6 TRANSPORTATION EFFECTS

This chapter describes the long-term and construction effects of the No Build Alternative, the Wiehle Avenue Extension, and the full LPA on the local and regional transportation network. The analysis includes the following sections:

Section 6.1 discusses the existing and planned transit system in the Dulles Corridor and the potential effects of implementing the No Build Alternative, the Wiehle Avenue Extension, and the full LPA.

Section 6.2 presents the existing and planned roadway system in the Dulles Corridor, as well as the potential effects of the No Build Alternative, the Wiehle Avenue Extension, and the full LPA on the planned system. Measures proposed to mitigate traffic impacts are also described.

Section 6.3 presents the anticipated long-term effects associated with the No Build Alternative, the Wiehle Avenue Extension, and the full LPA on other transportation facilities in the corridor. The section also presents the proposed mitigation measures for any anticipated adverse effects.

The alternative formerly known as "LPA Phase 1" in the October 2003 Supplemental Draft Environmental Impact Statement and Section 4(f) Evaluation has been renamed the Wiehle Avenue Extension in this Final EIS and is expected to begin operations in 2011. This change reflects the federal approach to the project's funding under the Federal Transit Administration's New Starts program. It will assure consistency among the environmental, engineering and financial documents during the project's development.

In the October 2003 Supplemental Draft Environmental Impact Statement and Section 4(f) Evaluation as well as this Final EIS, the term "full LPA" represents the Wiehle Avenue Extension and the second phase of the Dulles Corridor Rapid Transit Project. This second phase would extend west from Wiehle Avenue to Washington Dulles International Airport and Route 772 and is expected to begin operations in 2015.

The term "LPA", "proposed action", or "selected LPA" refers to both the Wiehle Avenue Extension and the full LPA collectively.

6.1 TRANSIT EFFECTS

The Dulles Corridor Rapid Transit Project would add rapid transit service, in the form of Metrorail and express bus service, to the Dulles Corridor. The corridor is currently served by express and local bus services, but implementation of the Wiehle Avenue Extension and full LPA would result in a substantial increase in high-quality transit capacity.

This section discusses the existing and planned transit system in the Dulles Corridor, as well as the potential effects of implementing the Wiehle Avenue Extension and the full LPA on the planned transit system. In Section 6.1.1, the methodology for evaluating transit effects is discussed. Section 6.1.2

summarizes the existing transit system in the Dulles Corridor and the planned transit system without the Dulles Corridor Rapid Transit Project which represents the No Build Alternative. Section 6.1.3 presents the anticipated long-term effects associated with the No Build Alternative, the Wiehle Avenue Extension and the full LPA, in terms of transit ridership, transit travel times, transit capacity, operations and maintenance costs, and other measures of transit service. Section 6.1.4 provides an overview of the expected effects on transit service during construction of the Wiehle Avenue Extension and the full LPA, and Section 6.1.5 presents proposed mitigation measures for any anticipated adverse effects.

6.1.1 METHODOLOGY

The anticipated effects of the No Build Alternative, the Wiehle Avenue Extension and full LPA on transit ridership and other transit operating characteristics were evaluated using the Northern Virginia Major Investment Study Model (NVMISM). This model was developed for the original Dulles Corridor MIS and was last used, prior to this project, for the I-66 MIS. The model used regionally adopted population and land use data (Metropolitan Washington Council of Governments [MWCOG] Round 6.3 Cooperative Land Use Forecasts), future highway and transit networks, transit operating plans developed for the project, assumptions regarding tolls on the Dulles Toll Road, and other specific model inputs described in the following paragraphs.

Travel demand forecast results are based on the MWCOG Round 6.3 Cooperative Land Use Forecasts. These forecasts represent the regionally adopted population and employment forecasts, through 2025, for the metropolitan Washington area, including Fairfax and Loudoun counties. By federal regulation, such regionally approved land use forecasts must be used in the travel demand analysis of each alternative studied in an EIS. More specifically, model assumptions regarding socioeconomic variables and land use must be consistent among alternatives so as to not bias the results of the travel demand forecasting process.

The transportation analysis zones (TAZs) used for the travel demand forecasts were based on the TAZ structure used for MWCOG's regional travel demand forecasting model set. By federal regulation, this TAZ structure must be used to ensure an accurate comparison of transportation projects. Since the TAZs in Tysons Corner, Reston, and Loudoun County were quite large, the project team worked with Fairfax and Loudoun counties to split these zones to more accurately distribute population and employment data, as well as land use densities within the smaller zones. No adjustments were made to the original TAZ boundaries or total TAZ population and employment data.

Operating plans for the No Build Alternative, the Wiehle Avenue Extension and full LPA were developed based on a common set of assumptions relative to fares, service frequencies, vehicle load factors, vehicle dwell times, corridor parking capacities, and other service variables. Each alternative was then modeled for its opening year (2011 for the Wiehle Avenue Extension, 2015 for the full LPA) and forecast year (2025) based on a preliminary service plan. Following initial model runs, these preliminary service plans were adjusted to provide adequate capacity for ridership demand at maximum load points (through equilibration). The operating plans for the full LPA reflect line-haul services operating within the corridor formed by the Dulles Connector Road, the Dulles International Airport Access Highway (DIAAH), and the Dulles Toll Road, as well as complementary local and feeder bus service operating in activity centers along the corridor.

6.1.2 EXISTING AND PLANNED TRANSIT SYSTEM

As described in Chapters 1 and 2, the existing transit system in the Dulles Corridor consists primarily of express and local bus services provided by Fairfax County, Loudoun County, and the Washington Metropolitan Area Transit Authority (WMATA). Transit services for the three providers are integrated with transit centers and park-and-ride lots located throughout the corridor.

6.1.2.1 Primary Transit Services

Existing and planned services and facilities in the Dulles Corridor are described in Chapters 1 and 2, and the anticipated No Build transit network in 2025 is depicted in Figure 2.4-1. Table 6.1-1 provides a summary of the primary transit services currently operating in the corridor.

Table 6.1-1: Summary of Primary Transit Services

	WMATA		Fairfax County	Loudoun County
Name of Service	Metrorail	Metrobus	Fairfax Connector	Loudoun County Transit
Type of Service	Regional Rail	Regional service with some local circulation	Express, feeder, and local circulator bus	Express, reverse commute, and local circulator bus
Total Number of Routes	5 lines	322 routes	54 routes	3 commuter route families, 4 circulator routes
Number of Routes in Corridor	1 line	14 routes	28 routes	3 commuter route families, 2 circulator routes
Peak Service Frequencies in Corridor	6 minutes	15-30 minutes	5 – 30 minutes	~ 15 minutes

Information on transit travel times and other service characteristics for the transit network in the No Build Alternative is provided in Section 6.2.3. More detailed information on transit centers and other transit services in the Dulles Corridor is provided in the following sections.

6.1.2.2 Transit Centers

An important element of existing and near-term planned transit service in the Dulles Corridor is its network of bus transit centers and park-and-ride lots. Figure 6.1-1 presents the location of the park-and-ride facilities and bus transit centers within the corridor. Each of these facilities is identified and described in Table 6.1-2. Facilities that also provide parking are described in further detail in Section 6.3. The Tysons-West*Park Transit Station is the primary bus transfer facility for Tysons Corner, particularly for express bus service and other travel to and from the north, west, and east. In addition, an on-street facility on the ring road of the Tysons Corner Center shopping mall currently serves as a transfer point for internal trips and trips oriented south and east of Tysons Corner, as well as some local Fairfax Connector routes from the west.

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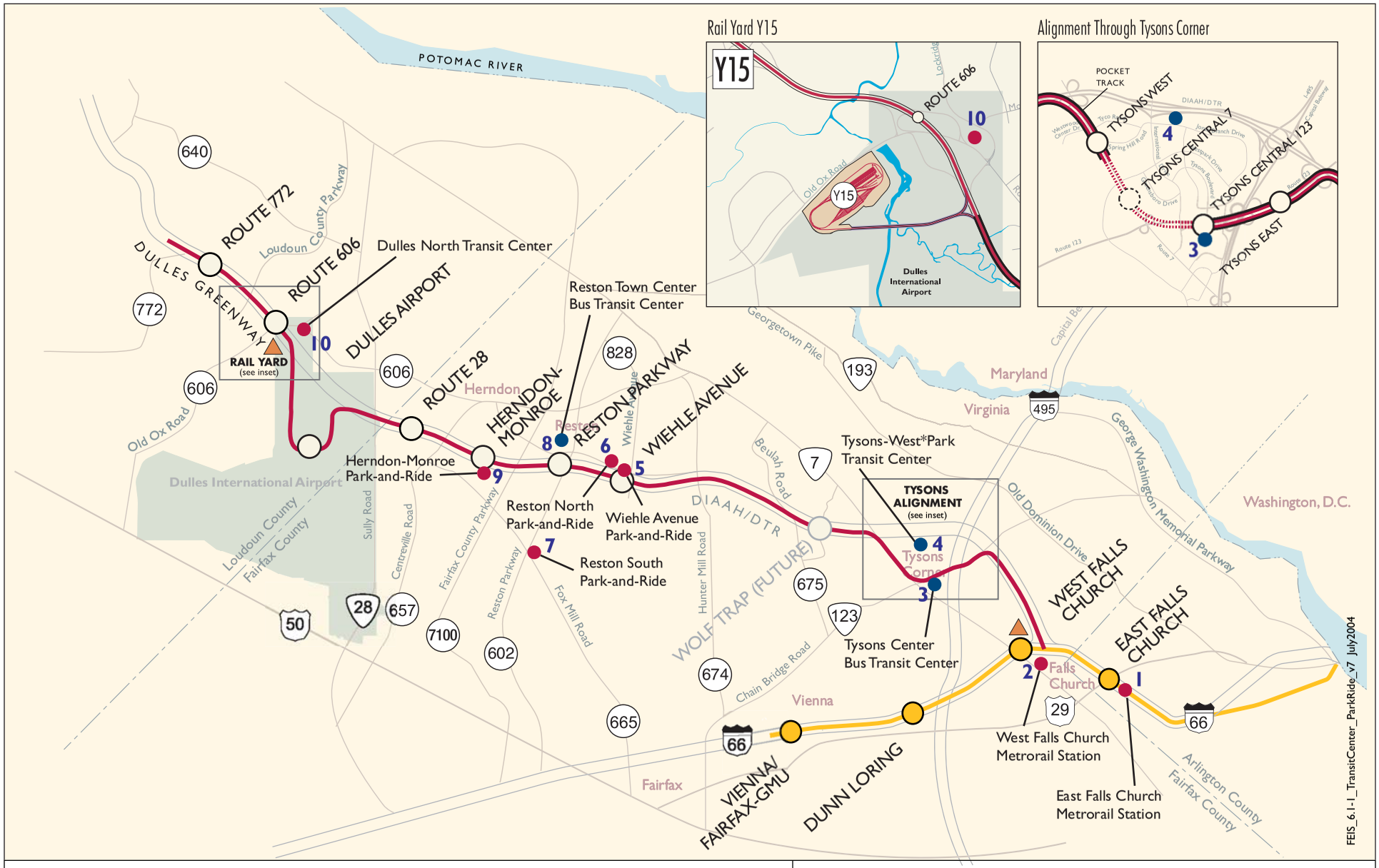

Figure 6.1-1

Transit Centers and Park-and-Ride Lots

Dulles Corridor
Rapid Transit Project

Table 6.1-2: Bus Transit Facilities in the Dulles Corridor

Bus Transit Centers	Location	Owner/ Operator	No. of Bays	Kiss & Ride	Parking	Connecting Services
East Falls Church Metrorail Station	I-66 at Sycamore Drive, Arlington	WMATA	8	Yes	Yes	Metrobus
West Falls Church Metrorail Station (south side)	I-66 at Route 7, Falls Church	WMATA	8	Yes	Yes	Metrobus, Private Shuttles
West Falls Church Metrorail Station (north side)	I-66 at Route 7, Falls Church	WMATA	9	No	Yes	Metrobus, Fairfax Connector, Washington Flyer
Tysons Corner Center Bus Stop	Tysons Center Ring Road, south side of mall	Tysons Corner I	4	No	No	Metrobus, Fairfax Connector
Tysons-West*Park Transit Station	8300 Jones Branch Road, McLean	Fairfax County	10	Yes	No	Metrobus, Fairfax Connector
Reston East	1860 Wiehle Avenue, Reston	Fairfax County	8	Yes	Yes	Fairfax Connector, RIBS, Private Shuttles
Reston North (overflow parking for Reston East)	Sunset Hills Road at Wiehle Avenue, Reston	VDOT	2	No	Yes	Fairfax Connector, RIBS
Reston South	Reston Parkway at Fox Mill Road, Reston	Fairfax County	3	Yes	Yes	Fairfax Connector, RIBS
Reston Town Center	Explorer Street between Market Street and Bluemont Way, Reston	Fairfax County	2	No	No	Fairfax Connector, RIBS
Herndon-Monroe	1230 Sunrise Valley Drive, Herndon	Fairfax County	8	Yes	Yes	Fairfax Connector, RIBS
Dulles North Transit Center	Route 606 at Route 789, Loudoun County	VDOT	6	Yes	Yes	Loudoun County Express Bus

6.1.2.3 Other Transit Services

Aside from fixed route service provided by WMATA and each of the counties, a few other transit services operate in the corridor. The Potomac and Rappahannock Transportation Commission (PRTC)—which operates the Virginia Railway Express (VRE) commuter rail service between Northern Virginia and Washington, D.C.—also provides weekday commuter bus service between Manassas and Washington, D.C., with an hourly stop at the West Falls Church Metrorail Station. The City of Falls Church initiated its own bus service in late 2000 with two circulator routes linking the East and West Falls Church Metrorail stations with Seven Corners and several Falls Church locations. The City of Fairfax's City-University-Energysave (CUE) bus system provides fixed-route service between the Vienna/Fairfax- George Mason University (GMU) Metrorail Station, George Mason University, and other locations in the City of Fairfax.

