adverse Project Emissions Below <i>de minimis</i>	Moderate adverse Project Emissions Below <i>de</i> <i>minimis</i>	Moderate adverse Project Emissions Below <i>de minimis</i>
Air Quality		Total annual VOC Emissions	34.8 tpy	39.7 tpy	41.6 tpy	40.9 tpy	40.8 tpy	40.3 tpy	40.8 tpy	39.4 tpy
	Mobile Source Mesoscale	Total annual NO <sub>x</sub> Emissions	30.6 tpy	66.1 tpy	66.3 tpy	66.2 tpy	66.1 tpy	66.0 tpy	66.1 tpy	66.0 tpy
		Total annual CO Emissions	76 tpy	100.6 tpy	104.4 tpy	103.5 tpy	102.6 tpy	102.0 tpy	103.0 tpy	99.9 tpy
		Total annual $PM_{10}$ Emissions	4.8 tpy	5.8 tpy	6.0 tpy	5.9 tpy	5.9 tpy	5.9 tpy	6.0 tpy	5.8 tpy
		Total annual PM <sub>2.5</sub> Emissions	1.3 tpy	2.0 tpy	2.0 tpy	2.0 tpy	2.0 tpy	2.0 tpy	2.0 tpy	2.0 tpy
	Mobile Source Air Toxics	Indirect Impacts	N/A	Minor adverse Increase in emissions	Minor adverse Increase in emissions	Minor ad Increase in e	lverse emissions	Minor adverse Increase in emissions	Minor adverse Increase in emissions	Minor adverse Increase in emissions
	Stationary Sources	Direct Impacts	N/A	Negligible Increased emissions	Negligible Increased emissions	Neglig Increased e	ible missions	Negligible Increased emissions	Negligible Increased emissions	Negligible Increased emissions

	Resource and	l Type of Impact	No Action Alternative	Alternative A	Alternative B	Alternative C East Option	Alternative C West Option	Alternative D	Alternative E	Alternative A-C (Preferred)
Construction		Direct and Indirect	Moderate adverse Increased emissions	Negligible adverse Increased emissions	Negligible adverse Increased emissions	Negligible adverse Increased emissions	Negligible adverse Increased emissions	Negligible adverse Increased emissions	Negligible adverse Increased emissions	Negligible adverse Increased emissions
Gas (GHG) Emission and Resilience		Total annual CO <sub>2</sub> emissions	79,778 tpy	17,370 tpy	26,453 tpy	24,845 tpy	24,681 tpy	21,070 tpy	22,887 tpy	18,506 tpy
	Resilience	Direct and Indirect	Moderate adverse No opportunity to improve	Beneficial Opportunities to improve	Beneficial Opportunities to improve	Benefi Opportunities	Beneficial Opportunities to improve		Beneficial Opportunities to improve	Beneficial Opportunities to improve
Energy Resources		Direct Impacts	Minor adverse Annual energy consumption 264 Million KBTUs	Minor adverse Annual energy consumption 37.5 Million KBTUs	Minor adverse Annual energy consumption 42.2 Million KBTUs	Minor adverse Annual energy consumption 37.8 Million KBTUs	Minor adverse Annual energy consumption 37.6 Million KBTUs	Minor adverse Annual energy consumption 38 Million KBTUs	Minor adverse Annual energy consumption 41.2 Million KBTUs	Minor adverse Annual energy consumption 36.7 Million KBTUs
		Indirect Impacts	None	Negligible adverse Annual energy consumption 3.7 Million KBTUs	Minor adverse Annual energy consumption 61.7 Million KBTUs	Minor adverse Annual energy consumption 64.1 Million KBTUs		Minor adverse Annual energy consumption 46.3 Million KBTUs	Minor adverse Annual energy consumption 46.3 Million KBTUs	Minor adverse Annual energy consumption 25.6 Million KBTUs
	Zoning	Direct and Indirect Impacts	None	None	None	Non	e	None	None	None
Land Use, Land Planning, and Property	Land Use and Development	Direct Impacts	Major beneficial Private air-rights development	Major beneficial Enhanced multimodal uses & connectivity; all WUS uses south of H St.	Major beneficial Enhanced multimodal uses & connectivity; All WUS uses south of the H St. or below- ground.	Moderate b Enhanced multimodal u above-ground WUS use H St	eneficial uses & connectivity; is north and south of :.	Moderate beneficial Enhanced multimodal uses & connectivity; above-ground WUS uses north and south of H St.	Major beneficial Enhanced multimodal uses & connectivity; All WUS uses south of the H St. or below-ground.	Major beneficial Enhanced multimodal uses & connectivity; all WUS uses south of H St.
	Development	Indirect Impacts	None	Minor beneficial 324,000 SF for potential Federal air- rights development	Major beneficial 917,000 SF for potential Federal air- rights development	Major ber 953,000 SF for potenti develop	neficial al Federal air-rights ment	Major beneficial 688,000 SF for potential Federal air-rights development	Major beneficial 688,000 SF Potential Federal air-rights development	Major beneficial 380,000 SF Potential Federal air-rights development
	Property	Direct Impacts	None Encroachment of the private air-rights development deck into Federal and Amtrak property	Moderate adverse Acquisition of 3.1 acres of private air rights, all south of H St.	Moderate adverse Acquisition of 2.8 acres of private air rights, all south of H St.	Major adverse Acquisition of 4.6 acres of private air rights on both sides of H St.	Major adverse Acquisition of 4.8 acres of private air rights on both sides of H St.	Moderate adverse Acquisition of 4.8 acres of private air rights on both sides of H St.	Moderate adverse Acquisition of 1.9 acres of private air rights all south of H St.	Moderate adverse Acquisition of 1.1 acres of private air rights, all south of H St.
		Indirect Impacts	None	None	None	Non	e	None	None	None
F	Local and Regional Plans	Direct Impacts	Minor adverse Limited consistency	Major to minor beneficial Generally consistent	Major to minor beneficial Generally consistent	Major to mino Generally co	r beneficial onsistent	Major to minor beneficial Generally consistent	Major to minor beneficial Generally consistent	Major to minor beneficial Generally consistent
		Indirect Impacts	None	None	None	Non	e	None	None	None

Resource and Type of Impact		No Action Alternative	Alternative A	Alternative B	Alternative C East Option	Alternative C West Option	Alternative D	Alternative E	Alternative A-C (Preferred)	
Noise	Noise	Direct Impacts	Beneficial near WUS Lower noise levels Negligible adverse away from WUS increases less than 3 dBA	Moderate adverse 14 modeled locations above threshold	Moderate adverse 14 modeled locations above threshold	Moderate adverse 14 modeled locations above threshold		Moderate adverse 14 modeled locations above threshold	Moderate adverse 14 modeled locations above threshold	Moderate adverse 14 modeled locations above threshold
		Indirect Impacts	None	None	None	Nor	ne	None	None	None
	Vibration	Direct Impacts	Negligible adverse minimal change	Minor adverse some increases; no thresholds exceeded	Minor adverse some increases; no thresholds exceeded	Minor a some increases; no th	Minor adverse some increases; no thresholds exceeded		Minor adverse some increases; no thresholds exceeded	Minor adverse some increases; no thresholds exceeded
		Indirect Impacts	None	None	None	Nor	ne	None	None	None
Aesthetics and	l Visual Quality	Direct Impacts	Major adverse 6/28 views Moderate adverse 6/28 views Minor adverse 5/28 views Negligible adverse 4/28 views	Moderate adverse 1/28 views Negligible adverse 2/28 views Beneficial 1/28 views	Negligible adverse 1/28 views Beneficial 1/28 views	Beneficial 2/28 views		Beneficial 2/28 views	Beneficial 2/28 views	Moderate adverse 1/28 views Minor adverse 1/28 views Negligible adverse 1/28 views Beneficial 1/28 views
		Indirect Impacts	None	Moderate adverse 2/28 views Minor adverse 3/28 views Negligible adverse 2/28 views	Moderate adverse 3/28 views Minor adverse 3/28 views Negligible adverse 3/28 views	Moderate adverse 2/28 views Minor adverse 2/28 views Negligible adverse 1/28 views		Moderate adverse 2/28 views Minor adverse 2/28 views Negligible adverse 1/28 views	Moderate adverse 2/28 views Minor adverse 2/28 views Negligible adverse 1/28 views	Moderate adverse 1/28 views Minor adverse 4/28 views Negligible adverse 2/28 views
		Direct Physical Impacts	Potential adverse 2/55 resources	Major adverse 2/55 resources Potential adverse 1/55 resources	Major adverse 2/55 resources Potential adverse 1/55 resources	Major adverse 2/55 resources Potential adverse 1/55 resources		Major adverse 2/55 resources Potential adverse 1/55 resources	Major adverse 2/55 resources Potential adverse 1/55 resources	Major adverse 2/55 resources Potential adverse 1/55 resources
Cultural Resources		Direct Visual Impacts	Major adverse 3/55 resources Moderate adverse 7/55 resources Minor adverse 5/55 resources Negligible adverse 3/55 resources	Major adverse 3/55 resources Minor adverse 2/55 resources Negligible adverse 2/55 resources Beneficial 1/55 resources	Major adverse 3/55 resources Minor adverse 2/55 resources Negligible adverse 2/55 resources Beneficial 1/55 resources	Major adverse 3/55 resources Minor adverse 5/55 resources Negligible adverse 1/55 resources Beneficial 2/55 resources	Major adverse 3/55 resources Minor adverse 2/55 resources Negligible adverse 2/55 resources Beneficial 2/55 resources	Major adverse 3/55 resources Moderate adverse 1/55 resources Minor adverse 2/55 resources Negligible adverse 2/55 resources Beneficial 2/55 resources	Major adverse 3/55 resources Minor adverse 2/55 resources Negligible adverse 2/55 resources Beneficial 2/55 resources	Major adverse 3/55 resources Minor adverse 2/55 resources Negligible adverse 2/55 resources Beneficial 1/55 resources
		Direct Noise and Vibration impacts	Negligible adverse 18/55 resources	Minor adverse 3/55 resources Negligible adverse 15/55 resources	Minor adverse 3/55 resources Negligible adverse 15/55 resources	Minor adverse 3/55 resources Negligible adverse 15/55 resources		Minor adverse 3/55 resources Negligible adverse 15/55 resources	Minor adverse 3/55 resources Negligible adverse 15/55 resources	Minor adverse 3/55 resources Negligible adverse 15/55 resources