In addition to Metrobus and Metrorail services, WMATA provides demand-response MetroAccess paratransit service throughout the Washington metropolitan region. MetroAccess provides curb-to-curb service to persons with disabilities who cannot access public transportation and have been certified as eligible to use paratransit service. MetroAccess service is provided through contract with local operators.

Loudoun Transit is a private not-for-profit operator providing limited fixed route bus service in Leesburg and advance registration on-demand transportation in Leesburg and the Sterling areas.

Washington Flyer coach service is operated by the Metropolitan Washington Airports Authority (MWAA) and provides scheduled shuttle service between Dulles Airport and the West Falls Church Metrorail Station every half-hour.

6.1.3 LONG-TERM EFFECTS

Two of the major goals of the Dulles Corridor Rapid Transit Project, as outlined in Chapter 1 of this document, are to increase transit ridership and improve transportation service in the corridor. This section presents the anticipated long-term effects of the No Build Alternative, the Wiehle Avenue Extension, and the full LPA on the Dulles Corridor transit system and highlights the effectiveness in meeting these goals.

Both the Wiehle Avenue Extension and full LPA meet these goals more effectively than the No Build Alternative. The full LPA is the most effective in meeting these goals.

6.1.3.1 Transit Ridership

The change in ridership resulting from implementation of the rapid transit service in the Dulles Corridor is a measure of fundamental importance in assessing the transit effects of the Wiehle Avenue Extension and full LPA. The potential influences of the Wiehle Avenue Extension and full LPA on regional transit ridership, ridership at proposed stations in the corridor, and the transit mode share in the corridor, in relation to the No Build Alternative, are discussed below.

While the Wiehle Avenue Extension and the full LPA would both increase ridership and mode share compared to the No Build Alternative, the full LPA would result in the greatest increases. The full LPA is projected to attract 41,600 new average weekday trips to the regional transit system in its opening year (2015) while the Wiehle Avenue Extension would attract 29,100 in its opening year (2011). In 2025, the full LPA would attract nearly 47,800 new average weekday trips to the regional transit system while the Wiehle Avenue Extension would attract 34,300 new trips (38 percent fewer new trips). The full LPA is projected to increase the transit mode share at various activity centers in the corridor by 3 to 5 percent. The Wiehle Avenue Extension would result in a mode share increase that is 1 to 2 percent lower.

6.1.3.2 Regional Transit Ridership

Table 6.1-3 presents the average weekday ridership estimates associated with the Wiehle Avenue Extension and full LPA in relation to the No Build Alternative. The first two rows of the table present ridership related specifically to the Dulles Corridor, while the remaining four rows present forecast activity for the entire Washington metropolitan region.

Table 6.1-3: Average Weekday Transit Patronage Forecasts

		Locally Preferred Alternative							
		Wiehle Avenue Extension (2011)				Wiehle Avenue Extension (2025)			
	No Build Alternative (2025)	No Build Alternative	Metro-rail	Corridor Express Bus	Total	Metro-rail	Corridor Express Bus	Total	Full LPA (2025)
Project-Related Corridor Ridership Activity									
Total Corridor Trips	n.a.	n.a.	59,000	3,800[1]	62,800	68,500	4,800[1]	73,300	91,200
Total Corridor Boardings	n.a.	n.a.	24,600	13,200	37,800	27,300	16,800	44,100	57,500
Project-Related Regional Ridership Activity									
Regional HBW Rail/ Corridor Express Bus	541,100	471,400		490,600	n.a.		563,500	n.a.	575,300
Regional Total Rail/ Corridor Express Bus	914,500	788,400		826,500	n.a.		960,600	n.a.	977,300
Regional Total Transit Trips	1,331,200	1,159,500		1,188,600	n.a.		1,365,600	n.a.	1,379,000
Regional New Trips	n.a.	n.a.		29,100	n.a.		34,400	n.a.	47,800

HBW – home-based work

[1] This figure represents ridership activity that occurs on express bus only with no transfer to rail. Trips that start with express bus but also involve utilization of Metrorail are included in the Metrorail column.

The "Total Corridor Trips" row reflects all corridor-related boardings and alightings for the Metrorail system and/or corridor express bus service, including passengers entering the system outside of the corridor but exiting at a corridor station or stop. "Total Corridor Boardings" represent all trips that board the system at a station within the Dulles Corridor.

The "Regional Home Base Work Trips (HBW) Rail/Corridor Express Bus Trips" row represents total daily regional rail or corridor express bus trips that begin at the trip maker's home and end at their place of work. Home-based work trips are an important set of trips to consider in ridership analysis because trips between home and work comprise the largest segment of public transportation use. The "Regional Total Rail/Corridor Express Bus Trips" row represents all daily Metrorail and/or corridor express bus trips, not just those used for the commute between home and work. "Regional Total Transit Trips" reflects forecast ridership on the assumed regional transit network, and includes Metrorail trips, corridor express bus trips, commuter rail trips, and trips made by local bus. The "Regional New Trips" column presents the number of new transit trips attracted to the regional transit network as a result of the implementation of each alternative. The number of new trips for an alternative is calculated by subtracting the No Build Alternative "Regional Total Transit Trips" from the alternative's "Regional Total Transit Trips" for the same year of analysis.

The No Build Alternative would not provide additional rapid transit service in the Dulles Corridor; therefore, there would be no project-related effects from this alternative.

The Wiehle Avenue Extension and the full LPA are expected to increase the number of regional transit trips, and substantially increase the number of new trips on the system. Overall, in 2025, the full LPA would result in approximately 47,800 new average weekday trips on the system. Considered alone, the Wiehle Avenue Extension would attract approximately 34,400 new average weekday trips in 2025.

The Wiehle Avenue Extension would generate fewer corridor boardings than the full LPA due to the required transfer at Wiehle Avenue for many trips and the reduced attractiveness of corridor express bus service to many riders (relative to rail). Considered alone, the Wiehle Avenue Extension is projected to generate approximately 81 percent of the total 2025 daily corridor boardings as compared to the full LPA (including corridor express bus riders). Approximately 13,400 fewer regional new trips would be attracted to the regional transit system in 2025 for the Wiehle Avenue Extension. The Wiehle Avenue Extension has fewer regional total transit trips in its opening year than the No Build Alternative in 2025. This difference occurs because regional growth in population and employment by 2025 would significantly increase regional transit ridership with or without the Dulles Corridor improvements.

A. Daily Station Boardings

Corridor-specific transit ridership is an important measure of the impact of the Wiehle Avenue Extension and full LPA within each station area in the corridor. The estimated number of daily boardings at proposed corridor stations is shown in Table 6.1-4.

Table 6.1-4: Forecast Daily Station Boardings in Dulles Corridor

		Locally Preferred Alternative				
		Wiehle Avenue Extension (2011)		Wiehle Avenue Extension (2025)		Full LPA (2025)
	No Build Alternative	Metrorail	Corridor Express Bus	Metrorail	Corridor Express Bus	Metrorail
Tysons East	n.a.	3,803	n.a.	3,920	n.a.	4,092
Tysons Central 123	n.a.	5,209	n.a.	5,726	n.a.	6,067
Tysons Central 7	n.a.	3,306	n.a.	3,595	n.a.	3,838
Tysons West	n.a.	4,002	n.a.	4,391	n.a.	4,627
Wiehle Avenue	n.a.	8,244	n.a.	9,697	n.a.	6,498
Reston Parkway	n.a.	n.a.	n.a.	n.a.	n.a.	4,708
Reston Town Center	n.a.	n.a.	1,546	n.a.	1,534	n.a.
Herndon-Monroe	n.a.	n.a.	4,746	n.a.	5,531	8,775
Route 28	n.a.	n.a.	n.a.	n.a.	n.a.	1,226
Dulles Airport	n.a.	n.a.	3,466	n.a.	4,986	6,200
Route 606	n.a.	n.a.	1,485	n.a.	1,661	4,485
Route 772	n.a.	n.a.	1,973	n.a.	3,110	6,961

n.a. = not applicable – no stations exist at those locations for the alternative.

As the data in the table show, a higher number of boardings occur in the full LPA in 2025 versus the Wiehle Avenue Extension in 2025, especially for the outer stations being served by corridor express service in the Wiehle Avenue Extension. Heavy boardings in the Wiehle Avenue Extension at Wiehle Avenue reflect the fact that it will be the interim terminal station prior to the completion of the full LPA. These high numbers decline under the full LPA, with higher boardings occurring at Herndon-Monroe in the full LPA. With direct service to Herndon-Monroe, Herndon-Monroe is a more logical station for riders coming from Reston and Herndon, and therefore results in an increase in boardings. A very significant increase in boardings at Route 606 and 772 under the full LPA reflect the increased attractiveness of rail versus corridor express bus service. Heavy boardings in Tysons, especially at Tyson Central 123 reflect

high employment densities in the area as well as the fact that this station is the nexus for Tysons shuttle services.

B. Corridor Transit Mode Share

Changes in transit mode share identify whether overall corridor travel choices are changing because people have switched to transit from their automobiles due to the presence of the new corridor rapid transit service. Transit mode share analysis distinguishes between absolute transit volumes and the overall effectiveness of transit service in meeting regional travel needs. If transit ridership goes up while its mode share declines, then transit is not succeeding in contributing to the performance of the overall regional transportation system.

The effects of the Wiehle Avenue Extension and full LPA on corridor transit mode share, in relation to the No Build Alternative, are summarized below in Tables 6.1-5 and 6.1-6.

Table 6.1-5: Transit Mode Share for Home-Based Work Trips (Trips Attracted to the Dulles Corridor)

		Locally Preferred Alternative		
	No Build Alternative (2025)	Wiehle Avenue Extension (2011)	Wiehle Avenue Extension (2025)	Full LPA (2025)
Tysons Corner	8.4%	11.9%	11.6%	12.6%
Reston	6.4%	7.9%	7.6%	9.6%
Herndon/Dulles	4.4%	5.8%	6.2%	7.9%
Loudoun East	1.0%	2.0%	2.1%	2.7%

Table 6.1-6: Transit Mode Share for Home-Based Work Trips (Trips Produced in the Dulles Corridor)

		Locally Preferred Alternative		
	No Build Alternative (2025)	Wiehle Avenue Extension (2011)	Wiehle Avenue Extension (2025)	Full LPA (2025)
Tysons Corner	25.9%	33.5%	34.3%	34.4%
Reston	11.7%	15.1%	15.4%	17.4%
Herndon/Dulles	10.8%	13.9%	14.8%	16.2%
Loudoun East	2.9%	6.9%	6.8%	10.8%

Relative to the No Build Alternative, home-based work transit mode share for the full LPA would increase in each of the corridor sub areas due to the implementation of a much more attractive transit service than the bus only service provided in the No Build Alternative.

The Wiehle Avenue Extension would result in less improvement in home-based work transit mode share at activity centers than the full LPA, especially in the western end of the corridor, due to a lower overall ridership. However, in the eastern end of the corridor the increase in mode share for the Wiehle Avenue Extension would result in a significant improvement over No Build Alternative mode shares.

C. Transit Travel Times

The level of convenience for passengers using transit is directly related to the amount of time that is required to make a trip by bus or rail versus alternative modes such as the automobile. Transit travel time includes time spent accessing the station or stop, time spent waiting for the bus or train, time spent riding

the bus or train, and the time spent transferring between transit services. The longer each of these transit trip components take, the less attractive transit becomes relative to other modes for travelers who have a choice of mode. For passengers who do not have access to other modes and thus rely on transit to meet their basic mobility needs, excessive travel times result in less time available to spend on other priorities. Table 6.1-7 shows transit travel times for the No Build Alternative, the Wiehle Avenue Extension, and the full LPA in 2025 for select origin/destination (O/D) pairs within the region.

Table 6.1-7: Transit Travel Times for Select O/D Pairs in Minutes

		No Build Alternative		Locally Preferred Alternative		
Origin	**Destination**	**Highway (2025)**	**Transit (2025)**	**Wiehle Avenue Extension (2011)**	**Wiehle Avenue Extension (2025)**	**Full LPA (2025)**
Tysons West – West*Park Area	Metro Center	35	37	38	38	38
Wiehle Avenue	Union Station	59	57	57	57	51
Rosslyn	Dulles Airport	36	64	54	54	43
Wiehle Avenue	Pentagon	57	50	57	57	55
Herndon-Monroe	Tysons Central 123	26	42	28	28	26
Tysons West – Tysons West Station Area	Dulles Airport	21	72	30	30	19
Wiehle Avenue	Tysons East – Tysons East Station Area	25	46	26	26	19
Route 606	Metro Center	52	60	65	65	60

For all but three origin-destination (O/D) pairs, the full LPA would improve transit travel times over those for the No Build Alternative, especially for reverse commute trips and trips with one end in Tysons Corner. For many trips, transit travel times would improve by 20 to 30 minutes. The transit travel times for the full LPA would generally be time-competitive with highway travel (travel by private vehicle).

In general, the Wiehle Avenue Extension would offer less travel time savings than the full LPA, but it would still offer an improvement in transit travel times over the No Build Alternative for most O/D pairs. For trips traveling between Wiehle Avenue and points east, the Wiehle Avenue Extension would provide travel times similar to the full LPA, because the Metrorail service would be similar in this portion of corridor. For trips with at least one end west of Wiehle Avenue, the Wiehle Avenue Extension would have greater travel times than the full LPA due to transfer requirements and decreased service frequency in the reverse peak direction. For these trips, the Wiehle Avenue Extension would generally have travel times that are 10 to 15 minutes longer than the full LPA.

6.1.3.3 Effects on Travel Patterns

The data presented in this section complements the mode share data presented above in Tables 6.1-5 and 6.1-6. The purpose of this data is to show the changes in trips being generated and attracted to different parts of the corridor due to the implementation of the full LPA or the Wiehle Avenue Extension. Specifically, the data show the impacts on mode choice of a greater range of transit options for people

starting trips in the corridor as well as for people making trips into the corridor. Tables 6.1-8 and 6.1-9 show the number of daily transit trips attracted to and produced in the Dulles Corridor.

Table 6.1-8: Number of Daily Transit Trips Attracted to Corridor Geographic Areas

		Locally Preferred Alternative		
	No Build Alternative (2025)	Wiehle Avenue Extension (2011)	Wiehle Avenue Extension (2025)	Full LPA (2025)
Tysons Corner	13,870	19,335	20,514	21,981
Reston	7,942	9,382	9,168	10,888
Herndon/Dulles	5,449	5,722	6,808	8,282
Loudoun East	3,133	8,742	12,758	15,389

Table 6.1-9: Number of Daily Transit Trips Produced in Corridor Geographic Areas

		Locally Preferred Alternative		
	No Build Alternative (2025)	Wiehle Avenue Extension (2011)	Wiehle Avenue Extension (2025)	Full LPA (2025)
Tysons Corner	6,034	8,908	9,732	9,787
Reston	11,980	13,333	14,786	16,068
Herndon/Dulles	7,793	8,104	9,556	10,602
Loudoun East	6,505	9,450	13,359	17,955

With implementation of the Wiehle Avenue Extension and the full LPA, trip productions and attractions for all parts of the corridor show increases with the most dramatic increases in trips in the westernmost part of the corridor. While this increase is especially notable in the full LPA, increases in the Wiehle Avenue Extension are also significant. These increases are directly related to providing greater transit choices in the corridor, especially for reverse commute and off-peak trips.

6.1.3.4 Transit Capacity

Transit capacity in the corridor represents the amount of physical capacity available to carry passengers and provides an understanding of the number of riders that can be comfortably accommodated in the corridor during peak travel times. This measure also provides an understanding of the level of service provided and how well the Wiehle Avenue Extension and full LPA support the corridor's mobility needs. Total capacity will vary according to the number of vehicles in service and the capacity of each of those vehicles. Vehicle capacity, in turn, will vary based on vehicle size, policies regarding the level of acceptable vehicle loading, and the allowable number of standing passengers.

Table 6.1-10 summarizes the transit capacity provided at each of the corridor stations or stops (or station areas in the No Build Alternative) for service in the a.m. peak hour in the peak direction. The figures in the table represent the number of peak-hour spaces available to carry passengers at each station or station area under each alternative.

Table 6.1-10: Transit Capacity by Alternative in the a.m. Peak Hour

Station/Stop	No Build Alternative (2025)	Locally Preferred Alternative		
		Wiehle Avenue Extension (2011)	Wiehle Avenue Extension (2025)	Full LPA (2025)
East Falls Church	21,120	18,240	21,120	21,120
West Falls Church	21,120	10,560	12,480	12,480
Tysons East	90	7,680	8,640	8,640
Tysons Central 7	n.a.	7,680	8,640	8,640
Tysons Central 123	400	7,680	8,640	8,640
Tysons West	n.a.	7,680	8,640	8,640
Wiehle Avenue	720	7,860	8,820	8,820
Reston Parkway	n.a.	n.a.	n.a.	8,640
Herndon-Monroe	1,012	1,665	2,430	8,640
Route 28	n.a.	n.a.	n.a.	8,640
Dulles Airport	n.a.	180	180	8,640
Route 606	495	2,295	2,565	8,955
Route 772	n.a.	1,980	2,250	8,640

NOTE: Vehicle Capacity Assumptions: Metrorail – 120 passengers per vehicle; Fairfax Connector and Loudoun County – 45 passengers per vehicle (assumes some standees).
n.a. = transit services not provided to this station area under the alternative.

In the full LPA, transit capacity at all stations in the corridor between Route 772 and Tysons East would increase relative to the No Build Alternative because the multiple car trains in the full LPA would provide significantly higher capacity than the single buses providing corridor service under the No Build Alternative (furthermore, a single rail car also has a higher capacity than a single bus).

In the Wiehle Avenue Extension, similar improvements in transit capacity would occur relative to the No Build Alternative for the corridor stations from Wiehle Avenue east (in the Wiehle Avenue Extension, Wiehle Avenue will be the western terminal station for the Wiehle Avenue Extension rail service). This improvement in capacity would occur both in the short term as well as in the long term, if the full LPA is not implemented in its entirety. In the Wiehle Avenue Extension, west of Wiehle Avenue, transit capacity would be much less than the full LPA because transit service would be provided by buses (i.e., single vehicles) rather than by multiple car trains. In 2025, the Wiehle Avenue Extension would provide approximately 30 percent of the capacity of the full LPA west of Wiehle Avenue.

6.1.3.5 Hours of Operation and Frequency of Service

Hours of operation and service frequency, especially in the off-peak, are important determinants of the quality and convenience of transit service that would be provided in the Dulles Corridor, including how well transit supports everyday activities and travel needs other than peak hour commutes.

For the Wiehle Avenue Extension, hours of operation for both Metrorail and corridor express bus services would correspond to the existing Metrorail system's operating hours: 5:00 a.m. to 12 p.m. on weekdays (3 a.m. on Friday), 7 a.m. to 3 a.m. on Saturdays, and 7 a.m. to 12 p.m. on Sundays. In addition, overall span of service for local/feeder bus services would correspond to these operating hours. Limited "night

owl" bus service operates beyond these hours throughout the region. For the full LPA, the Dulles Corridor line would have the same hours of operation as described for the Wiehle Avenue Extension.

While the hours of operation are comparable between the No Build Alternative, the Wiehle Avenue Extension, and the full LPA, service frequencies—particularly in the off-peak periods (midday and evening)—would be much better for the full LPA than for the No Build Alternative. Table 6.1-11 summarizes the range of service frequencies planned for each alternative in both the peak and off-peak periods.

The service frequencies for the full LPA were designed to be consistent with planned Metrorail operations. Accordingly, the full LPA would operate with 7-minute headways in the peak period and 12-minute headways at most other times. In the peak period, this level of service is better than what would be provided under the No Build Alternative, and in the off-peak period—where headways for most travel markets in the corridor improve from 30 minutes to 12 minutes—the level of service would be far better than that provided by the No Build Alternative.

Table 6.1-11: Peak and Off-Peak Headways in the Dulles Corridor (in minutes)

			Locally Preferred Alternative		
		No Build Alternative (2025)	Wiehle Avenue Extension (2011)	Wiehle Avenue Extension (2025)	Full LPA (2025)
Peak Period	Fairfax County Connector Service	5-30	15-30	15-30	15-30
	Loudoun County Commuter Service	15	15	15	No Service
	Metrorail	No Service	7	7	7
	Metrobus	15-30	15-30	15-30	15-30
	Corridor Express Bus Service	No Service	7-30	7-30	No Service
Off-Peak Period	Fairfax County Connector Service	30-60	30-60	30-60	30-60
	Loudoun County Commuter Service	No Service	No Service	No Service	No Service
	Metrorail	No Service	12	12	12
	Metrobus	30-60	30-60	30-60	30-60
	Corridor Express Bus Service	No Service	21-30	21-30	No Service

For the Wiehle Avenue Extension, the frequency of service east of and including Wiehle Avenue would be the same as that for the full LPA. The corridor express bus service proposed for points west of Wiehle Avenue is intended to operate in the peak direction with frequencies comparable to those provided by the rail segment. However, express bus services would operate in heavily congested conditions when accessing and exiting stations and stops, and could experience delays that affect service reliability. In the reverse-peak direction and during the off-peak period, express bus service would operate less frequently than the full LPA, but more frequently than No Build Alternative transit services.

6.1.3.6 Transfer Requirements

The number of transfers required to make a trip from an origin to a destination is one of the most important determinants of passenger convenience and comfort. Research shows that there are several reasons transfers decrease the attractiveness of a transit service. First, the added time associated with transfers increases a passenger's overall trip time. Second, transfers between different transit lines often take place at bus stops that are unprotected from the elements and not suited to long waits. Third, there

is a discomfort associated with uncertainty about the arrival of the vehicle being transferred to, specifically whether the vehicle will be early (and therefore missed by on-time arriving passengers), late, or will arrive at all.

For the No Build Alternative, the Wiehle Avenue Extension, and the full LPA, the minimum number of transfers necessary to travel between select O/D pairs (the same pairs analyzed for travel time effects) was determined. The results of this analysis show that for most of the O/D pairs analyzed, the full LPA would require fewer transfers than the No Build Alternative. The full LPA would often provide a one-seat ride between origin and destination. Where transfers are required, they would be within the regional rapid transit system; therefore, perceived transfer "penalties" are somewhat mitigated by completely sheltered environments and the ability to transfer between lines without paying an additional fare or showing a transfer pass.

The Wiehle Avenue Extension would require at least one more transfer than the full LPA for trips with one end in the western part of the corridor and one end east of Wiehle Avenue. For these trips, the Wiehle Avenue Extension would generally require the same number of transfers as transit services operating under the No Build Alternative, but in most cases would not require transfers between different service providers. For O/D pairs with both ends in the western end of the corridor, no transfers would be required.

6.1.3.7 Effects on Regional Rail Operations

The implementation of the Wiehle Avenue Extension and full LPA would affect the operations of other portions of the regional transit system, including Metrorail, Metrobus, and the local operating systems in the corridor. This section includes a summary of the effects of the full LPA on planned Metrorail system capacity and operations. Of particular concern is the ability of Metrorail vehicles to accommodate additional passenger loads resulting from the implementation of the Dulles Corridor Rapid Transit Project without significant crowding, especially in the peak hour of demand. The operations of the Wiehle Avenue Extension and full LPA are discussed in Section 2.4.2.

A. Passenger Volumes at Maximum Load Points

Table 6.1-12 presents forecasted Metrorail passenger loads at the maximum load point (the point at which Metrorail vehicles experience the highest passenger volumes and thus the most crowding), and the average loads per car during the peak hour of the a.m. peak period for the No Build Alternative, the Wiehle Avenue Extension, and the full LPA. The maximum load point for each alternative would occur between the Rosslyn and Foggy Bottom stations on the Metrorail Orange Line. The average load per car reflects the number of passengers carried on each car of a train during the peak hour, assuming that passenger loads are spread evenly among all cars in operation during that period.

WMATA's current primary passenger load guideline is 140 passengers per rail car (ppc) in the peak direction during the peak 30-minute period (i.e., the peak of the peak). In an effort to improve the quality of Metrorail service, WMATA has established an objective of reducing its passenger load standard to 120 ppc in the peak hour. This passenger load guideline was used in WMATA's Core Capacity Study (see Section 1.3) and in determining Metrorail fleet requirements for the Dulles Corridor Rapid Transit Project.