Resource and Type of Impact		No Action Alternative	Alternative A	Alternative B	Alternative C Alternative C East Option West Option	Alternative D	Alternative E	Alternative A-C (Preferred)	
		Direct Traffic Impacts	Potential adverse 1/55 resources	Potential adverse 1/55 resources	Potential adverse 1/55 resources	Potential adverse 1/55 resources	Potential adverse 1/55 resources	Potential adverse 1/55 resources	Potential adverse 1/55 resources
		Indirect Impacts (Visual)	None	Moderate adverse 1/55 resource Minor adverse 5/55 resources Negligible adverse 6/55 resources	Moderate adverse 1/55 resource Minor adverse 5/55 resources Negligible adverse 6/55 resources	Moderate adverse 1/55 resource Minor adverse 3/55 resources Negligible adverse 6/55 resources	Moderate adverse 2/55 resource Minor adverse 2/55 resources Negligible adverse 5/55 resources	Moderate adverse 1/55 resource Minor adverse 3/55 resources Negligible adverse 6/55 resources	Moderate adverse 1/55 resource Minor adverse 5/55 resources Negligible adverse 6/55 resources
Parks and Recreation Areas		Direct Impacts	None	Minor beneficial Improved access to Columbus Plaza	Minor beneficial Improved access to Columbus Plaza	Minor beneficial Improved access to Columbus Plaza	Minor beneficial Improved access to Columbus Plaza	Minor beneficial Improved access to Columbus Plaza	Minor beneficial Improved access to Columbus Plaza
		Indirect Impacts	Minor adverse Increased wear and tear of parks near WUS	Minor adverse Increased wear and tear of parks near WUS	Minor adverse Increased wear and tear of parks near WUS	Minor adverse Increased wear and tear of parks near WUS	Minor adverse Increased wear and tear of parks near WUS	Minor adverse Increased wear and tear of parks near WUS	Minor adverse Increased wear and tear of parks near WUS
	Domographics	Direct Impacts	Minor increase in local population	None	None	None	None	None	None
_	Demographics	Indirect Impacts	Negligible increase in local population	Negligible increase in local population	Negligible increase in local population	Negligible increase in local population	Negligible increase in local population	Negligible increase in local population	Negligible increase in local population
	Community	Direct Impacts	Moderate beneficial Improved local connectivity; no enhancement at WUS	Major beneficial Improved local connectivity including enhancements at WUS	Major beneficial Improved local connectivity including enhancements at WUS	Major beneficial Improved local connectivity including enhancements at WUS	Major beneficial Improved local connectivity including enhancements at WUS	Major beneficial Improved local connectivity including enhancements at WUS	Major beneficial Improved local connectivity including enhancements at WUS
Social and Economic		Indirect Impacts	None	None	None	None	None	None	None
Conditions		Direct Impacts	Moderate beneficial Increase in local employment 8,500 jobs	Minor beneficial 1,445 new jobs at WUS	Minor beneficial 1,445 new jobs at WUS	Minor beneficial 1,445 new jobs at WUS	Minor beneficial 1,529 new jobs at WUS	Minor beneficial 1,529 new jobs at WUS	Minor beneficial 1,445 new jobs at WUS
	Employment	Indirect Impacts (Induced Employment)	Minor beneficial Some induced jobs from greater activity at Project Area	Minor beneficial Some induced jobs from greater activity at WUS	Minor beneficial Some induced jobs from greater activity at WUS	Minor beneficial Some induced jobs from greater activity at WUS	Minor beneficial Some induced jobs from greater activity at WUS	Minor beneficial Some induced jobs from greater activity at WUS	
		Indirect Impacts (Potential Federal Air-righs Development)	None	Negligible beneficial A few jobs from the Federal air-rights development	Moderate beneficial 3,670 local jobs at potential Federal air- rights development	Moderate beneficial 3,810 local jobs at potential Federal air- rights development	Moderate beneficial 2,752 local jobs at potential Federal air- rights development	Moderate beneficial 2,752 local jobs at potential Federal air-rights development	Moderate beneficial 1,520 local jobs at potential Federal air- rights development

	Resource and Type of Impact		No Action Alternative	Alternative A	Alternative B	Alternative C Alternativ East Option West Opt	e C Alternative D	Alternative E	Alternative A-C (Preferred)
		Direct Impacts	None	Moderate adverse Partial loss of parking revenue	Major adverse Total loss of parking revenue	Major adverse Total loss of parking revenue	Major adverse Total loss of parking revenue	Major adverse Total loss of parking revenue	Moderate adverse Partial loss of parking revenue
	WUS Revenue	Indirect Impacts	Negligible beneficial From increased activity	Beneficial From potential Federal air-rights development	Beneficial From potential Federal air-rights development	Beneficial From potential Federal air-rights development	Beneficial From potential Federal air-rights development	Beneficial From potential Federal air- rights development	Beneficial From potential Federal air-rights development
	Other Economic Impacts	Direct and Indirect Impacts	Moderate beneficial from increased economic activity	Minor beneficial from increased economic activity	Minor beneficial from increased economic activity	Minor beneficial from increased economic activity	Minor beneficial from increased economic activity	Minor beneficial from increased economic activity	Minor beneficial from increased economic activity
	Convito.	Direct Impacts	Major adverse From increased activity and in-deck private parking	Major beneficial From security enhancements at WUS	Major beneficial From security enhancements at WUS	Moderate beneficial From security enhancements at W partially offset by more spread ou elements	JS t Moderate beneficial From security enhancements at WUS partially offset by more spread out elements	Moderate beneficial From security enhancements at WUS partially offset by more spread out elements	Major beneficial From security enhancements at WUS
		Indirect Impacts	Minor adverse From increased demands on services	Minor adverse From increased demands on services	Moderate adverse From increased risks generated by private Federal air-rights development	Moderate adverse From increased risks generated by pr Federal air-rights development	Moderate adverse From increased risks vate generated by private Federal air-rights development	Moderate adverse From increased risks generated by private Federal air-rights development	Moderate adverse From increased risks generated by private Federal air-rights development
Public Safety and Security	Safety	Direct Impacts	Moderate adverse From increased activity	Moderate adverse From increased activity	Moderate adverse From increased activity	Moderate adverse From increased activity	Moderate adverse From increased activity	Moderate adverse From increased activity	Moderate adverse From increased activity
		Indirect Impacts	Minor adverse From increased demands on services	Minor adverse From increased demands on services	Minor adverse From increased demands on services	Minor adverse From increased demands on servic	Minor adverse From increased demands on services	Minor adverse From increased demands on services	Minor adverse From increased demands on services
	Public Health	Direct and Indirect Impacts	None	None	None	None	None	None	None
Public Health, Elderly, and Persons with Disabilities F	Transportation and Mobility of Elderly and Persons with Disabilities	Direct Impacts	Moderate beneficial Limited accessibility enhancements	Major beneficial Extensive accessibility enhancements at WUS	Moderate beneficial Extensive accessibility enhancements at WUS partially offset by more spread out elements	Moderate beneficial Extensive accessibility enhancement WUS partially offset by more spread elements	s at out Spread out elements	Moderate beneficial Extensive accessibility enhancements at WUS partially offset by more spread out elements	Major beneficial Extensive accessibility enhancements at WUS

	Resource and Type of Impact		No Action Alternative	Alternative A	Alternative B	Alternative C East Option	Alternative C West Option	Alternative D	Alternative E	Alternative A-C (Preferred)
		Indirect Impacts	Negligible adverse From increased activity at and near WUS	Minor adverse From increased activity at and near WUS	Minor adverse From increased activity at and near WUS	Minor adverse From increased activity at and near WUS		Minor adverse From increased activity at and near WUS	Minor adverse From increased activity at and near WUS	Minor adverse From increased activity at and near WUS
Environmental Justice		Disproportionately high and adverse due to increase in bus facility operations with no improvements to the facility and overcrowding on some city buses.	No disproportionately high and adverse impacts on environmental justice communities	No disproportionately high and adverse impacts on environmental justice communities	No disproportionately high and adverse impacts on environmental justice communities		No disproportionately high and adverse impacts on environmental justice communities	No disproportionately high and adverse impacts on environmental justice communities	No disproportionately high and adverse impacts on environmental justice communities	
					Cumulative Impacts					
	Natural Eco	logical Systems		None	None	Non	e	None	None	None
-		Surface Waters		Negligible adverse	Negligible adverse	Negligible adverse		Negligible adverse	Negligible adverse	Negligible adverse
		Stormwater		None	None	Non	e	None	None	None
Water Resources		Groundwater		Minor adverse	Moderate adverse	Moderate adverse		Moderate adverse	Moderate adverse	Minor adverse
		Wastewater		Minor adverse	Minor adverse	Minor adverse		Minor adverse	Minor adverse	Minor adverse
		Drinking Water	N/A	Minor adverse	Minor adverse	Minor ad	verse	Minor adverse	Minor adverse	Minor adverse
Solid Waste	r	Municipal Solid Waste		Minor adverse	Minor adverse	Minor ad	verse	Minor adverse	Minor adverse	Minor adverse
Materials		Hazardous Materials		Minor adverse Minor beneficial	Minor adverse Minor beneficial	Minor ad Minor ber	verse neficial	Minor adverse Minor beneficial	Minor adverse Minor beneficial	Minor adverse Minor beneficial
	Comm	uter and Intercity Railroads		Major beneficial	Major beneficial	Major ber	neficial	Major beneficial	Major beneficial	Major beneficial
Transportation		WMATA Metrorail	-	Moderate adverse	Moderate adverse	Moderate a	adverse	Moderate adverse	Moderate adverse	Moderate adverse
		DC Streetcar		Minor beneficial	Minor beneficial	Minor beneficial		Minor beneficial	Minor beneficial	Minor beneficial
	Intercity, To	ur/Charter, and Sightseeing Buses		Moderate adverse	Moderate adverse	Moderate a	adverse	Moderate adverse	Moderate adverse	Moderate adverse

Resource and Type of Impact		No Action Alternative	Alternative A	Alternative B	Alternative C Alternative C East Option West Option	Alternative D	Alternative E	Alternative A-C (Preferred)
	Loading		None	None	None	None	None	None
	Pedestrians		Major beneficial	Major beneficial	Moderate beneficial	Moderate beneficial	Moderate beneficial	Major beneficial
	Bicycle Activity		Minor beneficial	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor beneficial
	City and Commuter Buses		Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse
	Vehicular Parking		Moderate adverse	Minor adverse	Moderate adverse	Moderate adverse	Minor adverse	Moderate adverse
	Rental Cars		Minor beneficial	Minor beneficial	Minor beneficial	Minor beneficial	Minor beneficial	Minor beneficial
	For-hire Vehicles		Moderate beneficial Major adverse	Moderate beneficial Major adverse	Moderate beneficial Moderate adverse	Moderate beneficial Moderate adverse	Moderate beneficial Moderate adverse	Moderate beneficial Moderate adverse
	Private pick-up/Drop-off		Moderate beneficial Major adverse	Moderate beneficial Major adverse	Moderate beneficial Moderate adverse	Moderate beneficial Moderate adverse	Moderate beneficial Moderate adverse	Moderate beneficial Moderate adverse
	Vehicular Traffic		Major adverse	Major adverse	Major adverse	Major adverse	Major adverse	Major adverse
	Air Quality		Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse
Greenhouse Gas (GHG)	GHG Emissions		Negligible adverse	Negligible adverse	Negligible adverse	Negligible adverse	Negligible adverse	Negligible adverse
Emission and Resilience	Resilience		Major beneficial	Major beneficial	Major beneficial	Major beneficial	Major beneficial	Major beneficial
	Energy Resources		Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse
	Zoning, Land Use and Development		Major beneficial	Major beneficial	Major beneficial	Major beneficial	Major beneficial	Major beneficial
Land Use, Land Planning, and Property	Property		Moderate adverse	Moderate adverse	Major adverse	Moderate adverse	Moderate adverse	Moderate adverse
and roperty	Local and Regional Plans		Beneficial	Beneficial	Beneficial	Beneficial	Beneficial	Beneficial
Noise and vibration			Moderate adverse on 14 modeled locations	Moderate adverse on 14 modeled locations	Moderate adverse on 14 modeled locations	Moderate adverse on 14 modeled locations	Moderate adverse on 14 modeled locations	Moderate adverse on 14 modeled locations
Aesthetics and Visual Quality			Same as operational impacts	Same as operational impacts	Same as operational impacts	Same as operational impacts	Same as operational impacts	Same as operational impacts
Cultural Resources			Major adverse on WUS and WUS Historic Site	Major adverse on WUS and WUS Historic Site	Major adverse on WUS and WUS Historic Site	Major adverse on WUS and WUS Historic Site	Major adverse on WUS and WUS Historic Site	Major adverse on WUS and WUS Historic Site

Resource and Type of Impact		No Action Alternative	Alternative A	Alternative B	Alternative C Alternative C East Option West Option	Alternative D	Alternative E	Alternative A-C (Preferred)
	Parks and Recreation Areas		Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse
	Demographics		Negligible impact	Negligible impact	Negligible impact	Negligible impact	Negligible impact	Negligible impact
	Community		Major beneficial	Major beneficial	Major beneficial	Major beneficial	Major beneficial	Major beneficial
Economic Conditions	Employment		Minor beneficial	Minor beneficial	Minor beneficial	Minor beneficial	Minor beneficial	Minor beneficial
	WUS Revenue		Moderate adverse	Major adverse	Major adverse	Major adverse	Major adverse	Moderate adverse
	Other Economic Impacts		Minor beneficial	Minor beneficial	Minor beneficial	Minor beneficial	Minor beneficial	Minor beneficial
Public Safety	Security		Moderate beneficial	Minor beneficial	Minor beneficial	Minor beneficial	Minor beneficial	Minor beneficial
and Security	Safety		Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse
Public Health, Elderly, and	Public Health		Negligible adverse	Negligible adverse	Negligible adverse	Negligible adverse	Negligible adverse	Negligible adverse
Persons with Disabilities	Transportation and Mobility of Elderly and Persons with Disabilities		Major beneficial	Moderate beneficial	Moderate beneficial	Moderate beneficial	Moderate beneficial	Major beneficial
	Environmental Justice		None	None	None	None	None	None

Table ES-7. Summary of Construction Impacts									
	Resource or Type of Impact	No Action Alternative	Alternative A	Alternative B	Alternative C East Option	Alternative C West Option	Alternative D	Alternative E	Alternative A-C (Preferred)
	Natural Ecological Systems	None	Minor adverse Loss of a few urban trees	Minor adverse Loss of a few urban trees	Mino Loss of a fe	r adverse w urban trees	Minor adverse Loss of a few urban trees	Minor adverse Loss of a few urban trees	Minor adverse Loss of a few urban trees
	Surface Waters	None	None	None	None		None	None	None
	Stormwater	Minor adverse Erosion and runoff	Minor adverse Erosion and runoff	Minor adverse Erosion and runoff	Minor adverse Erosion and runoff		Minor adverse Erosion and runoff	Minor adverse Erosion and runoff	Minor adverse Erosion and runoff
Water Resources	Groundwater	Negligible adverse	Negligible adverse Dewatering < 10 gpm	Moderate adverse Dewatering 260 to 430 gpm	Moderate adverse n Dewatering 220 to 280 gpm		Moderate adverse Dewatering 220 to 280 gpm	Moderate adverse Dewatering 260 to 430 gpm	Negligible adverse Dewatering < 10 gpm
	Wastewater	Negligible adverse	Negligible adverse	Minor adverse	Mino	radverse	Minor adverse	Minor adverse	Negligible adverse
	Drinking Water	Negligible adverse	Negligible adverse	Negligible adverse	Negligible adverse		Negligible adverse	Negligible adverse	Negligible adverse
Solid Waste and Hazardous	Municipal Solid Waste	Minor adverse	Minor adverse Spoil and debris 1,160,885 cy	Minor adverse Spoil and debris 1,845,224 cy	Minor adverse Spoil and debris 1,507,102 cy		Minor adverse Spoil and debris 1,507,102 cy	Minor adverse Spoil and debris 1,845,224 cy	Minor adverse Spoil and debris 1,160,885 cy
Materials	Hazardous Materials	Negligible adverse Minor beneficial	Minor adverse Minor beneficial	Minor adverse Minor beneficial	Minor Minor	r adverse beneficial	Minor adverse Minor beneficial	Minor adverse Minor beneficial	Minor adverse Minor beneficial
	Commuter and Intercity Railroads	Potential adverse	Moderate adverse Maximum of 8 cancellations per day (Phase 2)	Moderate adverse Maximum of 8 cancellations per day (Phase 2)	Moderate adverse Maximum of 8 cancellations per day (Phase 2)		Moderate adverse Maximum of 8 cancellations per day (Phase 2)	Moderate adverse Maximum of 8 cancellations per day (Phase 2)	Moderate adverse Maximum of 8 cancellations per day (Phase 2)
	WMATA Metrorail	Potential adverse	Moderate adverse Delays and temporary stoppages in Phase 4	Moderate adverse Delays and temporary stoppages in Phase 4	Moderate adverse Delays and temporary stoppages in Phase 4		Moderate adverse Delays and temporary stoppages in Phase 4	Moderate adverse Delays and temporary stoppages in Phase 4	Moderate adverse Delays and temporary stoppages in Phase 4
Transportation	DC Streetcar	Potential adverse	Moderate adverse Temporary loss of access from WUS	Moderate adverse Temporary loss of access from WUS	Moderate adverse Temporary loss of access from WUS		Moderate adverse Temporary loss of access from WUS	Moderate adverse Temporary loss of access from WUS	Moderate adverse Temporary loss of access from WUS
	Intercity, Tour/Charter, and Sightseeing Buses	Potential adverse	Major adverse In Phase 4 until completion of new bus facility	Major adverse In Phase 4 until completion of new bus facility	Minor adverse In Phase 4 until completion of bus pick- up/drop-off area	Major adverse In Phase 4 until completion of new bus facility	Major adverse In Phase 4 until completion of new bus facility	Major adverse In Phase 4 until completion of new bus facility	Major adverse In Phase 4 until completion of new bus facility
	Loading	Potential adverse	Major adverse Dock closures	Major adverse Dock closures	Majo Dock	r adverse closures	Major adverse Dock closures	Major adverse Dock closures	Major adverse Dock closures
	Pedestrians	Indestrians         Potential adverse         Moderate adverse		ite adverse n and out of WUS	Moderate adverse Disturbances in and out of WUS	Moderate adverse Disturbances in and out of WUS	Moderate adverse Disturbances in and out of WUS		

Resource or Type of Impact		No Action Alternative	Alternative A	Alternative B	Alternative CAlternative C WestEast OptionOption	Alternative D	Alternative E	Alternative A-C (Preferred)
	Bicycle Activity	Potential adverse	Major adverse During reconstruction of cycle track	Major adverse During reconstruction of cycle track	Major adverse During reconstruction of cycle track	Major adverse During reconstruction of cycle track	Major adverse During reconstruction of cycle track	Major adverse During reconstruction of cycle track
	City and Commuter Buses	Potential adverse	Negligible adverse Unlikely H Street closures	Minor adverse During construction of K Street	Minor adverse During construction of K Street	Minor adverse During construction of K Street	Minor adverse During construction of K Street	Negligible adverse Unlikely H Street closures
	Vehicular Parking and Rental Cars	Potential adverse	Major adverse In Phase 4 until completion of new parking facility	Major adverse In Phase 4 until completion of new parking facility	Major adverse In Phase 4 until completion of new parking facilities	Major adverse In Phase 4 until completion of new parking facilities	Major adverse In Phase 4 until completion of new parking facility	Major adverse In Phase 4 until completion of new parking facility
	For-hire Vehicles	Potential adverse	Major adverse Loss of queuing space	Major adverse Loss of queuing space	Major adverse Loss of queuing space	Major adverse Loss of queuing space	Major adverse Loss of queuing space	Major adverse Loss of queuing space
	Private pick-up/Drop-off	Potential adverse	Moderate adverse Temporary lane closures	Moderate adverse Temporary lane closures	Moderate adverse Temporary lane closures	Moderate adverse Temporary lane closures	Moderate adverse Temporary lane closures	Moderate adverse Temporary lane closures
	Vehicular Traffic	Potential adverse	Major adverse Road closures and construction traffic	Major adverse Road closures and construction traffic	Major adverse Road closures and construction traffic	Major adverse Road closures and construction traffic	Major adverse Road closures and construction traffic	Major adverse Road closures and construction traffic
			Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse
	Maximum annual VOC Emissions	Potential adverse	6.6 tpy	6.8 tpy	6.3 tpy	6.3 tpy	6.8 tpy	6.6 tpy
Air Quality	Maximum annual NO <sub>x</sub> Emissions		57.1 tpy	60 tpy	55.9 tpy	55.9 tpy	60 tpy	57.1 tpy
All Quality	Maximum annual CO Emissions		23.3 tpy	24.7 tpy	22.8 tpy	22.8 tpy	24.7 tpy	23.3 tpy
	Maximum annual PM <sub>10</sub> Emissions		3.2 tpy	3.5 tpy	3.3 tpy	3.3 tpy	3.5 tpy	3.2 tpy
	Maximum annual PM <sub>2.5</sub> Emissions		2.0 tpy	2.1 tpy	1.9 tpy	1.9 tpy	2.1 tpy	2.0 tpy
GHG Emission	Impact	Undetermined	Negligible adverse	Negligible adverse	Negligible adverse	Negligible adverse	Negligible adverse	Negligible adverse
	Maximum annual CO <sub>2</sub> Emissions	N/A	18,289 tpy	18,736 tpy	17,260 tpy	17,260 tpy	18,736 tpy	18,289 tpy
Energy Resources	Impact	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse	Minor adverse
Land Use, Land Planning, and Property	Zoning, Land Use and Development	Minor adverse	Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse
	Property	None	None	None	None	None	None	None
	Local and Regional Plans	None	None	None	None	None	None	None