Table 6.1-12: A.M. Peak Hour Maximum Loads and Average Loads per Vehicle

	No Build Alternative (2025)		Locally Preferred Alternative					
			Wiehle Avenue Extension (2011)		Wiehle Avenue Extension (2025)		Full LPA (2025)	
	Passenger Load	Average Load/Car	Passenger Load	Average Load/Car	Passenger Load	Average Load/Car	Passenger Load	Average Load/Car
Orange Line, Vienna to Largo	3,726	109	3,185	124	3,383	99	3,358	98
Orange Line, Vienna to New Carrollton	7,483	110	6,398	107	6,791	99	6,738	98
Orange Line, West Falls Church to Stadium	5,194	76	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Wiehle Avenue Extension and full LPA	n.a.	n.a.	6,845	114	7,389	108	8,642	126
Total	**16,404**	**96**	**16,428**	**112**	**17,563**	**103**	**18,738**	**109**

n.a. = not applicable for this alternative

Passenger loads on the Orange Line Vienna service would decrease under the full LPA relative to the No Build Alternative because passengers from the Dulles Corridor riding the Vienna service under the No Build Alternative would instead board the service provided by the Wiehle Avenue Extension or full LPA, thus lessening the number of passengers on board Vienna Line trains. Under the Wiehle Avenue Extension, passenger loads and average loads per car on the Dulles Corridor line would decrease at the maximum load point relative to the full LPA. This decrease would be attributable to the decrease in ridership on the Dulles Line for the Wiehle Avenue Extension. Conversely, there would be a small increase in passenger loads and average loads per car on the Orange Line Vienna service for the Wiehle Avenue Extension in 2025. Since Metrorail service would not be available in the western portion of the corridor under the Wiehle Avenue Extension, some people from the west would choose to drive to the Vienna line to board rather than be forced to transfer at Wiehle Avenue on the Dulles Line. The decrease in passengers on board at the maximum load point and the average loads per car in the full LPA are even more pronounced relative to the Wiehle Avenue Extension opening year.

B. Other Effects on the Existing Metrorail System

Implementation of the full LPA would result in two additional effects on Metrorail service along the Orange Line. The Wiehle Avenue Extension and the full LPA would replace Orange Line service running between West Falls Church and Stadium Armory in the peak period only with new Metrorail service in the Dulles Corridor and along the Orange Line, with the first Orange Line stop for the new Dulles service at the East Falls Church Metrorail Station. Because the Dulles line service would operate all day, service frequencies along the Orange Line (east of East Falls Church) would improve during the off-peak period, as Dulles trains would merge with the Orange Line alignment at East Falls Church. This would result in a combined off-peak headway of 6 minutes from East Falls Church to Rosslyn and 4 minutes along the remainder of the shared Orange/Blue alignment through downtown Washington, D.C. By comparison, the No Build Alternative would provide a 12-minute off-peak headway on the Orange Line east to Rosslyn and a 6-minute combined Blue/Orange Line headway through downtown Washington, D.C.

While off-peak service frequencies east of (and including) East Falls Church Metrorail Station would improve, peak period service at the West Falls Church Metrorail Station would decline under the implementation of the Wiehle Avenue Extension and the full LPA. This is because the Wiehle Avenue

Extension and the full LPA would replace a service (the peak period only Orange Line service between West Falls Church and Stadium-Armory) with a Metrorail Line that would bypass West Falls Church and enter the Orange Line alignment at the East Falls Church Metrorail Station. This would result in peak period trains at West Falls Church being reduced from approximately 21 trains per hour in the No Build Alternative to approximately 13 trains per hour under the Wiehle Avenue Extension and full LPA.

6.1.3.8 Effects on Operations and Maintenance Costs

The ridership figures outlined at the beginning of Section 6.1.3 show the positive impacts of implementing a major transit capital investment in the Dulles Corridor. This section outlines the estimated changes in operations and maintenance (O&M) costs associated with the Wiehle Avenue Extension and full LPA. These figures, in conjunction with ridership changes, help to identify the cost-effectiveness of a given alternative. Table 6.1-13 presents the annual operations and maintenance costs estimated for 2025 (in 2004 dollars).

Table 6.1-13: Annual Operations and Maintenance Costs – 2025 (2004 dollars in millions)

		Locally Preferred Alternative		
Transit Service	**No Build Alternative (2025)**	**Wiehle Avenue Extension (2011)**	**Wiehle Avenue Extension (2025)**	**Full LPA (2025)**
Metrorail	$587.73	$581.98	$627.85	$657.64
WMATA Bus	$14.53	$11.74	$13.30	$13.30
Fairfax Connector	$19.19	$19.74	$23.42	$21.32
Loudoun County (includes corridor express service)	$4.38	$7.96	$9.71	$6.33
TOTAL	**$625.83**	**$621.42**	**$674.28**	**$698.59**

NOTE: See Chapter 8 for costs expressed in year-of-expenditure dollars.

Though revenue vehicle hours for all transit modes in the corridor are expected to decrease for the full LPA relative to the Wiehle Avenue Extension, the full LPA would have higher O&M costs due to the added cost of infrastructure maintenance for a rail line which extends to Loudoun County. This infrastructure includes stations, tracks, power distribution systems, structures, and right-of-way. The cost associated with maintaining more sophisticated rail vehicles is also higher than the cost of maintaining buses (the mode of service west of Wiehle Avenue in the Wiehle Avenue Extension).

6.1.3.9 Metrorail Fleet Requirements

Fleet requirements represent the number of Metrorail cars that would be required to meet peak loads under each of the alternatives, plus spare cars and gap trains. This measure is another means of describing the level of transit service and investment in resources. Table 6.1-14 presents the fleet requirements for each alternative in the opening years.

Table 6.1-14: Fleet Requirements – Opening Year

Transit Service	**No Build (2011)**	**Wiehle Avenue Extension (2011)**	**No Build (2015)**	**Full LPA (2015)**
Metrorail Cars	1,108	1,172	1,238	1,366

As shown in the table, the Wiehle Avenue Extension alternative requires an additional 64 Metrorail cars for year 2011 operations when compared to the No Build Alternative. The full LPA requires an additional

64 Metrorail cars. Independent of the LPA, WMATA will procure a gap train and also rail cars to accommodate growth in the system.

6.1.4 CONSTRUCTION EFFECTS

6.1.4.1 Wiehle Avenue Extension

The Wiehle Avenue Extension would merge with the Orange Line at a point between the East and West Falls Church Metrorail Stations. This connection would require new special track work, including turnouts and a double crossover on the existing Orange Line track. It would also require some re-alignment of the Orange Line. WMATA would be able to maintain Orange Line operations by single-tracking trains to implement such improvements. To the extent possible, overnight periods would be utilized for construction that would require closure of both tracks. If closure of both tracks is required during operating hours, buses would be used to connect stations affected by the closure.

A yard lead from the mainline in the median of the Dulles Connector Road would be required for access to the West Falls Church Yard. This lead would cross under the eastbound lanes of the Connector Road. If cut and cover tunneling is identified as the best method for constructing the tunnel it would require a detour on the eastbound lanes.

In Tysons Corner, the rail line would run in tunnel for 1.1 miles. If cut and cover is the selected construction method, lane closures that would have a considerable impact on traffic operations would be required.

Construction of the Wiehle Avenue station would require widening of the DIAAH. This widening would result in lane closures in the station area. The construction impacts of parking, Kiss & Ride and bus facilities associated with the station are expected to be minimal. The construction of pedestrian overpasses to the Wiehle Avenue median station may require limited off-peak lane closures on the DIAAH and the Dulles Toll Road.

West of the Wiehle Avenue Station, there would be construction of a pocket track for train storage that would result in lane closures for roadway widening.

6.1.4.2 Full LPA

Construction effects for the full LPA would be the same as the Wiehle Avenue Extension east of and including Wiehle Avenue.

West of Wiehle Avenue, the construction of the Reston Parkway, Herndon-Monroe, and Route 28 stations would require the same widening of the DIAAH as the Wiehle Avenue station construction, and therefore would also have the same impacts.

At Dulles Airport, the rail alignment would run through a 1.72 mile tunnel. Impacts from the use of a combination of cut and cover and conventional tunneling techniques would include vehicular, pedestrian, and potentially air traffic disruptions as the tunneling proceeds across roads leading to the main terminal, parking lots, and the northern portion of the service tarmac.

The northwestern-most section of the Dulles Airport alignment would be an aerial alignment providing a connection to the Dulles Greenway median. Impacts due to construction are expected to be minimal, with some off-peak lane closures across the eastbound lanes expected.

Relocation of lanes on the Dulles Greenway would be required at the Route 606 and Route 772 stations in Loudoun County. These relocations may result in some traffic disruptions as lanes are closed at each station location. Impacts from lane closures for construction of pedestrian bridges to the Greenway median are expected to be minimal.

6.1.5 MITIGATION

Maintenance of traffic plans would be developed for all construction activities that would affect roadways. The construction of all stations along the alignment of both the full LPA and the Wiehle Avenue Extension would be coordinated with the following agencies: VDOT regarding lane closures in Tysons Corner and on the Dulles Toll Road; MWAA regarding possible disruptions in airport service and construction on the DIAAH; and with TRIP II regarding construction events on the Dulles Greenway. To the extent possible, all construction requiring lane closures would be done at night, on weekends, or in the off-peak periods.

6.2 EFFECTS ON ROADWAYS

Because of the population and employment growth forecast for the metropolitan Washington, D.C. region, traffic is expected to consistently increase throughout the Dulles Corridor over the next ten to 20 years. Under the No Build Alternative, anticipated growth is expected to occur in a dispersed pattern of development, which would be highly auto-oriented, leaving people with few travel choices and resulting in widespread congestion. At many corridor intersections, travelers would experience substantial delays and very poor levels of service. The intent of the Dulles Corridor Rapid Transit Project is to provide travel choices for corridor residents and employees and to help focus anticipated growth in Fairfax and Loudoun counties into patterns that will increase the number of viable travel options available to corridor residents and employees, including transit, walking, and bicycling.

This section presents the existing and planned roadway system in the Dulles Corridor, as well as the potential effects of the Wiehle Avenue Extension and the full LPA on the planned system. In Section 6.2.1, the methodology for evaluating roadway effects is discussed, then in Section 6.2.2 the existing and planned roadway systems in the Dulles Corridor are described. Section 6.2.3 presents the anticipated long-term effects associated with the No Build Alternative, the Wiehle Avenue Extension, and the full LPA in terms of roadway volumes, levels of service, and anticipated delay at intersections, and Section 6.2.4 presents proposed mitigation measures for anticipated adverse traffic effects.

6.2.1 METHODOLOGY

Like transit effects, the anticipated effects of the No Build Alternative, the Wiehle Avenue Extension and the full LPA on the regional and corridor roadways were estimated using the Northern Virginia Major Investment Study Model (NVMISM). NVMISM was used to generate highway assignments that were, in turn, used to forecast traffic volumes on regional highway links and adjusted to develop detailed traffic forecasts for the local road network surrounding proposed stations and stops in the Dulles Corridor.

6.2.2 EXISTING AND PLANNED ROADWAY SYSTEM

The Dulles Corridor is served by a number of regional and local roadway facilities. This section provides an overview of these facilities, including a general assessment of current traffic operations. Additional information on existing transportation facilities and assumed highway and transit improvements is provided in Chapters 1 and 2.

6.2.2.1 Regional Roadways

The regional highway facilities, major arterials, and key regional roadway links in the Dulles Corridor are shown in Figure 2.4-2. These highways, their existing capacity, and the improvements included in the region's financially constrained long-range transportation plan (CLRP) are described in more detail in Chapter 2. The major regional highway facilities in the corridor include the following:

- Interstate 66 (I-66);
- Dulles Connector Road;
- Interstate 495 (I-495 or Capital Beltway);
- Dulles Toll Road;
- Dulles International Airport Access Highway; and,
- Dulles Greenway.

The other major arterials serving regional travel patterns in the corridor include:

- Route 7 (Leesburg Pike);
- Route 123 (Chain Bridge Road/Dolley Madison Boulevard);
- Route 193 (Georgetown Pike);
- Route 7100 (Fairfax County Parkway);
- Route 28 (Sully Road);
- Route 50 (Lee Jackson Memorial Highway); and,
- Route 607 (Loudoun County Parkway).

As indicated in Chapter 1, regional roadways and major arterials in the Dulles Corridor currently experience a substantial amount of congestion during peak travel periods. Typically, the level of congestion on a roadway or at an intersection is reflected by a qualitative measure called level of service (LOS). In general, LOS reflects the impacts of congestion on travel speeds or the average delay experienced by vehicles at an intersection. Six letter designations (A through F) are used to represent different levels of service, with LOS A reflecting free flow conditions and LOS E and F representing very congested or gridlock conditions. Many of the facilities in the Dulles Corridor are currently at LOS E and F, and increasing demand is only expected to worsen conditions. LOS is explained in more detail in Section 6.2.3 where anticipated highway volumes and LOS for the No Build Alternative are presented.

6.2.2.2 Local Roadways and Intersections

In addition to regional travel functions, the roadways described above, in combination with other roads, provide local circulation within the project corridor. For local travel, intersection operations are a key performance factor. Local transportation facilities in the corridor's activity centers are summarized in the following sections. Particular attention is given to roadways and intersections in the vicinity of proposed stations.

A. Falls Church

Falls Church is located at the eastern end of the Dulles Corridor. In addition to several of the regional roadways discussed earlier, the following major local roadways serve this activity center:

- **Sycamore Street** – Four-lane collector road adjacent to the East Falls Church Metrorail Station, connecting the residential areas of North Arlington with Falls Church;
- **Route 29 (Lee Highway)** – Four-lane east-west roadway serving this portion of the corridor serving as an alternative to I-66;

- **Haycock Road** – Four-lane minor arterial linking Route 29 and Westmoreland Street. The West Falls Church Metrorail Station entrance is off of Haycock Road; and
- **Great Falls Street** – Two-lane minor arterial that intersects Haycock Road and runs to the north and east of the West Falls Church Metrorail Station.