	Resource or Type of Impact		No Action Alternative	Alternative A	Alternative B	Alternative C East Option	Alternative C West Option	Alternative D	Alternative E	Alternative A-C (Preferred)
		SOE	N/A	Major adverse 26 receptors Moderate adverse 6 receptors	Major adverse 28 receptors Moderate adverse 9 receptors	Major 25 re Modera 4 rec	adverse ceptors te adverse ceptors	Major adverse 25 receptors Moderate adverse 4 receptors	Major adverse 28 receptors Moderate adverse 9 receptors	Major adverse 26 receptors Moderate adverse 6 receptors
Noise and vibration	Noise	Start of Excavation (All Truck Scenario)	N/A	Major adverse 25 receptors Moderate adverse 7 receptors	Major adverse 25 receptors Moderate adverse 7 receptors	Major adverse 25 receptors Moderate adverse 7 receptors		Major adverse 25 receptors Moderate adverse 7 receptors	Major adverse 25 receptors Moderate adverse 7 receptors	Major adverse 25 receptors Moderate adverse 7 receptors
		End of Excavation (All Truck Scenario)	N/A	Major adverse 5 receptors Moderate adverse 19 receptors	Major adverse 5 receptors Moderate adverse 13 receptors	Major adverse 5 receptors Moderate adverse 17 receptors		Major adverse 5 receptors Moderate adverse 17 receptors	Major adverse 5 receptors Moderate adverse 13 receptors	Major adverse 5 receptors Moderate adverse 19 receptors
-	Vibration	Impact During SOE	N/A	Major adverse 3 receptors	Major adverse 4 receptors	Major adverse 3 receptors		Major adverse 3 receptors	Major adverse 4 receptors	Major adverse 3 receptors
	Vibration		N/A	0.17 to 0.67 in/s	0.12 to 0.8 in/s	0.33 to	0.67 in/s	0.33 to 0.67 in/s	0.12 to 0.8 in/s	0.17 to 0.67 in/s
	Aesthetics and Visual Quality		Moderate adverse 1/28 views Minor adverse 10/28 views Negligible adverse 9/28 views	Moderate adverse 1/28 views Minor adverse 9/28 views Negligible adverse 8/28 views	Moderate adverse 1/28 views Minor adverse 11/28 views Negligible adverse 8/28 views	Moderate adverse 1/28 views Minor adverse 12/28 views Negligible adverse 6/28 views		Moderate adverse 1/28 views Minor adverse 11/28 views Negligible adverse 8/28 views	Moderate adverse 1/28 views Minor adverse 11/28 views Negligible adverse 8/28 views	Moderate adverse 1/28 views Minor adverse 9/28 views Negligible adverse 8/28 views
	Potential Archaeological Resources		Potential adverse	Potential adverse	Potential adverse	Potential adverse		Potential adverse	Potential adverse	Potential adverse
Cultural	Visual		Potential adverse	Moderate adverse 3/55 resources Minor adverse 1/55 resources Negligible adverse 15/55 resources	Moderate adverse 3/55 resources Minor adverse 1/55 resources Negligible adverse 15/55 resources	Moderate adverse 3/55 resources Minor adverse 1/55 resources Negligible adverse 16/55 resources	Moderate adverse 3/55 resources Minor adverse 1/55 resources Negligible adverse 14/55 resources	Moderate adverse 3/55 resources Minor adverse 3/55 resources Negligible adverse 12/55 resources	Moderate adverse 3/55 resources Minor adverse 1/55 resources Negligible adverse 14/55 resources	Moderate adverse 3/55 resources Minor adverse 1/55 resources Negligible adverse 15/55 resources
hesources	Noise and Vibration		Potential adverse	Major adverse 2/55 resources Moderate adverse 5/55 resources Minor adverse 2/55 resources Negligible adverse 10/55 resources	Major adverse 2/55 resources Moderate adverse 5/55 resources Minor adverse 3/55 resources Negligible adverse 9/55 resources	Major 2/55 r Modera 5/55 r Minor 2/55 r Negligib 10/55 r	adverse esources te adverse esources adverse esources ole adverse resources	Major adverse 2/55 resources Moderate adverse 5/55 resources Minor adverse 2/55 resources Negligible adverse 10/55 resources	Major adverse 2/55 resources Moderate adverse 5/55 resources Minor adverse 3/55 resources Negligible adverse 9/55 resources	Major adverse 2/55 resources Moderate adverse 5/55 resources Minor adverse 2/55 resources Negligible adverse 10/55 resources
	Parks and Recreation Areas		Minor adverse	Moderate adverse On Columbus Plaza and MBT	Moderate adverse On Columbus Plaza and MBT	Moderate adverse On Columbus Plaza and MBT		Moderate adverse On Columbus Plaza and MBT	Moderate adverse On Columbus Plaza and MBT	Moderate adverse On Columbus Plaza and MBT

	Resource or Type of Impact		No Action Alternative	Alternative A	Alternative B	Alternative C East Option	Alternative C West Option	Alternative D	Alternative E	Alternative A-C (Preferred)
	Demographics		None	None	None	N	one	None	None	None
-	Community		Minor adverse	Moderate adverse Disruption near WUS	Moderate adverse Disruption near WUS	Modera Disruption	te adverse n near WUS	Moderate adverse Disruption near WUS	Moderate adverse Disruption near WUS	Moderate adverse Disruption near WUS
		Duration	Undetermined	10 years 5 months	13 years 4 months	11 years 3 months		11 years 3 months	13 years 4 months	10 years 5 months
Social and	Employment		Anticipated beneficial but undetermined	Minor beneficial	Minor beneficial	Minor beneficial		Minor beneficial	Minor beneficial	Minor beneficial
Economic Conditions	Average annus jobs		Undetermined	6,543	6,088	6,374		6,416	6,132	6,543
_	WUS Revenue		Minor adverse	Major adverse Disruption of parking and retail	Major adverse Disruption of parking and retail	Major adverse Disruption of parking and retail		Major adverse Disruption of parking and retail	Major adverse Disruption of parking and retail	Major adverse Disruption of parking and retail
			Anticipated beneficial but undetermined	Moderate beneficial	Minor beneficial	Minor beneficial		Minor beneficial	Minor beneficial	Minor beneficial
	Other Economic Impacts	Overall economic impact per year (\$ million)	Undetermined	\$586 to \$1,405	\$382 to \$1,139	\$305 t	o \$1,236	\$313 to \$1,269	\$382 to \$1,137	\$586 to \$1,405
Public Safety	Security		Moderate adverse Risks from access during construction	Major adverse Risks from access during construction	Major adverse Risks from access during construction	Major adverse Risks from access during construction		Major adverse Risks from access during construction	Major adverse Risks from access during construction	Major adverse Risks from access during construction
and Security	Safety	Safety		Moderate adverse Risks during construction	Moderate adverse Risks during construction	Moderate adverse Risks during construction		Moderate adverse Risks during construction	Moderate adverse Risks during construction	Moderate adverse Risks during construction
Public Health,	Public Health		Minor adverse from construction activities	Minor adverse from construction activities	Minor adverse from construction activities	Minor from constru	adverse action activities	Minor adverse from construction activities	Minor adverse from construction activities	Minor adverse from construction activities
Elderly, and Persons with Disabilities	Transportation and Mobility of Elderly and Persons with Disabilities		Moderate adverse From disruptions near WUS during construction	Major adverse From disruptions in and near WUS during construction	Major adverse From disruptions in and near WUS during construction	Major adverse From disruptions in and near WUS during construction		Major adverse From disruptions in and near WUS during construction	Major adverse From disruptions in and near WUS during construction	Major adverse From disruptions in and near WUS during construction
Environmental Justice		No impact	Disproportionately high and adverse impact in Phase 4 of construction due to unavailability of intercity bus service	Disproportionately high and adverse impact in Phase 4 of construction due to unavailability of intercity bus service	No impact	Disproportionately high and adverse impact in Phase 4 of construction due to unavailability of intercity bus service	Disproportionately high and adverse impact in Phase 4 of construction due to unavailability of intercity bus service	Disproportionately high and adverse impact in Phase 4 of construction due to unavailability of intercity bus service	Disproportionately high and adverse impact in Phase 4 of construction due to unavailability of intercity bus service	

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# **ES.12** What Avoidance, Minimization, and Mitigation Measures are Being Proposed?

**Table ES-8** shows measures FRA is considering in order to mitigate the major adverse impacts identified in **Table ES-6** and **Table ES-7**. The DEIS provides a more comprehensive list of proposed avoidance, minimization, or mitigation measures.

#### Table ES-8. Key Proposed Mitigations Measures/Project Commitments

	Proposed Measure
	Transportation
•	Proponents to require the construction contractor to prepare an integrated Construction Transportation Management Plan defining the measures to be implemented by the construction contractor to avoid, minimize, or mitigate impacts from construction on all transportation modes
•	Amtrak to coordinate with MARC and VRE on alternative service options for affected passengers, including the honoring of tickets on alternative services.
•	Project Proponents to contribute to improvements identified in WMATA's Station Access and Capacity Study that have not been addressed by the Concourse Modernization Project or by WMATA by the time of implementation.
•	Proponents to coordinate with WMATA about regional efforts to increase mainline capacity along the Red Line.
•	Proponents to coordinate with WMATA on construction approaches that would minimize delays or stoppages on the Red Line.
•	Proponents to coordinate with DDOT on options for temporary access to WUS Streetcar station during construction and take steps with the District State Safety Office to address issues that may affect Streetcar certification.
•	USRC to develop Bus Facility Operations Plan in concert with intercity and tour/charter operators and work with DDOT and DCOP on strategies to address potential off-site bus layover activities.
•	USRC to coordinate with DDOT on strategy to address tour/charter bus parking capacity loss associated with the Project.
•	In Alternative C-East Option, Proponents to refine bus facility designs to ensure that the pedestrian connection is entirely covered or within the concourse environments of WUS.
•	USRC to work with the District to identify a location for an adequately-sized interim bus facility or bus loading zones as close to WUS as possible to mitigate for loss of bus facility during Phase 4 of construction.
•	USRC to identify adequately-sized interim parking facilities outside the Project Area to mitigate for loss of parking capacity during Phase 4 of construction.
•	USRC to ensure there is sufficient staffing to monitor traffic levels and ensure safe pedestrian crossing at all designated pick-up and drop-off areas. USRC to coordinate with Metropolitan Police Department (MPD) on enforcement strategies.
-	USPC to coordinate with District Department of Public Works and MPD to provide

 USRC to coordinate with District Department of Public Works and MPD to provide coordinated enforcement of active curb areas along public streets.

#### DRAFT ENVIRONMENTAL IMPACT STATEMENT

# WASHINGTON UNION STATION STATION EXPANSION

#### **Proposed Measure**

- USRC to coordinate with the District Department of For-Hire Vehicles (DDFHV) to develop regulatory strategies to manage taxis and Transportation Networking Companies (TNC)'s pick-up and drop-off activity at WUS, including a performance-based strategy for reducing impacts.
- USRC to coordinate with MPD to provide coordinated enforcement to minimize queues on public roadways.
- USRC to develop, in coordination with DDOT and DDFHV, an advanced vehicle dispatching strategy to distribute taxis and TNCs and maintain consistent queue lengths.<sup>14</sup>
- USRC to manage, in coordination with DDOT and DDFHV, a regular monitoring program to reduce queues and spillback, particularly onto H Street NE from the deck roadways.
- USRC to develop a for-hire vehicle plan as part of the integrated Construction Management Plan. The Plan should prioritize maintaining safe traffic operations and distributing pick-ups and drop-offs.
- USRC to coordinate with DDOT and adjust signal timings to provide sufficient pedestrian crossing time when exiting at the front of WUS.
- USRC to pursue opportunities to provide enhanced pedestrian accommodations at the front of WUS.
- USRC to coordinate with DDOT on additional pedestrian safety infrastructure measures.
- USRC to coordinate with DDOT on appropriate bicycle accommodations and wayfinding plan to direct bicyclists to the 2nd Street shared-use portion of Metropolitan Branch Trail.
- USRC to coordinate with DDOT on appropriate bicycle facilities and strategies to reduce conflicts among bicyclists, pedestrians, and vehicles on First Street NE.
- USRC to provide enhanced facilities at the new G Street hop-on/hop-off bus location and to work with DDOT to provide an enhanced pedestrian connection to WUS entrances.
- USRC to coordinate with U.S. Citizenship and Immigration Services (USCIS) and Gallaudet University to identify new stop locations convenient to WUS.
- Proponents to work with DDOT to identify solutions out of a toolbox of traffic mitigation approaches, including, but not limited to, regular monitoring activities, turn restrictions, alternative intersection phasing, lane reassignment, parking restrictions, and street pattern changes, at the most severely impacted intersections in the study area.
- Proponents to coordinate with DDOT and WMATA on opportunities to achieve greater core transit capacity through additional lines or services in order to accommodate a greater mode shift from vehicles to transit.
- Proponents to coordinate with DDOT on transportation demand management, for-hire, and transit strategies to reduce the total number of 2040 trips by 20%.
- Proponents to incorporate truck traffic plan into integrated Construction Transportation Management Plan to minimize impacts of truck traffic on residential neighborhoods.
   Truck traffic plan to be coordinated with DDOT. Affected Advisory Neighborhood Commissions (ANCs) to be given an opportunity to comment on the plan.
- If possible without major disruptions to train operations, Amtrak to allow for the use of work trains instead of dump trucks to haul away excavation spoil.

<sup>&</sup>lt;sup>14</sup> "Transportation Networking Companies" refers to services such as Uber or Lyft.

Proposed Measure	
<ul> <li>USRC to coordinate with DDOT on required transportation demand management practices to reduce trips associated with the potential Federal air-rights development through the Comprehensive Transportation Review (CTR) process.</li> </ul>	
Noise and Vibration	
<ul> <li>Proponents to require construction contractor to prepare and implement a Construction Noise and Vibration Control Plan.</li> </ul>	
<ul> <li>This plan to include detailed predictions of construction noise and vibration levels; requirements for conducting construction noise and vibration monitoring; and, if necessary, detailed approaches to mitigate potential construction-period noise and vibration impacts.</li> </ul>	
The plan to define a process to alert the contractor of any limit exceedances and implement corrective actions.	
<ul> <li>The plan to contain a public engagement plan specifying measures that would be implemented to inform neighbors of anticipated noisy activities, noise or vibration level exceedances, and measures to be taken to remedy these exceedances.</li> </ul>	
<ul> <li>At a minimum, following measures to be included in the plan unless equivalent but more Project-or location-specific measures are identified during the preparation of the plan:</li> <li>Ensuring equipment is properly functioning and equipped with mufflers and other poise reducing features</li> </ul>	
<ul> <li>locating especially noisy equipment as far from sensitive receptors as possible.</li> <li>Using quieter construction equipment and methods, as feasible.</li> <li>Using path noise control measures such as temporary noise barriers, portable enclosures for small equipment (such as, jackhammers and concrete saws).</li> <li>Replacing back up alarms with strobes if and as allowed by Occupational Safety and</li> </ul>	
<ul> <li>Health Administration (OSHA) regulations.</li> <li>Maintaining smooth truck route surfaces within and next to the Project Area.</li> <li>Establishing and implementing procedures to maintain strong communications with neighbors.</li> </ul>	
<ul> <li>If warranted by the projections in the Construction Noise and Vibration Control Plan, construction contractor to construct a temporary noise wall approximately 12 feet tall along the perimeter of the Project Area where there are no adjacent buildings.</li> <li>The Construction Noise and Vibration Control Plan to assess buildings at risk to determine the appropriate threshold applicable to each based on its type of construction and condition</li> </ul>	
<ul> <li>The plan would define measures to be taken to minimize the risk of damage based on these thresholds. As warranted by the assessment and projections in the Construction Noise and Vibration Control Plan, and as technically feasible, alternative construction methods to be implemented would including but not limited to the following:         <ul> <li>Using a hydromill instead of a clam shovel for slurry wall construction when working close to a building.</li> <li>Using push-in type sheeting equipment rather than vibratory equipment to install</li> </ul> </li> </ul>	
<ul><li>sheet-pile walls.</li><li>Using sonic drill rigs instead of traditional drill rigs.</li></ul>	

#### **Proposed Measure**

- Among potential truck routes to and from the Project Area, Construction Noise and Vibration Control Plan to require trucks to use those with fewer residential receptors if practicable.
- Construction Noise and Vibration Control Plan to limit truck speeds or directing trucks to use travel lanes farther from receptors on multi-lane roads such as New York Avenue.
- If possible without major disruptions to train operations, Amtrak to allow for the use of work trains instead of dump trucks to haul away excavation spoil.

#### **Cultural Resources**

FRA to prepare a Programmatic Agreement to establish a process to resolve the known adverse effects of the Project in accordance with 36 C.F.R. § 800.14(b)(1)(ii). This would include the exploration of avoidance and minimization measures.

#### Safety and Security

- FRA and the Proponents to develop a Safety and Security Operations Plan that would identify procedures appropriate to the level of passenger activity; evaluate appropriate passenger screening practices; and identify funding for these purposes.
- FRA and the Proponents, in coordination with Federal law enforcement and security agencies, to identify security features that the Project design would incorporate, including measures recommended in the Threat and Vulnerability Risk Assessment (TVRA), as appropriate.
- FRA and the Project Proponents to develop a construction safety and security plan for the Project to include procedures for screening people, equipment, and goods, and for reducing risk of injury. This plan to include procedures to screen people, equipment, and goods, and to reduce the risk of injury to workers, passengers, and passers-by from construction activities. May also include background checks for contractors and their employees.
- Construction contractor to be required to ensure that the movement of heavy motorized equipment and trucks in and out of the construction site is through designated access points and designated truck routes only; use flaggers as needed to prevent conflicts between trucks and street traffic; ensure that construction-related traffic proceed in compliance with applicable speed limitations and other District traffic laws.
- During column removal work within WUS, construction contractor to be required to close off the portions of the historic station building where the column removal work would be conducted from the areas remaining accessible to the public or to station or Amtrak employees. Walls and partitions to be sufficient to provide fire protection at least equal to that provided by the existing floor and walls. Only authorized personnel to have access to the area.
- FRA and the Project Proponents to work with the private air-rights developer to address risks associated with placing parking within the deck, consistent with the recommendations of the TVRA, including consideration of solutions that would not place parking in the deck.
- In Alternatives C and D, Project design to consider measures to reduce risks to any private development above the above-ground parking facility.

Proposed Measure
FRA to require that the new owner, transferee, or lessee develop a safety and security plan that Amtrak and FRA would review and approve in any sale, transfer, or lease of the Federal air rights.
Public Health, Elderly and Persons with Disabilities
For Alternatives B, C, D, and E, USRC to ensure that parking reserved for persons with disabilities is placed near the southern end of the below-ground parking facility to minimize the distance between parking spaces and Concourse A. For Alternatives B and E, such parking to additionally be located on the first level of the parking facility. Project Proponents to ensure that the most direct path from the parking facility or bus facility to the nearest WUS entrance is clearly identified; 2 adequate signage, lighting,
and safety features are provided; access to elevators, escalators, and emergency exits is clearly marked; signs and maps are clear and concise, with large, high-contrast, raised lettering for those who rely on tactile capabilities for information; audible direction is incorporated where appropriate; close joints in walkways and transitions from ramps to walks are provided and are flush to prevent tripping and reduce the risks of canes or small wheels from getting trapped in gaps or spaces; and walkways have a continuous detectable edge to help users navigate paths safely.
Amtrak to ensure that its Red Cap service remains available to assist elderly passengers and passengers with physical, visual, and auditory disabilities in navigating and traversing the station, including moving between the platforms and the bus or parking facilities.
partitions to close off the portions of the Retail and Ticketing Concourse where the column removal work would be conducted from the areas remaining accessible to the public or to station or Amtrak employees. These walls and partitions would be sufficient to prevent the fumes from train operations in the tunnel, as well as dust from the demolition or construction work and emissions from construction equipment, from entering these areas. They would also provide adequate shielding from noise.
Project Proponents to ensure that the construction contractor maintains accessibility during construction in compliance with ADA requirements and DDOT Pedestrian Safety and Work Zone Standards, including avoiding or minimizing narrow passages, bottlenecks, or areas otherwise difficult for persons with disabilities or elderly persons with reduced mobility to navigate.
Outside WUS, the construction contractor to be required to provide protected pedestrian passages along with appropriate signage. Signs would be clear and concise and designed to communicate information to visually impaired as well as non-visually impaired persons. Where possible, audible direction would be provided. Pedestrian pathways would be kept clear of debris and obstructions, adequately drained, and with adequate passing spaces. Pedestrian pathways would have detectable edges or channelizing equipment. Pedestrians would be protected from vehicular traffic with crash-worthy barriers. Barriers would be equipped with reflective material for delineation on the side exposed to traffic. Construction contractor to be required to properly and clearly advertise lane closures, detours, alternative parking access, or use of metal plates to cover temporary trenches

# Proposed Measure Construction contractor to be required to notify the owners and occupants of the Kaiser Permanente Medical Building of any planned road or sidewalk closures sufficiently in advance to allow them to publicize these disruptions to their patients and customers as appropriate. Temporary entrances or pathways would be clearly marked and advertised. ADA-compliant access to the building would be maintained at all times. Environmental Justice In coordination with the District, for all Action Alternatives except Alternative C, East Option, USRC to identify a location for an adequately-sized interim bus facility or bus loading zones as close to WUS as possible.

# ES.13 Section 106 Consultation

## ES.13.1 What is Section 106?

Section 106 of the National Historic Preservation Act of 1966 and its implementing 748 regulations (36 CFR 800) require Federal agencies to take into account the effects of a project 749 on historic properties. Section 106 also requires that the Federal agency involve agencies, the 750 public, and "consulting parties." Consulting parties include the State Historic Preservation 751 Office (SHPO); Indian tribes; representatives of local governments; applicants for Federal 752 assistance, permits, licenses, and other approvals; and other individuals or organizations with 753 a demonstrated interest in the Project or historic preservation expertise. FRA is the Lead 754 755 Federal Agency for the Section 106 process for the Project.