Key intersections in the area of the West Falls Church station currently operate at an acceptable range from LOS A and B with one LOS C in the p.m. peak period. Future traffic growth for the No Build Alternative will result in deteriorating traffic conditions in the area. In 2025, intersection a.m. peak LOS would range from A to E and p.m. peak LOS would range from A to F.

B. Tysons Corner

Tysons Corner is the primary activity center in the Dulles Corridor and the second largest employment center in the Washington metropolitan region. The internal roadway network in Tysons Corner is generally circuitous as opposed to a typical urban grid network. Vehicular access into and out of Tysons Corner is limited to six intersections and interchanges:

- Route 123 at the Dulles Connector Road;
- I-495 at Route 123;
- Route 123 at Route 7;
- Spring Hill Road at the DIAAH and Dulles Toll Road;
- Route 7 at the DIAAH and Dulles Toll Road; and
- Gallows Road at Old Courthouse Road.

The major local roadways within Tysons Corner are summarized below:

- **International Drive** – Six-lane north-south minor arterial linking central Tysons Corner (and two regional shopping malls) with the Dulles Toll Road;
- **Westpark Drive** – Semi-circumferential four-lane minor arterial linking Route 7 on the west with the northeast quadrant of the Tysons Corner area;
- **Tysons Boulevard** – Four to six-lane north-south local road linking the two shopping malls and providing a bypass to the International Drive/Route 123 intersection. The Tysons Boulevard/Route 123 intersection features Virginia's first three-lane left turn movement;
- **Spring Hill Road** – Two to four-lane minor arterial linking International Drive with Route 7, planned for expansion to four lanes along entire length of facility by 2005; and
- **Tyco Road** – Four-lane local roadway connecting Spring Hill Road with Route 7 to the northwest.

The majority of key intersections on the roadway network within the heart of Tysons Corner currently operate at generally poor LOS, with associated high delay. Generally, future growth in traffic in the area in the No Build Alternative resulting from increased development will lead to increases in delay and deteriorating LOS in 2025, even for intersections that operate fairly efficiently today. In instances where an intersection fails today, continued growth in traffic will typically result in significantly increased delays in 2025 compared to the delays that exist today.

C. Reston, Herndon, and Dulles Corner

In the mid-section of the Dulles Corridor, arterials and collectors generally run north-south and east-west, while the clustered residential development in the area results in circuitous local street networks. This section of the corridor includes the following major local roadways:

- **Wiehle Avenue** – Two to four-lane minor arterial currently connecting Sunrise Valley Road south of the Dulles Toll Road with Fairfax County Parkway near Route 7. Wiehle Avenue is being extended west to Dranesville Road;
- **Sunset Hills Road** – Four-lane minor arterial north of, and running parallel to, the Dulles Toll Road between Hunter Mill Road and Fairfax County Parkway;
- **Sunrise Valley Drive** – Four-lane minor arterial south of, and running parallel to, the Dulles Toll Road between Hunter Mill Road and Monroe Street, where it changes names and becomes Fox Mill Road. East of Route 28, the road becomes Horsepen Road;
- **Reston Parkway** – Four to six-lane minor arterial north-south roadway linking Reston communities with the Reston Town Center and other large developments;
- **Monroe Street/Van Buren Street** – Two- to four-lane collector connecting Herndon with western Fairfax County neighborhoods south of the Dulles Toll Road (and just west of the Herndon-Monroe park-and-ride lot). Monroe Street is assumed to be widened to six lanes between Sunrise Valley Drive/Fox Mill Road and Herndon Parkway by 2010; and
- **Centreville Road/Elden Street** – Four-lane minor arterial connecting western Fairfax County neighborhoods south of the Dulles Toll Road with Herndon (where it is named Elden Street). A one-half mile section between Worldgate and Herndon Parkway is assumed for expansion from four to six lanes by 2010.

Most of the major intersections in the Reston, Herndon, and Dulles Corner portion of the corridor currently operate at failing conditions, while some of the area intersections with lower volumes operate at reasonable Levels of Service (LOS B and C). In nearly every instance, future growth in the area under the No Build Alternative will result in deteriorating intersection operations in 2025. For those intersections that are currently failing, delay will increase in the future while those intersections that currently have reasonable operations will generally experience increased delay and in some instances poorer Levels of Service.

D. Dulles Airport

Dulles Airport is located southwest of the interchange for the DIAAH and Dulles Toll Road, the Dulles Greenway, and Route 28. These roadways converge at Dulles Airport, and access to the airport is provided through a diamond interchange with loop access to the eastbound and westbound Dulles Toll Road and DIAAH. Flyover access from northbound Route 28 is provided to Dulles Airport.

E. Eastern Loudoun County

Loudoun County, at the western end of the corridor, is currently rural in nature, with limited, but increasing, commercial and residential development and a somewhat limited local roadway network. Local roadways within the Loudoun County portion of the Dulles Corridor are identified below:

- **Route 606** – Four-lane arterial connecting southeastern Loudoun County with Herndon and northern Fairfax County;
- **Route 789** – Two-lane local road connecting Route 606 with Moran Road. Route 789 is planned for widening to four lanes and an extension north to Ashburn by 2010; and
- **Route 772** – Two-lane local road running south from the Dulles Greenway.

The key existing intersection of Route 606 and Route 789 in the vicinity of the Loudoun County stations currently operates at a LOS B. Future operations in the No Build Alternative deteriorate to Level of Service F due to significant traffic growth associated with increased development.

6.2.3 LONG-TERM EFFECTS

The implementation of the Wiehle Avenue Extension and the full LPA (and the provision or expansion of park-and-ride and Kiss & Ride facilities) would result in increased traffic on local roadways around stations. Park-and-ride and Kiss & Ride facilities are provided at these stations. Stations located in the central business district type environments would have substantially fewer passengers accessing the station via automobile resulting in minimal impacts to traffic in the areas adjacent to those types of stations. Although the full LPA is not expected to substantially affect the operation of regional highway facilities or roadways outside of station areas, it would provide travel options and help to increase overall mobility in the corridor, the counties, and the region.

This section presents the anticipated long-term effects of the No Build Alternative, the Wiehle Avenue Extension, and the full LPA on regional and corridor roadways. Forecast levels of service and delay are discussed for each roadway link and intersection.

6.2.3.1 Regional Highway Operations

LOS is typically used to describe the operation of roadway facilities. LOS is a qualitative measure that describes the flow of vehicles along freeways and arterials, and the apparent ease of movement through intersections. In general, LOS reflects the impacts of congestion experienced by vehicles traveling along a road or through an intersection. This delay reflects a combination of factors, such as speed, travel time, traffic interruptions, and driving comfort. In its *Highway Capacity Manual* (2000), the Transportation Research Board defines LOS characteristics and conditions for multilane highways and freeways. These characteristics are summarized in Table 6.2-1.

Six letter designations (A through F) are used to represent different levels of service. LOS A typically reflects free flow conditions, while LOS B and LOS C are generally considered declining, but acceptable, traffic conditions. LOS D represents moderate delays. LOS E represents traffic volumes approaching the capacity of the roadway, and LOS F reflects stop-and-go, near-gridlock traffic conditions.

Table 6.2-1: Multilane Highway and Freeway Level of Service Characteristics

LOS	Speed Characteristics	Multilane Highway Conditions	Freeway Conditions
A	Free-flow speeds	Uncongested or no delay	Uncongested or no delay
B	Free-flow speeds	Reasonably unimpeded flow Presence of other vehicles a noticeable influence on ability to maneuver	Reasonably unimpeded flow Maneuverability is slightly restricted
C	At or near free-flow speeds	Moderately congested Other vehicles a strong influence, ability to maneuver is noticeably restricted	Moderately congested Maneuverability is noticeably restricted, significant incidents could cause queues
D	Speeds are reduced moderately	Congested Ability to maneuver severely restricted	Congested Ability to maneuver more restricted, psychological comfort reduced, minor incidents expected to cause queues
E	Speeds highly variable and can be greatly reduced	Very congested Queues can form readily	Very congested Vehicles closely spaced, ability to maneuver severely restricted, poor psychological comfort, minor incidents will cause extensive queuing

LOS	Speed Characteristics	Multilane Highway Conditions	Freeway Conditions
F	Very low speeds, many vehicles stopped, flow likely to be stop-and-go	Severely congested, gridlock	Severely congested, gridlock

Source: Transportation Research Board, *Highway Capacity Manual* (2000).

For analysis of freeways and multilane highways, LOS reflects the density of vehicles on the facility as well as average travel speeds. Traffic operations on multilane and arterial highways are slightly different than those on freeways because freeway access is controlled and access is allowable only at interchanges, freeways have higher design standards, whereas multi-lane/arterial highways may have traffic signals. Vehicles entering or leaving the road at intersections and driveways will affect traffic flow on multi-lane and arterial highways.

The 2025 peak-hour volumes and levels of service (LOS) on selected highway links throughout the Dulles Corridor are shown in Table 6.2-2 for the No Build Alternative, the Wiehle Avenue Extension, and the full LPA.

Table 6.2-2: Peak-Hour Traffic Volumes and Levels of Service on Selected Highway Links

				Locally Preferred Alternative					
		No Build Alternative (2025)		Wiehle Avenue Extension (2011)		Wiehle Avenue Extension (2025)		Full LPA (2025)	
Highway Link	Location	LOS	Peak-Hour Volume	LOS	Peak-Hour Volume	LOS	Peak-Hour Volume	LOS	Peak-Hour Volume
I-66 Eastbound	Route 29 to Dulles Connector Road	F	6,900	F	5,900	F	6,900	F	6,900
Dulles Connector Road Westbound		F	6,200	F	4,600	F	5,800	F	5,700
I-495 Northbound	Route 7 to Route 123	E	7,800	E	6,900	E	7,700	E	7,700
	HOV lane	D	1,500	D	1,300	D	1,500	D	1,500
Dulles International Airport Access Highway Eastbound	At Route 7	D	4,100	B	2,400	C	3,900	C	3,800
Dulles Toll Road Eastbound	Hunter Mill Road to Reston Parkway	F	7,100	E	6,300	F	7,300	F	7,300
	HOV lane	C	1,200	C	1,200	C	1,200	C	1,200
Route 50*	Fairfax County Parkway and Route 28	F	8,300	D	7,100	F	8,200	F	8,200
Route 28*	Dulles Toll Road and Route 606	D	6,600	C	5,100	D	6,600	D	6,600
Dulles Greenway Eastbound	Route 772 to Route 659	F	8,100	D	6,800	F	8,100	F	8,100

NOTE: HOV – High Occupancy Vehicle lane(s)
*Direction not specified by VDOT.

In 2025, the full LPA would result in similar traffic volumes on regional routes to the No Build Alternative. Most of the routes shown in Table 6.2-3 would only experience slight decreases in traffic for the full LPA. Only the DIAAH would experience a decrease in traffic large enough to result in an improved level of service. Similarly, the Wiehle Avenue Extension is expected to have a negligible impact on regional highway volumes.

Given that the change in traffic volumes for the Wiehle Avenue Extension and the full LPA is small, it is expected that the increase in transit ridership associated with the Wiehle Avenue Extension and the full LPA would have very little effect on vehicle-trip reduction at the regional level. However, implementation of the full LPA would increase overall transportation capacity in the corridor, permitting the movement of more people without requiring for additional highway capacity.

6.2.3.2 Local Traffic Operations

Projected delays at key intersections in the corridor and the corresponding LOS were assessed for 2025, the forecast year for the full LPA and 2011, the opening year for the Wiehle Avenue Extension to determine the anticipated effects of the full LPA on local traffic operations. All intersection delay has been rounded to the nearest whole number. Due to the nature of intersections, travelers are bound to experience some delay at intersections; even during uncongested conditions.

For signalized intersections, the *Highway Capacity Manual* (2000) defines delay thresholds associated with each LOS. Intersection delay includes dwell (stop) time as well as the time associated with acceleration and deceleration at the signal. This measure is intended to reflect driver frustration, fuel consumption, and increased travel time. The delay time represented by each LOS and a qualitative assessment of conditions under each LOS is summarized in Table 6.2-3.

Table 6.2-3: Signalized Intersection Level of Service Characteristics

Level of Service	Intersection Conditions	Average Delay (seconds/vehicle)
A	Uncongested or no delay (Few vehicles stop)	0 – 10
B	Reasonably unimpeded flow (Some vehicles stop)	10 – 20
C	Moderately congested (Significant number of vehicles stop, possible that a few vehicles sit through cycle more than once)	20 – 35
D	Congested (Many vehicles stop, a noticeable number of vehicles sit through cycle more than once)	35 – 55
E	Very congested (Nearly all vehicles will stop, vehicles frequently have to sit through cycle more than once)	55 – 80
F	Severely congested (Gridlock)	> 80

Source: Transportation Research Board, Highway Capacity Manual (2000).

It is important to emphasize that LOS for signalized intersections represents average delay per vehicle. While individual vehicles may experience delays greater than the maximum indicated above for a given LOS, on average, the delay falls within these ranges.

Given the large number of key intersections in the Dulles Corridor, the results of the local traffic analysis are presented below by geographic corridor section. The intersections included in the traffic analyses were selected based on their proximity to the proposed Metrorail stations, and would have the potential to experience the greatest impacts, if any, from the project.