# ES.13.2 What is the Status of the Section 106 Consultation Process for the Project?

FRA initiated Section 106 consultation with DC SHPO on November 23, 2015. The 756 consultation initiation letter provided information on the undertaking, the project 757 background, and management of the Section 106 process. 758 FRA then worked with the DC SHPO to identify consulting parties. FRA formally invited 759 several agencies, organizations, and individuals to participate in the process as consulting 760 parties on March 28, 2016. Table ES-9 shows the active consulting parties for the Project. 761 With input from the consulting parties, FRA: 762 Defined the Area of Potential Effects (APE) for the Project; 763 Identified the historic properties in the APE; and 764 Assessed the Project's potential effects on those historic properties. 765 

Section 106 Consulting Parties		
Advisory Council on Historic Preservation	DC Preservation League	Megabus
Akridge	District Department of Transportation	Metropolitan Washington Council of Governments
Amtrak	Federal Highway Administration	National Park Service
Advisory Neighborhood Commission (ANC) 6C	Federal Transit Administration (FTA)	National Capital Planning Commission
Architect of the Capitol	General Services Administration	National Railway Historical Society, DC Chapter
Capitol Hill Restoration Society	Government Publishing Office	National Trust for Historic Preservation
Commission of Fine Arts	Greyhound	Union Station Redevelopment Corporation
Committee of 100 on the Federal City	MARC	VRE
DC SHPO	Maryland Transit Administration	WMATA

#### Table ES-9. Agencies and Organizations Participating in the Section 106 Consultation Process

Figure ES-10 shows the APE, which includes historic properties; Architect of the Capitol 766 Assets; and culturally significant viewsheds. The assessment of effects determined that all the Action Alternatives would adversely affect three historic properties within the APE: 768 Washington Union Station; The Washington Union Station Historic Site;<sup>15</sup> and 770 

The REA Building. 

The adverse effects on these three properties would result from permanent physical and 772 visual impacts from the Project Elements and from construction-related vibration impacts. 773 Vibration levels at the Washington Union Station historic station building and the REA 774 Building may exceed the FTA's thresholds for potential structural damage applicable to some 775 types of historic building. Both buildings are large masonry structures designed in the context 776 of a large, active rail terminal, but their sensitivity to vibration has not been specifically 777 determined at this stage of the Project. 778

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<sup>&</sup>lt;sup>15</sup> The Washington Union Station Historic Site includes the First Street Tunnel and the rail terminal in addition to the historic station building and Columbus Plaza.

#### 7 - THE PART OF THE REAL PROPERTY. Issi Ima 리피 \_ 1 Project Area 152 SH 🗸 inter and X44 64 7 Area of Potential Effects (APE) 13 H in 10000 Children . and all adjusted the second **Historic Districts and Sites** Capitol Hill Historic District NR; DC National Mall Historic District NR; DC $\overline{}$ $\overline{}$ L'Enfant - McMillan Plan NR; DC S LTT Historic Properties Architect of the Capitol Heritage Assets N STREET NW AOC Architect of the Capitol NPS National Park Service DC District of Columbia Inventory of Historic Sites NHL National Historic Landmark NR National Register of Historic Places M STREET NW Acacia Building [Potentially NR and DC Eligible] 24 Russell Senate 25 Senate Parks, I Augusta Apartment Building (and Louisa Addition) NR: DC C&P Telephone Company Warehouse NR; DC 26 Belmont-Paul V L STREET NW STREET N Capital Press Building (Former) [Potentially NR and DC Eligible] 27 Square 750 Ro City Post Office (Postal Museum) DC 28 St. Aloysius Cal Dirksen and Hart Senate Office Buildings AOC 29 St Joseph's Ho K STREET NW Eckington Power Plant; Coach Yard Power Plant [DC Eligible] 30 St. Phillip's Bap Engine Company No. 3 DC 31 SunTrust Bank I STREET NW 28 Garfield Memorial AOC 32 The Summerho Gonzaga College High School [Potentially NR and DC Eligible] 33 Thurgood Mars H STREET NW Government Printing Office DC 34 Topham's Lugg Government Printing Office Warehouse No. 4 [Potentially NR and DC Eligible] 35 Uline Ice Comp 12 G STREET NW 13 Haves School DC 36 United States ( 37 United States C 14 Holodomor Ukrainian Holocaust Memor NPS F STREET NW F STREET NE 15 Japanese American Memorial to Patriotism During WWII NPS 38 United States S Joseph Gales School DC 39 Victims of Com MARYLAND AVE E STREET NW 17 Library of Congress, Thomas Jefferson Building AOC 40 Washington Un NE NR; DC 41 WUS Plaza (Co M Street High School (Perry School) MASSACHUSETTS 19 Major General Nathaneal Greene Statue NR: DC 42 Woodward and D STREET NW Mountjoy Bayly House NHL; NR 43 901 Second Street NE C STREET NW Peace Monument AOC Railway Express Agency Building [DC Eligible] 22 PENNSYLVANIAAVE 23 Robert A. Taft Memorial AOC CONSTITUTION AVE Viewsheds 21 D A Washington National Cathedral RD 0 B Washington Monument, Arlington National Cemetery, Old Post Office Building 36 INDEPENDENCE AVE. C St. Elizabeths West Campus WS D U.S. Capitol Dome C STREET SE

#### Figure ES-10. Section 106 Area of Potential Effects (APE) and Historic Properties in the APE

#### DRAFT ENVIRONMENTAL IMPACT STATEMENT

Pennsylvania Avenue National Historic Site

Union Market Historic District

WUS (Proposed Designation Expansion) ---- First Street Tunnel (Below-grade)

NR; DC NR; DC [NR and DC Eligible]

Office Building	AOC
Underground Parking and Fountain	AOC
Vomen's Equality National Monument	NHL; NR; DC
whouse Development	[Potentially NR and DC Eligible]
tholic Church	NR; DC
ome (Former)	[Potentially NR and DC Eligible]
ptist Church	DC
(Former Childs Restaurant)	[Potentially NR and DC Eligible]
buse	AOC
hall Federal Judiciary Building	AOC
age Factory (Former)	[Potentially NR and DC Eligible]
pany Plant and Arena Complex	NR; DC
Capitol	AOC
Capitol Square	AOC
Supreme Court	AOC
munism Memorial	NPS
ion Station (WUS)	NR; DC
olumbus Plaza) and Columbus Fountain	NR; DC
Lothrop Service Warehouse	NR; DC
reet NE	[Potentially NR and DC Eligible]

# UNION STATION STATION EXPANSION

Additionally, the portion of the Capitol Hill Historic District included in the APE and north of 779 Massachusetts Avenue may potentially experience an adverse effect from an increase in 780 peak-time traffic along 2nd Street NE and F street NE as well as along some residential 781 streets of the historic district if congestion on H street NE or Massachusetts Avenue prompts 782 drivers to seek alternative routes to WUS through the neighborhood. Although the Capitol 783 Hill Historic District primarily derives its significance from its architecture and its contribution 784 to the development of Washington, DC, greater traffic volumes may potentially create visual 785 impacts and disturbances that would detract from the peaceful setting some residents 786 consider to be a defining character of their historic neighborhood. 787

- The rail terminal has moderate to high potential to contain archaeological resources.
   Although there is no known archaeological site within or next to the rail terminal, the
   excavation associated with all the Action Alternatives has the potential to adversely affect
   unknown archaeological resources, if present.
- Section 106 consultation is ongoing. Table ES-10 shows the key steps taken to date. FRA is
   soliciting comments on the draft effect assessment from the consulting parties and will
   finalize the assessment after comments have been received and addressed.

Section 106 Consultation Step	Date
Section 106 Process initiated with DC SHPO	November 23, 2015
Section 106 Introduction at Public and Interagency Scoping meetings	December 7, 2015
Consulting Party Meeting #1: Project overview and undertaking	March 28, 2016
Consulting Party Meeting #2: Discussion on Proposed NEPA Study Area	May 9, 2016
Consulting Party Meeting #3: Preliminary Concepts, Proposed NEPA Study Area, Identification of Historic Properties	October 6, 2016
Consulting Party review of Draft APE and Identification of Historic Properties	August 8, 2017 – September 27, 2017
Consulting Party Meeting #4: Preliminary Alternatives, Draft APE and Identification of Historic Properties	September 7, 2017
SHPO concurrence on APE and historic properties	September 29, 2017
Consulting Party Meeting #5: Methodology for assessing effects	April 24, 2018
Consulting Party Meeting #6: Findings of the Draft Assessment of Effects Report, input from Consulting Parties on Section 106 PA	April 30, 2019
Meeting with SHPO to discuss comments on Draft APE	August 16, 2019
Consulting Party Meeting #7: Presentation of Alternative A-C; review of comments on Draft APE	November 19, 2019

#### Table ES-10. Section 106 Consultation for the WUS Expansion Project – Key Steps to Date

#### ES.13.3 What are the Next Steps in the Section 106 Consultation Process?

Once FRA has finalized the assessment of effects and received concurrence from the DC 795 SHPO with its findings, FRA will continue working with the consulting parties to avoid, 796 minimize, or mitigate adverse effects on historic properties. 797 Because the design of the Project is in its early stages, FRA anticipates preparing a 798 Programmatic Agreement (PA) to establish a process to resolve the known adverse effects of 799 the Project in accordance with 36 C.F.R. § 800.14(b)(1)(ii). This would include the exploration 800 of avoidance and minimization measures. In addition, the PA would establish a process for 801 on-going consultation and review as the level of design progresses following the Final EIS 802 (FEIS) and a Record of Decision (ROD) - and subject to funding - to ensure that form, 803 materials, architectural features, and connections (visual and physical) to surrounding 804 development are considered. FRA anticipates the PA would outline coordinated design 805 review in the context of Federal and District regulations and guidelines. 806

# ES.14 Section 4(f) Evaluation

# ES.14.1 What is Section 4(f)?

807Section 4(f) of the United States Department of Transportation Act of 1966 (49 USC 303)808protects public parks and recreational lands; wildlife refuges; and historic sites that are809eligible for or listed in the National Register of Historic Places from acquisition or conversion810to transportation use. A United States Department of Transportation agency, including FRA,811may approve a transportation project that uses these resources only if there is no feasible812and prudent avoidance alternative and the project includes all possible planning to minimize813harm to the resources, or the use meets the requirements for a *de minimis* impact.

# ES.14.2 What are the Findings of the Draft Section 4(f) Evaluation for the Project?

814	FRA has prepared a Draft Section 4(f) Evaluation that proposes the following findings:
815	<ul> <li>All Action Alternatives would have a <i>de minimis</i> impact on one Section 4(f) property:</li></ul>
816	The Metropolitan Branch Trail.
817	<ul> <li>All Action Alternatives would cause a Section 4(f) permanent incorporation of three</li></ul>
818	historic properties that would be adversely affected under Section 106: Washington
819	Union Station; the Washington Union Station Historic Site; and the REA Building.
820 821 822	There is no feasible and prudent alternative that would avoid the use of the three historic properties. An avoidance alternative is not feasible if it is not possible to build it as a matter of sound engineering judgment. It is not prudent if, among other criteria, it compromises the

- project to a degree that it is unreasonable to proceed with the project in light of its statedPurpose and Need.
- The use of the three affected historic properties would result from the reconstruction of the 825 rail terminal; demolition of the existing Claytor Concourse to build Concourse A and the train 826 hall; and construction of the H Street Concourse along the alignment of the H Street Tunnel. 827 These are features common to all the Action Alternatives and any alternative that would not 828 include these features, including the No-Action Alternative, would fail to meet the Project's 829 Purpose and Need. Without reconstructing the rail terminal, the Project would not 830 adequately support current and future long-term growth in rail service or achieve full 831 compliance with ADA and emergency egress requirements. Alternatives that would not 832 include the removal of the Claytor Concourse and construction of a train hall, Concourse A, 833 and the H Street Concourse would fail to support the following components of the Purpose 834 and Need: facilitate intermodal travel; provide a positive customer experience; enhance 835 integration with the adjacent neighborhoods, businesses, and planned land uses; and sustain 836 WUS's economic viability. 837

#### ES.14.3 What is the Alternative that would Cause the Least Overall Harm?

838	When there are no avoidance alternatives that would be feasible and prudent, FRA performs
839	a least overall harm analysis of the remaining alternatives under consideration by balancing
840	or comparing the alternatives in terms of seven factors:
841	The ability to mitigate adverse impacts to each Section 4(f) property (including any
842	measures that result in benefits to the property);
843	The relative severity of the remaining harm, after mitigation, to the protected
844	activities, attributes, or features that qualify each Section 4(f) property for
845	protection;
846	<ul> <li>The relative significance of each Section 4(f) property;</li> </ul>
847	<ul> <li>The views of the official(s) with jurisdiction over each Section 4(f) property;</li> </ul>
848	<ul> <li>The degree to which each alternative meets the purpose and need for the project;</li> </ul>
849	<ul> <li>After reasonable mitigation, the magnitude of any adverse impacts to resources not</li> </ul>
850	protected by Section 4(f); and
851	<ul> <li>Substantial differences in costs among the alternatives.</li> </ul>
852	After reviewing the six Action Alternatives in terms of these seven factors, and considering
853	the comments received from DC SHPO, FRA is proposing to conclude that Alternative A-C
854	would result in the least overall harm. While all Action Alternatives would generally have
855	similar impacts on the same three Section 4(f) properties, Alternative A-C would offer the
856	best opportunities for successful mitigation and, consequently, for causing less severe
857	remaining harm after mitigation than the other Action Alternatives, including harm to WUS,



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the most significant of the three properties. Alternative A-C would also generally have less severe impacts on resources not protected by Section 4(f) than the other Action Alternatives. Finally, Alternative A-C would cost less to construct than the other Action Alternatives.

# ES.14.4 What are the Next Steps in the Section 4(f) Process?

Section 4(f) requires coordination with the Officials with Jurisdiction (OWJ) over the Section 861 4(f) resources. FRA has been coordinating and will continue to coordinate with the National 862 Park Service (NPS; OWJ for Columbus Plaza) and the District Department of Transportation 863 (OWJ for Metropolitan Branch Trail). FRA is also coordinating with the DC SHPO and Advisory 864 Council on Historic Preservation with respect to impacts on Washington Union Station, the 865 Washington Union Station, and the REA Building. The Final Section 4(f) evaluation will 866 document the results of this ongoing consultation process along with the final findings of FRA 867 with respect to the use of Section 4(f) properties. 868

# ES.15 Agency Coordination

869FRA and the Project Proponents have coordinated and will continue to coordinate with870Federal, state, and local agencies through the NEPA process. Agency coordination included871identification and engagement of agencies to maintain open communications in keeping with87223 USC 139, Efficient Environmental Reviews for Project Decision-making. The agency873coordination process helps inform permitting and resource agencies about the Project and its874potential impacts. It ensures that the NEPA process complies with the applicable regulations.

# **ES.15.1** What are the Cooperating Agencies?

- 875As Lead Agency, FRA invited other agencies having jurisdiction by law or agencies with special876expertise on resources potentially affected by the Project to be cooperating agencies for the877EIS. Those agencies that have accepted cooperating agency status are:
- NCPC: NCPC is the Federal government's central planning agency for the National 878 Capital Region. The Commission provides overall planning guidance for Federal land 879 and buildings in the region by reviewing the design of Federal and certain local 880 projects, overseeing long-range planning for future development, and monitoring 881 capital investment by Federal agencies. NCPC has approval authority over all land 882 transfers and physical alterations involving Federal property. As applicable, NCPC 883 884 may rely on this DEIS in satisfying its obligations under NEPA as they pertain to the Project. 885
- FTA: FTA is a modal administration within the United States Department of
   Transportation. FTA's purview is public transportation and transit systems. FTA has a
   Federal interest in transit operations, including WMATA, which runs transit services
   in the Washington Metropolitan Area and has a Metrorail station at WUS. FTA

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890	provides grant assistance to WMATA and may rely on this DEIS to satisfy possible
891	Project-related obligations under NEPA.
892 893 894 895 896 897 898	NPS: A bureau of the United States Department of the Interior, NPS is the Federal agency with authority over Columbus Plaza, which is next to WUS. NPS has authority over any work associated with the redevelopment of Columbus Plaza or other NPS features. Such work would need direct permission from NPS to move forward. NPS may rely on this DEIS to satisfy its obligations under NEPA if plans affect the views, structure, or historic integrity of Columbus Plaza or any other features requiring NPS approval.
899	<ul> <li>DDOT: DDOT manages and maintains the District's publicly-owned transportation</li></ul>
900	infrastructure and is the owner of the District's street network. DDOT has jurisdiction
901	over rights-of-way in the District, including travel lanes, on-street parking, sidewalk
902	space, and public space between the property line and the edge of the sidewalk
903	nearest to the property line. DDOT is leading projects to replace the H Street Bridge
904	and extend the DC Streetcar from Union Station to Georgetown, creating a need for
905	coordination between DDOT and FRA as part of planning for the Project.

# ES.15.2 What are the Interested Agencies?

906 907 908	Interested Agencies are Federal or District agencies with a special interest in the Project. FRA invited these agencies to attend agency coordination meetings on major Project milestones. FRA also met with smaller subsets of the agencies to discuss agency-specific matters.
909	The Interested Agencies for the Project and their respective areas of interest are:
910	<ul> <li>Architect of the Capitol (AOC): Federal agency serving as steward of landmark</li></ul>
911	buildings and grounds of Capitol Hill. Adjacent landowner to WUS with interest in
912	historic preservation.
913	<ul> <li>CFA: independent Federal agency charged with giving expert advice to the President,</li></ul>
914	Congress, and the Federal and District of Columbia governments on matters of
915	design and aesthetics, as they affect the Federal interest and preserve the dignity of
916	the nation's capital.
917	<ul> <li>Office of the Deputy Mayor for Planning and Economic Development (DMPED):</li></ul>
918	District agency that assists the Mayor in the coordination, planning, supervision, and
919	execution of economic development efforts in the District. Interested in the Project
920	as a major land use planning and zoning project in the District.
921	<ul> <li>DCOP: District Agency that performs planning for neighborhoods, corridors, districts,</li></ul>
922	historic preservation, public facilities, parks and open spaces, and individual sites.
923	Interested in the Project a major land use planning and zoning project in the District.
924	<ul> <li>DC SHPO: District agency that promotes stewardship of DC's historic and cultural</li></ul>
925	resources through planning, protection, and public outreach. Interested in the
926	Project due to its potential impacts on historic properties.
927 ■ 928 929	<b>Federal Highway Administration (FHWA)</b> : Federal agency that provides stewardship over the construction, maintenance and preservation of US highways, bridges and tunnels. Working with DDOT on the H Street Bridge reconstruction
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930 ■ 931 932	<b>Government Publishing Office (GPO)</b> : Federal agency that produces, preserves, and distributes official Federal Government publications. Adjacent and affected landowner to WUS.
933 ■ 934 935	<b>General Services Administration (GSA)</b> : Federal agency that constructs, manages, and preserves government buildings. Alternatives considered in the EIS may have impacted property controlled by GSA.
936 ■ 937 938	<b>Maryland Department of Transportation (MDOT)</b> : The State of Maryland's multimodal transportation agency. Interested in the WUS expansion as a multimodal project affecting MARC.
939 ■ 940 941	<b>Maryland Transit Administration (MTA)</b> : Division of MDOT that operates multimodal transit systems, including MARC. Interested in the WUS expansion as a multimodal project.
942 ■ 943 944 945	<b>Metropolitan Washington Council of Governments (MWCOG)</b> : Independent, nonprofit association that address regional issues affecting the District, suburban Maryland, and northern Virginia. Interested in the WUS expansion as a multimodal project.
946 ■ 947 948	<b>Transportation Security Administration (TSA)</b> : Agency of the US Department of Homeland Security with authority over the security of the traveling public in the United States. Interested in WUS expansion as a major public transportation project.
949 <b>9</b> 50	<b>VRE</b> : Commuter rail service connecting Northern Virginia suburbs to WUS. Affected stakeholder as a user of WUS.
951 ■ 952 953	Virginia Department of Rail and Transportation (VA DRPT): State agency for promoting transportation for the public of Virginia. Interested in the WUS expansion as a multimodal project.
954 <b>■</b> 955	WMATA: Tri-jurisdictional government agency that operates transit services in the Washington metropolitan area. Affected adjacent stakeholder at WUS.

## **ES.15.3** How Were Agencies Engaged in the NEPA Process?

956FRA coordinated with the Cooperating and Interested Agencies through a series of meetings957as shown in Table ES-11. FRA will continue to coordinate, as appropriate, through the958conclusion of the EIS process.