Intersections operating at LOS D or better were considered to perform at an acceptable level of service, which is consistent with Fairfax County and VDOT guidelines for signalized intersections. Intersections that performed at LOS E or LOS F under the Wiehle Avenue Extension and the full LPA were determined to warrant mitigation if the delay time for the intersection was more than the delay experienced under the No Build condition by the greater of either five (5) seconds (or more) or five (5) percent greater than the No Build Alternative delay. In other words, delay at an LOS E or F intersection has to increase at least five (5) seconds to warrant mitigation; however, mitigation might not be required at an intersection with a delay increase of 15 or 20 seconds if that intersection experiences high levels of delay in the No Build condition. For example, if intersection delay increased from 385 seconds to 400 seconds, no mitigation was recommended because this 15-second increase is not greater than 5 percent of the No Build Alternative delay.

A. West Falls Church Station

The West Falls Church Metrorail Station is an existing Orange Line station located in the median of I-66, between the I-66/Route 7 and I-66/Dulles Connector Road interchanges. Private vehicle access to the West Falls Church Station is provided at an entrance just off Haycock Road. This station can also be accessed by the I-66 eastbound ramp. Route 7 is a principal arterial that provides access to Haycock Road from the west, while Great Falls Road is a minor arterial connecting to Haycock Road from the east. Intersections of these roadways were selected for the traffic impact analysis in this station area. In addition, the park-and-ride structure currently under development at West Falls Church Station was considered in the analysis as part of the No Build Alternative.

Table 6.2-4 presents the projected LOS and delay for key intersections in the vicinity of the West Falls Church Metrorail Station.

Table 6.2-4: West Falls Church Station Peak Hour Intersection LOS and Delay in Seconds

			Locally Preferred Alternative					
	No Build Alternative (2025)		Wiehle Avenue Extension (2011)		Wiehle Avenue Extension (2025)		Full LPA (2025)	
Primary Ro-adway/Cross Street	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay
Route 7/ Haycock Road	C/33	D/35	C/25	D/35	D/30	D/37	C/34	D/36
Haycock Road/ West Falls Church Station Parking Entrance	A/6	A/6	A/6	A/7	A/7	A/6	A/7	A/7
Great Falls Street/Haycock Road	E/62	F/98	E/57	F/88	E/60	F/94	E/57	F/91

NOTE: Underlined items meet the threshold at which mitigation should be considered.

The data in Table 6.2-4 show that the construction of either the Wiehle Avenue Extension or the full LPA would have almost no impact on level of service or delay at intersections around the West Falls Church Metrorail station. This minimal impact is based on the fact that no additional parking capacity will be available at the station after implementation of rail in the Dulles Corridor and therefore changes in traffic volumes resulting from implementation, and which would impact LOS and delay, would be marginal.

B. Tysons East Station

The Tysons East Station is the easternmost station for the Wiehle Avenue Extension and the full LPA. The Tysons East Station platform would be located on the north side of Route 123, east of Old Springhouse Road/Scott's Crossing. Off-street Kiss & Ride parking and curbside feeder bus facilities would be located on the south side of Route 123 along Colshire Drive, with additional curbside bus facilities located on the north side of Route 123. A pedestrian bridge spanning Route 123 would connect the south station facilities with the station platform.

Table 6.2-5 presents the projected LOS and delay for key intersections in the vicinity of the Tysons East Station.

Table 6.2-5: Tysons East Station Peak Hour Intersection LOS and Delay in Seconds

			Locally Preferred Alternative					
	No Build Alternative (2025)		Wiehle Avenue Extension (2011)		Wiehle Avenue Extension (2025)		Full LPA (2025)	
Primary Roadway/Cross Street	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay
Route 123/ Old Meadow Road	F/139	F/88	n.a.	n.a.	F/154	E/77	F/154	E/77
Colshire Drive/ Station Entrance	n.a.	n.a.	n.a.	n.a.	B/10	B/12	B/10	B/12
Route 123/ Anderson Road	D/41	C/33	n.a.	n.a.	D/47	D/36	D/47	D/36

NOTE: n.a. = not applicable – opening year analysis not conducted for station because minimal auto related facilities are planned

Underlined items meet the threshold at which mitigation should be considered.

The data in Table 6.2-5 show that traffic conditions will substantially deteriorate at two of the intersections analyzed at the Tysons East Station, under both the Wiehle Avenue Extension and the full LPA; Route 123, Old Meadow Road, Route 123 and Colshire Drive. A description of the mitigation measures proposed to address these impacts at these two intersections is outlined in Section 6.2.4.

C. Tysons Central 123 Station

The Tysons Central 123 Station would be located just west of Tysons Boulevard on the north side of Route 123. This station would have an aerial platform spanning Tysons Boulevard, and would have a pedestrian bridge over Route 123 to provide access to the Tysons Corner Center Mall (Tysons I). No park-and-ride or Kiss & Ride facilities would be provided at this station.

Table 6.2-6 presents the projected LOS and delay for key intersections in the vicinity of the Tysons Central 123 Station.

Table 6.2-6: Tysons Central 123 Station Peak Hour Intersection LOS and Delay in Seconds

	No Build Alternative (2025)		Locally Preferred Alternative					
			Wiehle Avenue Extension (2011)		Wiehle Avenue Extension (2025)		Full LPA (2025)	
Primary Roadway/Cross Street	**a.m. LOS/ Delay**	**p.m. LOS/ Delay**	**a.m. LOS/ Delay**	**p.m. LOS/ Delay**	**a.m. LOS/ Delay**	**p.m. LOS/ Delay**	**a.m. LOS/ Delay**	**p.m. LOS/ Delay**
International Drive/ Galleria Drive	A/2	A/2	n.a.	n.a.	A/2	A/2	A/2	A/2
International Drive/ Route 123 EB Ramp/ Local Road	C/22	C/31	n.a.	n.a.	C/22	2/28	C/22	C/28
International Drive/ Route 123 WB Ramp/ Local Road	C/27	C/29	n.a.	n.a.	C/27	C/29	C/27	C/29
Route 123/ Tysons Boulevard	C/29	F/215	n.a.	n.a.	D/35	F/185	D/35	F/185
Tysons Boulevard/ Galleria Drive	C/33	F/87	n.a.	n.a.	C/34	F/82	C/34	F/82
International Drive/ Fletcher Street	D/40	B/20	n.a.	n.a.	D/41	C/20	D/41	C/20
International Drive/ Route 7 SB Local Road	C/33	C/32	n.a.	n.a.	C/33	C/31	C/33	C/31
International Drive/ Route 7 NB Local Road	E/60	E/56	n.a.	n.a.	E/59	D/55	E/59	D/55

NOTES: n.a. = not applicable – opening year analysis not conducted for station because minimal auto related facilities are planned

Underlined items meet the threshold at which mitigation should be considered.

The data in Table 6.2-6 show that there would be almost no change in the Level of Service or delay at the analyzed intersections after implementation of either the Wiehle Avenue Extension or the full LPA. This marginal change in intersection operations is based on the fact that the primary mode of access this station is not by automobile, thus no parking or Kiss & Ride facilities will be developed at the station, and volumes on roadways around the station will remain generally consistent with the No Build Alternative.

D. Tysons Central 7 Station

The Tysons Central 7 Station would be located underground on the south side of Route 7; north of the Route 7/123 interchange, between Tysons Square Center and Pike 7 Plaza. Entrance pavilions would be provided on both sides of Route 7 and would be connected by a pedestrian bridge that spans the roadway. Park-and-ride and Kiss & Ride facilities would not be provided, and feeder and/or circulator bus service is not planned to serve this station. Table 6.2-7 presents the projected LOS and delay for key intersections in the vicinity of the Tysons Central 7 Station.

Table 6.2-7: Tysons Central 7 Station Peak Hour Intersection LOS and Delay in Seconds

Primary Roadway/Cross Street	No Build Alternative (2025)		Locally Preferred Alternative					
			Wiehle Avenue Extension (2011)		Wiehle Avenue Extension (2025)		Full LPA (2025)	
	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay
Route 7 SB Ramp/ Local Road/ Route 123 EB Ramp/ Local Road	B/13	B/14	n.a.	n.a.	B/13	B/14	B/13	B/14
Route 7 NB Ramp/ Local Road/ Route 123 EB Ramp/Local Road	B/17	B/18	n.a.	n.a.	B/17	B/17	B/17	B/17
Route 7 SB Ramp/ Local Road/ Route 123 WB Ramp/Local Road	C/23	B/21	n.a.	n.a.	C/22	B/20	C/22	B/20
Route 7 NB Ramp/ Local Road/ Route 123 WB Ramp/Local Road	C/22	C/22	n.a.	n.a.	C/21	C/21	C/21	C/21
Route 7 SB Local Road/ West Park Drive	E/71	D/42	n.a.	n.a.	E/57	D/36	E/57	D/36
Route 7 NB Local Road/ West Park Drive	E/62	D/38	n.a.	n.a.	D/48	C/32	D/48	C/32

NOTE: n.a. = not applicable – opening year analysis not conducted for station because minimal auto related facilities are planned.
Underlined items meet the threshold at which mitigation should be considered.

The data in Table 6.2-7 show that there would be almost no change in LOS or delay at the analyzed intersections after implementation of either the Wiehle Avenue Extension or the full LPA. As with the Tysons Central 123 Station, this minimal change is based on the fact that no parking or Kiss & Ride facilities will be developed at the station.

E. Tysons West Station

The Tysons West Station will be located above ground on the west side of Route 7 between Tyco and Spring Hill Roads. Entrance pavilions would be provided on both sides of Route 7, with the east side of Route 7 connected to the station via a pedestrian bridge. A Kiss & Ride and bus bays would located on the east side of Route 7, between Tyco Road and Spring Hill Road. Access to the bus facility will be via Tyco Road.

Table 6.2-8 presents the projected LOS and delay for key intersections in the vicinity of the Tysons West Station.

Table 6.2-8: Tysons West Station Peak Hour Intersection LOS and Delay in Seconds

Primary Roadway/Cross Street	No Build Alternative (2025)		Locally Preferred Alternative					
			Wiehle Avenue Extension (2011)		Wiehle Avenue Extension (2025)		Full LPA (2025)	
	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay
Route 7/Dulles Toll Road EB Ramp	A/5	A/4	A/7	A/5	A/7	A/5	A/7	A/5
Route 7/ Dulles Toll Road WB Ramp	C/25	C/25	D/41	C/28	D/41	C/28	D/41	C/28
Route 7/Tyco Road	F/230	F/385	F/185	F/195	F/186	F/192	F/190	F/202

Primary Roadway/Cross Street	No Build Alternative (2025)		Locally Preferred Alternative					
			Wiehle Avenue Extension (2011)		Wiehle Avenue Extension (2025)		Full LPA (2025)	
	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay
Tyco Road/Station Entrance	n.a.	n.a.	A/7	A/6	A/7	A/6	A/7	A/6
Route 7/Spring Hill Road	F/314	F/467	E/77	E/146	E/84	F/135	E/84	F/135

Underlined items meet the threshold at which mitigation should be considered.

The data in Table 6.2-8 show that traffic conditions will remain the same or actually improve after implementation of either the Wiehle Avenue Extension or the full LPA. Level of Service will deteriorate marginally at the intersection of Route 7 and the westbound ramp to the toll road, but the marginal impacts do not warrant additional mitigation, especially given the very poor intersection operations conditions at adjoining intersections.

F. Wiehle Avenue Station

The Wiehle Avenue station in both the Wiehle Avenue Extension and the full LPA would be located in the median of the DIAAH, just west of the Wiehle Avenue overpass. Pedestrian bridges spanning the DIAHH would connect the north and south side station facilities with the station platform. A large park and ride facility would be located on the north side of the station. Also located on the north side will be a large bus facility and Kiss & Ride facilities. For Wiehle Avenue Extension, Wiehle Avenue will be the terminal station for rail and thus will be handling very large volumes of bus traffic coming from locations to the west of the station. This will require a bus intermodal facility on the north side of the station as well as a bus facility located adjacent to the eastbound exit ramp from the Dulles Toll Road to Wiehle Avenue. The north side bus facility will have a dedicated bus access lane from Wiehle Avenue to separate buses from general traffic. The north side bus facility will also have direct access to the westbound entrance ramp to the Dulles Toll Road. The LOS and delay figures outlined below in Table 6.2-9 reflect the Wiehle Avenue Extension bus operations.

Table 6.2-9: Wiehle Avenue Station Peak Hour Intersection LOS and Delay in Seconds

Primary Roadway/Cross Street	No Build Alternative (2025)		Locally Preferred Alternative					
			Wiehle Avenue Extension (2011)		Wiehle Avenue Extension (2025)		Full LPA (2025)	
	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay
Wiehle Avenue/Dulles Toll Road WB Ramp	C/25	C/22	C/23	C/22	D/39	C/32	D/45	C/25
Wiehle Avenue/ Dulles Toll Road EB Ramp	C/25	C/21	C/24	C/21	D/37	C/25	D/35	C/22
Wiehle Avenue/Station Entrance	C/21	D/50	D/43	E/59	D/47	E/58	D/36	E/80
Wiehle Avenue/Sunset Hills Road	E/62	F/148	E/68	F/144	E/67	F/152	E/79	F/153
Wiehle Avenue/Sunrise Valley Drive	E/75	D/50	F//104	E/62	F/86	E/66	F/85	E/64

NOTES: Underlined items meet the threshold at which mitigation should be considered.

Park-and-ride, Kiss & Ride, and express bus (for the Wiehle Avenue Extension only) demand at Wiehle would lead to increased traffic volumes, increased delay, and declining Levels of Service at intersections in the vicinity of the station in both the Wiehle Avenue Extension and the full LPA. For the Wiehle Avenue/Sunset Hills Road, the Wiehle Avenue/Sunrise Valley Drive, and station entrance, the impacts would be significant enough to warrant mitigation. Proposed mitigation strategies for Wiehle Avenue are included in Section 6.2.4.

G. Reston Parkway

The Reston Parkway station would be located in the median of the DIAAH, just west of the Reston Parkway overpass. Pedestrian bridges spanning the DIAAH would connect the north and south side station facilities with the station platform. Kiss & Ride and bus access would be provided on both sides of the DIAAH and Dulles Toll Road. On the north side, facilities would be located along eastbound Sunset Hills Road, east of Town Center Parkway. Access to the south side facility would be provided at the north end of Edmund Halley Drive. Table 6.2-10 presents the projected LOS and delay for key intersections in the vicinity of the Reston Parkway Station.

Table 6.2-10: Reston Parkway Avenue Station Peak Hour Intersection LOS and Delay in Seconds

			Locally Preferred Alternative					
	No Build Alternative (2025)		Wiehle Avenue Extension (2011)		Wiehle Avenue Extension (2025)		Full LPA (2025)	
Primary Roadway/Cross Street	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay
Reston Parkway/Dulles Toll Road WB Ramp	F/119	F/117	n.a.	n.a.	n.a.	n.a.	F/106	F/119
Reston Parkway/Dulles Toll Road EB Ramp	F/100	C/22	n.a.	n.a.	n.a.	n.a.	F/102	D/36
Reston Parkway/Sunset Hills Road	E/78	F/98	n.a.	n.a.	n.a.	n.a.	F/82	F/100
Reston Parkway/Sunrise Valley Drive	F/216	F/207	n.a.	n.a.	n.a.	n.a.	F/218	F/209
Reston Parkway/Town Center Parkway	C/24	F/98	n.a.	n.a.	n.a.	n.a.	C/26	F/99
Sunset Hills Road/Future North Station Entrance	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	B/16	A/6
Edmund Haley Drive/Future South Station Entrance	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	B/11	B/11

NOTES: n.a. = not applicable – station exists only in full LPA

Underlined items meet the threshold at which mitigation should be considered.

The majority of the intersections in the vicinity of the Reston Parkway Station that were analyzed for traffic impacts will be failing in the 2025 No Build Alternative, and the implementation of the full LPA will have minimal additional impact on all but two of these intersections. The two intersections where a deterioration in LOS and increased delay will occur after implementation of the full LPA are at the intersections of Reston Parkway and the Dulles Toll Road eastbound and westbound exit ramps. Proposed mitigation strategies for are discussed in 6.2.4.

H. Herndon-Monroe Station

The Herndon-Monroe station would be located at the site of the present Herndon-Monroe park-and-ride lot, off of Sunrise Valley Drive and just east of the Van Buren/Monroe Street overpass. The station would

be located in the median of the DIAAH, with entrance pavilions provided on both sides of the roadway. These would be connected to the station by pedestrian bridges over the Dulles Toll Road and the DIAAH. On the north side of the Dulles Toll Road, a sidewalk would be constructed to provide direct access to the north side entrance pavilion from Herndon Parkway. On-street bus bays are planned for this location but no Kiss & Ride facilities are planned. Table 6.2-11 presents the projected LOS and delay for key intersections in the vicinity of the Herndon-Monroe Station.

Table 6.2-11: Herndon-Monroe Station Peak Hour Intersection LOS and Delay in Seconds

			Locally Preferred Alternative					
	No Build Alternative (2025)		Wiehle Avenue Extension (2011)		Wiehle Avenue Extension (2025)		Full LPA (2025)	
Primary Roadway/Cross Street	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay
Fairfax County Parkway/Dulles Toll Road WB Ramp	C/31	D/46	n.a.	n.a.	n.a.	n.a.	C/34	E/67
Fairfax County Parkway/Dulles Toll Road EB Ramp	D/39	E/59	n.a.	n.a.	n.a.	n.a.	D/39	E/70
Fairfax County Parkway/Spring Street/Sunset Hills Road	B/11	C/21	n.a.	n.a.	n.a.	n.a.	B/11	C/21
Fairfax County Parkway/Sunrise Valley Drive	F/164	F/95	n.a.	n.a.	n.a.	n.a.	F/168	F/107
Herndon Parkway/Spring Street/Sunset Hills Road	C/33	F/114	n.a.	n.a.	n.a.	n.a.	D/41	F/116
Herndon Parkway/Monroe Street/Van Buren Street	D/58	E/76	n.a.	n.a.	n.a.	n.a.	E/61	F/93
Sunrise Valley Drive/Monroe Street	E/74	D/44	n.a.	n.a.	n.a.	n.a.	F/107	E/76
Sunrise Valley Drive/Roark Drive (H-M park-and-ride Entrance)	B/11	B/10	n.a.	n.a.	n.a.	n.a.	D/43	C/28
Worldgate Drive/Van Buren Street	B/15	C/22	n.a.	n.a.	n.a.	n.a.	B/18	C/26

NOTES: n.a. = not applicable – station exists only in full LPA

Underlined items meet the threshold at which mitigation should be considered.

Park-and-ride and Kiss & Ride demand at Herndon-Monroe will lead to increased traffic volumes, increased delay, and declining Levels of Service at a number of intersections in the vicinity of the station in the full LPA. Impacts at the following intersections would be significant enough to warrant mitigation:

- Fairfax County Parkway/Dulles Toll Road Westbound Ramp;
- Fairfax County Parkway/Dulles Toll Road Eastbound Ramp;
- Fairfax County Parkway/Sunrise Valley Drive;
- Herndon Parkway/Monroe Street/Van Buren Street; and
- Sunrise Valley Drive/Monroe Street.

Proposed mitigation strategies for these intersections are discussed in section 6.2.4.

I. Route 28 Station

The Route 28 Station would be located in the median of the DIAAH, midway between Centreville Road/Elden Street and Route 28. Station entrance pavilions would be located on the north and south sides of the DIAAH, with a pedestrian bridge connecting each to the station platform. On the north side, a small Kiss & Ride and bus transfer facility would be built to provide access to the station from Herndon

and Sterling. On the south side, a park-and-ride, and bus transfer facility would be constructed. Table 6.2-12 presents the projected LOS and delay for key intersections in the vicinity of the Route 28 Station.

Table 6.2-12: Route 28 Station Peak Hour Intersection LOS and Delay in Seconds

			Locally Preferred Alternative					
	No Build Alternative (2025)		Wiehle Avenue Extension (2011)		Wiehle Avenue Extension (2025)		Full LPA (2025)	
Primary Roadway/Cross Street	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay
Centreville Road/Worldgate Drive	D/41	E/64	n.a.	n.a.	n.a.	n.a.	D/42	E/64
Centreville Road/Dulles Toll Road – WB Ramp	F/130	F/142	n.a.	n.a.	n.a.	n.a.	F/125	F/154
Centreville Road/Dulles Toll Road – EB Ramp	F/102	C/27	n.a.	n.a.	n.a.	n.a.	F/116	C/23
Centreville Road/Sunrise Valley Drive	D/54	E/79	n.a.	n.a.	n.a.	n.a.	D/53	E/56
Sunrise Valley Drive/South Station Entrance	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	B/15	C/21
Herndon Parkway/Centreville Road	F/99	F/110	n.a.	n.a.	n.a.	n.a.	F/107	F/197

NOTES: n.a. = not applicable – station exists only in full LPA

Underlined items meet the threshold at which mitigation should be considered.

Park-and-ride and Kiss & Ride demand at Route 28 will lead to increased traffic volumes, increased delay, and declining Levels of Service at a number of intersections in the vicinity of the station in the full LPA. Impacts at the following intersections would be significant enough to warrant mitigation with the implementation of the full LPA.

- Centreville Road/Dulles Toll Road – Westbound Ramp;
- Centreville Road/Dulles Toll Road – Eastbound Ramp; and
- Herndon Parkway/Centreville Road.

Proposed mitigation strategies for these intersections are discussed in section 6.2.4.

J. Dulles Airport Station

A formal traffic analysis for the full LPA was not performed for the Dulles Airport station area because the proposed station at the airport would not have any project-related park-and-ride or Kiss & Ride activity.

K. Route 606 Station

The Route 606 Station will be located in the median of the Dulles Greenway, just to the west of the Route 606 overpass. A pedestrian bridge spanning the westbound lanes of the Dulles Greenway would connect the median mezzanine with feeder bus facilities Kiss & Ride, and park-and-ride facilities and parking. Table 6.2-13 presents the projected LOS and delay for key intersections in the vicinity of the Route 606 Station.

Table 6.2-13: Route 606 Station Peak Hour Intersection LOS and Delay in Seconds

Primary Roadway/Cross Street	No Build Alternative (2025)		Locally Preferred Alternative					
			Wiehle Avenue Extension (2011)		Wiehle Avenue Extension (2025)		Full LPA (2025)	
	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay
Route 606/Route 789	C/21	C/24	n.a.	n.a.	n.a.	n.a.	E/56	F/89
Route 789/North Station Entrance	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	B/19	B/12
South Station Entrance	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	B/11	B/17

NOTES: n.a. = not applicable – station exists only in full LPA

Underlined items meet the threshold at which mitigation should be considered.

Traffic operations at one intersection in the vicinity of the Route 606 Station will deteriorate under the full LPA. Proposed mitigation strategies for this intersection are discussed in section 6.2.4.

L. Route 772 Station

The Route 772 Station will be located in the median of the Dulles Greenway, east of the Route 772 overpass. Pedestrian bridges spanning the Dulles Greenway would connect the median platform with feeder bus, Kiss & Ride and park-and-ride facilities. Table 6.2-14 presents the projected LOS and delay for key intersections in the vicinity of the Route 772 Station.

Table 6.2-14: Route 772 Station Peak Hour Intersection LOS and Delay in Seconds

Primary Roadway/Cross Street	No Build Alternative (2025)		Locally Preferred Alternative					
			Wiehle Avenue Extension (2011)		Wiehle Avenue Extension (2025)		Full LPA (2025)	
	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay	a.m. LOS/ Delay	p.m. LOS/ Delay
North Side Facility: Station Access Road/Station Entrance	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	A/5	A/8
South Side Facility: Station Access Road/Station Entrance	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	C/24	B/15

NOTES: n.a. = not applicable – station exists only in full LPA

Underlined items meet the threshold at which mitigation should be considered.

Intersections in the vicinity of the station will operate at acceptable levels of service and therefore no mitigation is required.

6.2.4 MITIGATION

6.2.4.1 Station Access

To ensure adequate vehicular access to station areas, the following roadway improvements specified in the General Plans would be constructed under the Wiehle Avenue Extension and the full LPA.

A. Wiehle Avenue Extension

At the Tysons Central 123 station, a dedicated right turn lane for buses on Tysons Boulevard and acceleration lane on Route 123 would be added.

At the Wiehle Avenue station, a new left turn lane northbound on Wiehle Avenue, a new left turn lane to eastbound Dulles Toll Road exit ramp at Wiehle Avenue, and a new acceleration lane for bus egress from station facilities onto the westbound Dulles Toll Road would be added. Westbound Sunset Hills Road between Wiehle Avenue and Isaac Newton Square would be widened and a left turn lane would be provided. The private roadway south of Sunset Hills Road would be improved to VDOT standards.

B. Full LPA

In addition to the access improvements constructed as part of the Wiehle Avenue Extension, the full LPA would include additional left turn lanes to northbound Route 789 at both north and south station entrances at the Route 606 station. A right turn lane and left turn lanes on Route 606 for vehicular access to yard facilities would be added at S&I Yard Site 15.

6.2.4.2 Station Vicinity

To mitigate long-term effects on traffic in the vicinity of proposed Metrorail stations, these additional roadway improvements would be constructed before the opening of the Wiehle Avenue Extension and the full LPA.

A. Wiehle Avenue Extension

A second left turn lane from Old Meadow Drive to southbound Route 123 would be added at Tysons East. At Wiehle Avenue, the right turn lane (dual or free-flow) from eastbound Sunset Hills Road to southbound Wiehle Avenue, and the right turn lane (dual or free-flow) from westbound Sunrise Valley Drive to northbound Wiehle Avenue, would be improved.

B. Full LPA

For the Reston Parkway station, an additional northbound through lane on Reston Parkway at Sunrise Valley Drive intersection would be constructed, and the right turn lane (dual or free-flow) from southbound Reston Parkway to westbound Sunrise Valley Drive would be improved.