Date	Meeting Type	Meeting Agenda
August 27, 2015	Pre-Scoping Meeting	Background information on the Project; FRA's responsibilities; future level of participation by each agency.
November 17, 2015	Agency Scoping Meeting	Project overview; background information; outline of next steps in the NEPA process; solicitation of comments.
Monthly (2015-2019)	DDOT Coordination Meeting	Various multimodal issues as needed.
March 30, 2016	Interested Agency Meeting	Preview of March 30, 2016 public meeting materials.
April 22, 2016	Cooperating Agency Meeting	Cooperating Agency's roles and needs; EIS and Section 106 process; design process; environmental studies.
June 30, 2016	Cooperating Agency Meeting	Cooperating Agency memorandum of understanding; Project's Purpose and Need; concept screening criteria.
October 13, 2016	Cooperating Agency Meeting	Purpose and Need; No-Action Alternative approach; refinement of preliminary screening.
October 19, 2016	Interested Agency Meeting	Preliminary concepts and concept screening.
May 10, 2017	Cooperating Agency Meeting	Review of preliminary concepts; screening of preliminary concepts; retained concept refinement; preliminary alternatives.
February 13, 2018	DC Agency Meeting <sup>1</sup>	Project overview; constructability; zoning; alternatives; parking; bus operations; multimodal planning; noise and vibration; H Street Bridge.
February 26, 2018	DC Agency Meeting <sup>1</sup>	Project's visual impacts.
March 12, 2018	Cooperating and Interested Agency Meeting	Alternatives refinement and preview of public meeting materials.
April 18, 2018	SHPO and CFA Meeting	Further discussion of track alignment and platform plan and alternatives with regard to the Train Hall.
August 21, 2018	SHPO and CFA Meeting	Follow-on to April 18, 2018 meeting.
November 21, 2019	Informational Presentation to CFA	Preferred Alternative.
January 9, 2020	NCPC Concept Review Hearing	Preferred Alternative.
February 3 and 14, 2020	Cooperating Agency Meetings	Review of Administrative DEIS.
February 7, 2020	Parking Working Group <sup>2</sup> Meeting	Kick-off.

### Table ES-11. Agency Coordination Meetings to Date

Date	Meeting Type	Meeting Agenda
February 14, 2020	Parking Working Group <sup>2</sup> Meeting	Discussion of parking program.
February 28, 2020	Parking Working Group <sup>2</sup> Meeting	Discussion of parking program.
March 6, 2020	Parking Working Group <sup>2</sup> Meeting	Discussion of parking program.

1. Representatives of DCOP, including DC SHPO, and DDOT.

2. The Parking Working Group consisted of representatives of DDOT, DCOP, and NCPC along with FRA and the Project Proponents.

# ES.15.4 How has the Public Been Involved in the NEPA and Section 106 Processes to Date?

### ES.15.4.1 Scoping Meeting

- FRA has been engaging the public since the beginning of the NEPA process through the
   publication of Project information, public meetings, and multiple opportunities to submit
   comments. All public meetings also addressed historic preservation and potential effects to
   historic properties in compliance with the public engagement requirements of Section 106.
- 963Public engagement began with the public scoping process. FRA hosted a public scoping964meeting on December 7, 2015, from 4:00 PM to 8:00 PM in the President's Room at WUS.965The meeting was advertised on the FRA Project Website (www.wusstationexpansion.com)966and in local newspapers (*The Hill Rag, Washington Express, Washington City Paper*, and967Washington Informer).
- 968Approximately 185 members of the public, representatives from local governments, and non-969governmental organizations participated in the scoping meeting. Representatives of the FRA970and the Project Proponents were available to discuss concerns or questions with the971attendees.
- 972FRA invited the public to submit comments in person at the scoping meeting, by mail to FRA,973by email through the Project website (info@wusstationexpansion.com), or by using a974comment form on the FRA website. FRA received approximately 99 comment forms, letters,975and "post-it note" comments at the scoping meeting. Additionally, 64 members of the public976submitted comments by letter or email directly to FRA. A majority of comments received977related to WUS design, including multimodal and pedestrian access and connectivity.

#### ES.15.4.2 Post-scoping Public Meetings

Following scoping, FRA held several public meetings punctuating the alternatives
 development process, as summarized in Table ES-12. At each meeting, FRA provided
 information on the status of Project planning and an opportunity for public comment.

#### DRAFT ENVIRONMENTAL IMPACT STATEMENT

Table ES-12. Public Meetings to Date			
Date	Event	Agenda	
March 30, 2016	Informational Forum	Project design concepts, historic station, concourse, tracks and platforms, bus terminal, taxi, parking, and bike and pedestrian access.	
October 19, 2016	Public Meeting	Preliminary Project concepts and concept screening.	
March 22, 2018	Public Meeting	DEIS Alternatives	

### Table ES-12. Public Meetings to Date

#### ES.15.4.3 Community Communications Committee

981 982 983 984 985		The Community Communications Committee (CCC) consisted of representatives of community organizations with a recognized and established organizational structure allowing them to communicate with their constituency and a particular interest in the Project because of its potential impacts. The CCC was comprised of representatives from the following organizations:		
986 987	•	American Bus Association	•	Downtown BID H Street Main Street
988	•	ANC 6C	•	National Association of Railroad
989 990	•	Capitol Hill Business Improvement District (BID)	•	MTA for MARC users
991	•	Capitol Hill Restoration Society	•	NoMA BID
992 993	•	Consortium for Citizens with Disabilities	•	Transportation of America USRC
994	•	DC Council Member for Ward 6	•	VRE users
995 996	•	DDOT Destination DC	•	WMATA users

FRA convened CCC meetings prior to each post-scoping public meeting. The CCC previewed
 public meeting materials, provided suggestions on clarity and comprehension, and provided
 advanced notice about questions and issues likely to be of highest interest at the meetings.
 During meetings, CCC members were available to share information with their constituents.

#### ES.15.4.4 Continuing Public Engagement

1001FRA and the Project Proponents have maintained open lines of communications with the1002public through participation in community events during which Project team members were

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- available to pass out a Project information flyer and informally answer questions. Examples 1003 include, but are not limited to, staffing an information booth at Eastern Market, the H Street 1004 Main Street Festival, and the Barracks Row Festival, and having a presence at WUS event 1005 such as public station tours or Christmas Tree Lighting ceremony.
- FRA also maintains a Project website, where all public information materials are made 1007 available for viewing or downloading: www.wusstationexpansion.com. 1008

#### **ES.16** How Can the Public Comment on the DEIS?

- In accordance with NEPA and FRA's Procedures for Considering Environmental Impacts, the 1009 DEIS is open for comment from agencies and the public. FRA filed the DEIS with the U.S. 1010 Environmental Protection Agency (EPA) and the EPA will publish a Notice of Availability 1011 (NOA) of the DEIS in the Federal Register on June 12, 2020. The public comment period will 1012 remain open for 45 days after publication of the NOA. 1013
- The DEIS is available on the Project website at: www.wusstationexpansion.com. A limited 1014 number of individual copies are available upon request at info@WUSstationexpansion.com. 1015
- Due to the ongoing coronavirus disease 2019 (COVID-19) public health emergency and 1016 consistent with the Centers for Disease Control and Prevention's guidance regarding large 1017 events and mass gatherings, FRA will conduct a virtual public hearing for the Washington 1018 Union Station Expansion Project DEIS. FRA will also hold other Project meetings virtually, 1019 including Section 106 Consulting Party meetings, and encourages submission of comments 1020 on the DEIS and other documents electronically. 1021
- The virtual public hearing is scheduled for July 14, 2020. There will be two sessions: 11:00 AM 1022 to 1:00 PM and 6:00 PM to 8:00 PM. The virtual public hearing can be accessed by dialing 1023 (866) 478-3399. 1024
- The virtual public hearing will allow members of the public, elected officials, and agency 1025 representatives to provide oral testimony on the DEIS. In addition to participating to the 1026 Public Hearing, interested members of the public may submit comments on the DEIS via the 1027 following methods: 1028
  - Sending an email or written comments to: info@WUSstationexpansion.com
  - Sending a written comment to
- **David Valenstein** 1031 Office of Railroad Policy and Development 1032 USDOT Federal Railroad Administration (MS-20 RPD-10) 1033 1200 New Jersey Avenue, SE 1034 Washington, DC 20590 1035

1036	Agencies and the public have until July 27, 2020 (45 calendar days from the NOA publication)
1037	to provide comments.
1038	All comments received will become part of the public record. Commenters' names and, when
1039	applicable, organizational affiliations, may be shown but no other identifying personal
1040	information (including personal email addresses) will be published.
1041	FRA is coordinating compliance with NEPA and Section 106 of the National Historic
1042	Preservation Act under the general principles of 36 CFR 800.8. The Draft Section 106
1043	Assessment of Effects Report is appended to this DEIS for public review. The public may
1044	provide comments on the Section 106 process and adverse effects to historic properties as
1045	part of the public comment period on the DEIS through the above methods.

# ES.17 What are the Next Steps?

1046	Pursuant to the Fixing America's Surface Transportation Act of 2015 (FAST Act), FRA plans to
1047	issue a single document consisting of the FEIS, Final Section 4(f) Evaluation, and ROD. After
1048	completion of the 45-day public comment period for the DEIS, FRA will respond to all
1049	substantive comments received from the public and government agencies. FRA's responses
1050	will be documented in the FEIS, which will address corrections and revisions, as appropriate.
1051	FRA plans to publish a combined document that considers comments from the comment
1052	period unless statutory criteria or practicability considerations preclude issuing a combined
1053	document. <sup>16</sup> The ROD will identify the alternative selected for implementation, explain the
1054	rationale for this selection, and list mitigation measures and environmental commitments.

# **ES.18** Organization of this DEIS

1055**Table ES-13** lists the chapters of the DEIS along with a summary description of each chapter's1056contents.

<sup>&</sup>lt;sup>16</sup> 49 USC 304a provides that FRA must prepare a single document that consists of a FEIS and ROD to the maximum extent practicable.

Table ES-15. Organization of the DEIS			
Chapter	Title	Торіс	
1	Introduction	This chapter introduces the Project and Project setting; provides background and historical information about the Project; identifies FRA as the lead Federal Agency; and lists the Cooperating Agencies.	
2	Purpose and Need	This chapter documents the Purpose of the Project and the Needs the Project proposes to address.	
3	Alternatives	This chapter describes the Project alternatives that FRA has retained for analysis in this DEIS. The chapter also describes the multi-step alternatives development and evaluation process FRA conducted to identify a reasonable range of alternatives.	
4	Affected Environment	This chapter documents the environment that the Project may potentially affect.	
5	Environmental Consequences	This chapter discusses the potential impacts of the Project alternatives (including the No-Action Alternative). It also lists measures FRA is considering to avoid, minimize, or mitigate adverse impacts.	
6	Draft Section 4(f) Evaluation	This chapter evaluates the Project in compliance with Section 4(f) of the Department of Transportation Act of 1966.	
7	Mitigation Measures and Project Commitments	This chapter list the measures being considered by FRA to avoid, minimize, or mitigate adverse impacts and applicable permit requirements	
8	Public Involvement and Agency Coordination	This chapter summarizes the steps taken to inform and obtain input from the public and relevant Federal and District agencies to date.	
9	Distribution of the Draft EIS	This chapter lists the elected officials, agencies, and organizations that received notice of the publication of the DEIS.	
10	References	This chapter lists the documents and publication consulted in preparing the DEIS.	
11	Glossary	This chapter provides the definition of technical terms used in the DEIS.	
12	Preparers	This chapter identifies the persons involve in the preparation of the DEIS.	

#### Table ES-13. Organization of the DEIS