At the Herndon-Monroe station, a left turn lane from southbound Monroe Street to eastbound Sunrise Valley Drive would be added; and the right turn lane (dual or free-flow) from eastbound Sunrise Valley Drive to southbound Fairfax County Parkway would be improved. The lane configurations at the Van Buren (Monroe) Street and Herndon Parkway intersection would be modified.

An additional right turn lane from southbound Route 789 to westbound Route 606 would be constructed at the Route 606 station.

Additional intersection improvements in the vicinity of stations would be needed by 2025, as presented in the Traffic Analysis Technical Report.

6.2.4.3 Construction Activities

To mitigate the effects of construction related traffic management and detours, DRPT would prepare maintenance of traffic plans. In addition, DRPT will make all efforts to maintain access (pedestrian and vehicular) to existing businesses during construction. Existing access points would be used to the extent possible. If alternative access is required, signage and detours will be provided. DRPT would maintain communication with affected businesses and residents in order to minimize construction effects. The

development of mitigation measures for construction activities would be coordinated with VDOT for Commonwealth-owned roadways and MWAA for the Dulles Airport property, including the DIAAH.

6.3 EFFECTS ON OTHER TRANSPORTATION FACILITIES AND SERVICES

Other transportation facilities and services in the corridor include parking, bicycle and pedestrian facilities, and air transportation service. This section provides a brief description of these transportation facilities and services in the Dulles Corridor, and also documents the potential effects of the Wiehle Avenue Extension and the full LPA on these services and facilities. Section 6.3.1 describes the existing and planned parking, bicycle and pedestrian facilities, and air transportation facilities in the corridor. Section 6.3.2 presents the anticipated long-term effects associated with the No Build Alternative, the Wiehle Avenue Extension and the full LPA. Section 6.3.3 provides an overview of the expected effects on other transportation facilities and services during construction of the Wiehle Avenue Extension and the full LPA, and Section 6.3.4 presents proposed mitigation measures for any anticipated adverse effects.

6.3.1 EXISTING AND PLANNED FACILITIES AND SERVICES

6.3.1.1 Parking

Several public park-and-ride facilities are located within the Dulles Corridor. Table 6.3-1 identifies each of the public parking facilities designed to facilitate use of public transportation and/or ridesharing in the corridor.

Table 6.3-1: Park-and-Ride Facilities in the Dulles Corridor

	Park-and-Ride Facilities	Owner/ Operator	Daily Cost	Number of Spaces	Usage Rate (2000)	Connecting Services
1	East Falls Church Metrorail Station	WMATA	$3.75	385	100.0%	Metrobus
2	West Falls Church Metrorail Station	WMATA	$3.75	1,037	100.0%	Metrobus, Fairfax Connector, Washington Flyer
3	West Falls Church Metrorail Station (overflow parking)	Virginia Tech/ University of Virginia	$3.75	275	100.0%	Metrobus, Fairfax Connector, Washington Flyer
4	Reston East (Wiehle Avenue)	Fairfax County	Free	827 (2,300)*	100.0%	Fairfax Connector, RIBS
5	Reston North (Overflow parking for Reston East)	VDOT	Free	320	28.4%	Fairfax Connector, RIBS
6	Reston South	Fairfax County	Free	400	42.3%	Fairfax Connector, RIBS
7	Herndon-Monroe	Fairfax County	Free	1,745	47.2%	Fairfax Connector, RIBS
8	Dulles North	Loudoun County	Free	750	31.6%**	Loudoun County Community Bus Service
Total Capacity				**5,739** **(7,212)***		

NOTES: See Figure 6.1-1 for locations
* Planned total number of spaces by 2010. ** For Year 2002
Source: WMATA, Fairfax County, VDOT, and CTC.

Except for the two overflow facilities, each of the park-and-ride lots also provides Kiss & Ride areas. In the No Build Alternative, it is assumed that the Reston East Park-and-Ride at Wiehle Avenue will expand from 827 spaces to a total of 2,300 spaces by 2010, resulting in a baseline parking capacity of 7,212 spaces through 2025. A park-and-ride structure at West Falls Church Station is also being constructed by Fairfax County and WMATA. No other changes to the existing park-and-ride lots in the corridor are anticipated.

Non-transit-related parking systems in the Dulles Corridor are typical of other suburban environments. Off-street parking is provided at most major office complexes and retail facilities within the corridor. Surface parking is most typical. Structured parking is increasing, particularly in Tysons Corner. Reston Town Center also contains large multi-level parking garages. Parking is generally free at office and retail developments within the corridor. However, some businesses in Tysons Corner are beginning to charge employees for parking as the value of these spaces increases. It is expected that the amount of paid parking in Tysons Corner will continue to increase. Dulles Airport recently added 8,500 parking spaces as part of its six-year expansion plans.

6.3.1.2 Bicycle and Pedestrian Facilities

The pedestrian environment varies within the corridor. Most roads in Tysons Corner have sidewalks, although the character of existing development and topography discourage walking. Residential areas in Reston are typically served by a system of trails linking neighborhood clusters. Commercial areas are generally equipped with adequate pedestrian facilities to support internal circulation, although pedestrian linkages between developments are usually poor. Eastern Loudoun County is less developed, and there are currently no pedestrian facilities within proposed station areas. A detailed inventory of pedestrian facilities in the corridor is provided in the *Traffic Analysis and Station Access Study* (August 2004).

The Dulles Corridor includes approximately 25 miles of the 45-mile Washington & Old Dominion Railroad Regional Park (commonly known as the W&OD Trail). The park consists of a 100-foot wide right-of-way reserved for recreational use, and extends from just west of Interstate 395 in south Arlington to Purcellville in central Loudoun County. Within the corridor, the W&OD Trail runs along I-66 adjacent to the East Falls Church Metrorail Station and continues west through Falls Church, Vienna, and Reston. The trail crosses the DIAAH and Dulles Toll Road just east of Wiehle Avenue and runs parallel to Sunset Hills Road through the Reston Town Center area. The trail continues northwest through Herndon, Sterling, and Ashburn.

No new major pedestrian facilities are planned in the corridor through 2025.

6.3.1.3 Air Transportation

Dulles Airport is located in eastern Loudoun County and western Fairfax County, just west of Route 28 and south of the Dulles Greenway. Ground access to Dulles Airport is currently provided primarily via the DIAAH and Route 28. According to MWCOG's Washington-Baltimore Regional Air Passenger Survey (1998), access by private vehicle to Dulles Airport has been declining as a share of total passenger access to the airport for flight originations, but the total overall number of vehicle trips to the airport has increased. In addition, the use of taxis and airport shuttles and buses, provided through the privately contracted Washington Flyer service, has increased dramatically. Table 6.3-2 provides information on mode of access to Dulles Airport and to all three of the region's major airports (Dulles Airport, National Airport, and Baltimore-Washington International Airport (BWI) in Maryland) for the years 1987 and 1998.

Table 6.3-2: Mode of Access, Dulles Airport and All Major Airports in Region, 1987 to 1998 (thousands of originations)

Mode of Access	Dulles Airport				All Major Airports in Region			
	1987	%	1998	%	1987	%	1998	%
Private Car	2,127	61	2,549	47	6,127	47	8,081	44
Rental Car	616	18	839	15	1,747	14	2,734	15
Taxi	368	11	875	16	2,905	22	3,535	19
Metrorail (National Airport)	0	0	0	0	1,025	8	801	4
LRT/Commuter Rail (BWI)	0	0	0	0	10	0	138	1
Airport Bus/Limo	170	5	618	11	456	4	1,892	10
Hotel/Motel Courtesy Bus	57	2	516	10	377	3	1,250	7
Other	129	4	39	1	277	2	95	1
TOTAL	**3,467**	**100**	**5,444**	**100**	**12,924**	**100**	**18,526**	**100**

Source: MWCOG Survey (2001)
NOTE: Percentages may not sum to 100% due to rounding.

Dulles Airport is the region's largest air passenger facility, and one of the largest and fastest growing airports in the world. Dulles Airport served 20.1 million passengers (an average of 55,000 a day) on nearly 454,000 commercial, general aviation, and commuter flights in 2000. Passenger traffic has increased 56 percent since 1996. In addition, Dulles Airport is currently undergoing a six-year, $3.4 billion program of improvements to increase air and landside capacity (including the construction of 8,500 new parking spaces). MWAA plans to add a third lane in both directions of the DIAAH sometime before 2010. It is anticipated that air passenger service will eventually reach 55 million annually when all planned facilities are built by 2035. Employment at the airport is expected to reach 60,000 that same year.

6.3.2 LONG-TERM EFFECTS

6.3.2.1 Parking

Parking for each rail station was designed and sized based on projected demand for spaces, site constraints, cost, local land use plans, as well as consultations with local governments. As identified earlier, Fairfax County plans to expand the Reston East Park-and-Ride facility to 2,300 spaces by 2010. Implementation of the Dulles Corridor Rapid Transit Project would accelerate the expansion of this facility as part of the construction Wiehle Avenue Station. In addition to this expansion, the project would add between 1,500 and 9,550 other new parking spaces in the corridor by 2025. Table 6.3-3 summarizes the planned parking expansion program of the Dulles Corridor Rapid Transit Project.

Table 6.3-3: Existing and Planned Parking Capacity for the Dulles Corridor Rapid Transit Project

Park-and-Ride Stations	No Build Alternative (2025)	Locally Preferred Alternative		
		Wiehle Avenue Extension (2011)	Wiehle Avenue Extension (2025)	Full LPA (2025)
Tysons West	0	500	500	500
Wiehle Avenue	2,300	2,300	2,300	2,300
Herndon-Monroe	1,750	1,750	2,450	3,500
Route 28	0	0	0	2,000
Route 606	750	750	750	2,750
Route 772	0	300	300	3,300
TOTAL	**4,800**	**5,600**	**6,300**	**14,350**

Parking totals for the full LPA in the table above reflect maximum planned capacities for the full LPA. The parking capacities for Route 606 assume the capacity at the Dulles North Transit Center, in addition to any parking built for the Dulles Corridor Rapid Transit Project. The Dulles North Transit Center would continue to operate through 2025 as an overflow parking facility.

For the Wiehle Avenue Extension and the full LPA, parking fees would be charged at corridor parking facilities. Parking costs at stations and stops throughout the corridor are assumed to be $3.75 per day (the current charge levied at Fairfax County Metrorail park-and-rides), and increase every three years at the 3-year average of the Consumer Price Index.

For the Wiehle Avenue Extension, parking levels would be far less than those for the full LPA. East of and including Wiehle Avenue Station, the park-and-ride capacity provided by the Wiehle Avenue Extension would be the same as that provided by the full LPA, but west of Wiehle Avenue Station substantially less capacity would be provided. Overall, the Wiehle Avenue Extension would provide 39 percent of the parking capacity for the full LPA. If the full LPA is not implemented in its entirety, park-and-ride capacity would be increased at Herndon-Monroe to 2,450 spaces to meet the increased demand for transit services in the corridor. By 2025, capacity would be approximately 44 percent of the capacity for the full LPA.

6.3.2.2 Bicycle and Pedestrian Facilities

The Dulles Corridor Rapid Transit Project is not expected to have a significant impact on existing and planned bicycle and pedestrian facilities in the corridor. Implementation of the Wiehle Avenue Extension or the full LPA would include the construction of pedestrian and vehicular access to/from public rights of way. Bicycle racks and lockers would be provided at all stations and express bus stops, adjacent to station/stop entrances. All other pedestrian and bicycle trails would fall under the jurisdiction of the local governments. All pedestrian facilities built for the Dulles Corridor Rapid Transit Project would be compliant with requirements of the Americans with Disabilities Act of 1991.

The full LPA would not affect the alignment and operation of the W&OD Trail. However, it would result in the provision of greater regional transit access to the western portion of the trail. The Metrorail system has a liberal “Bike-on-Rail” policy, which allows passengers, during designated hours, to bring bicycles on to the system. Both the Wiehle Avenue and Reston Parkway stations are located adjacent to the W&OD Trail, and, therefore, would serve as convenient bike/transit transfer points for passengers choosing to split their trip between bicycles and rail.

6.3.2.3 Air Transportation

The Dulles Corridor Rapid Transit Project would have no impact on air transportation at Dulles Airport. However, the project would provide improved transit access to and from Dulles Airport for most of the metropolitan area. Specifically, the full LPA will provide seamless transit access to and from anywhere on the existing Metrorail system, including downtown Washington, D.C.; regional employment and activity centers such as Reston, Tysons Corner, Ballston, Rosslyn, Crystal City, Pentagon City, Alexandria, Bethesda, Rockville, and Silver Spring; and National Airport. The project would also provide a connection to MARC Commuter Rail services at the Union Station and New Carrollton Metrorail stations. MARC provides a rail link from the Metrorail system to BWI Airport in Maryland.

6.3.3 CONSTRUCTION EFFECTS

No construction effects are anticipated for bicycle and pedestrian facilities or air transportation. Some impacts may occur during the expansion of park-and-ride lots at the different Metrorail stations. These impacts should be minor and of a short duration.

6.3.4 MITIGATION

Plans for operations during construction would be developed for each of the park-and-ride lots to be affected during lot expansion, in coordination with the lot owners, either Fairfax County or VDOT.

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