

5 ECONOMIC EFFECTS

This chapter describes the economic effects of the Wiehle Avenue Extension and full Locally Preferred Alternative (LPA) of the Dulles Corridor Rapid Transit Project on the local economies of Fairfax and Loudoun counties and on the broader Commonwealth of Virginia economy. The chapter also describes the potential effects on station area development under the planning and design guidelines for Fairfax and Loudoun counties. The sections of this analysis discuss the following topics:

Section 5.1 discusses the economic effects that project expenditures would have on Fairfax and Loudoun counties and the Commonwealth of Virginia in terms of increased employment and related economic effects relative to the No Build Alternative.

Section 5.2 presents the planning context for each station area. Information on the development character and any potential changes are presented.

Section 5.3 describes the station area development projected for the No Build Alternative, Wiehle Avenue Extension, and the Full LPA including projections of office, retail, hotel, industrial, institutional, and residential development. Opportunities for joint development at station locations are also discussed.

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.

5.1 ECONOMIC CONDITIONS

As documented in Chapter 3 of this Final EIS, both Fairfax and Loudoun counties are experiencing population and employment growth that exceeds the national average. Growth in these counties is expected to continue through 2025. The project would provide increased accessibility to both residents and businesses within the Dulles Corridor and is expected to contribute to this growth. New transportation capacity could create competitive advantages for businesses located in the corridor. The LPA would also provide a critical intermodal connection in the region’s transportation system by providing a transit link to

Washington Dulles International Airport (Dulles Airport). This connection would help support the airport's expansion plan and help it retain its status as an engine of economic activity in Northern Virginia.

The construction, operation, and subsequent market response to the availability of this improved level of transit service would influence economic activity in Fairfax and Loudoun counties, as well as the broader Commonwealth of Virginia. Building the requisite transit facilities would expand payrolls for the duration of the project's construction cycle. Operating the new transit service would also expand payrolls, but, unlike the one-time construction impacts, the new jobs required to operate and maintain the new line would be long-term recurring impacts. The construction and transit hiring associated with the project represent the direct effects of investment in the Dulles Corridor. The earnings of these newly-hired construction and transit workers would translate into a proportional increase in consumer demand as these workers purchase goods and services in the region. A further increase of new employment across a variety of industrial sectors and occupational categories is expected as employers hire to meet this increase in local consumer demand. This latter hiring represents the project's indirect impact.

The LPA is also expected to have positive effects on commercial and residential properties located near transit stations. As described in greater detail in Section 5.3, the LPA would contribute to greater economic development by encouraging or supporting higher-density residential and commercial land uses around transit stations. Past experience with the Metrorail system has demonstrated that transit investment has had positive effects on the residential and commercial development near the stations. It is expected that new development around station areas in the Dulles Corridor would also attract businesses from outside Fairfax and Loudoun counties, providing net economic benefits. New development activity has already been observed at several of the proposed station areas in the study area.

This section describes the anticipated employment, earnings and fiscal effects of the project. This analysis focuses on the net effects generated by new investment in the local economy resulting from two alternatives: (1) implementation of the Wiehle Avenue Extension, and (2) implementation of the full LPA. The two areas considered in this analysis include (1) the combined counties of Fairfax and Loudoun, and (2) the Commonwealth of Virginia. Impacts are reported for both regions; however, since Fairfax and Loudoun counties are located within the Commonwealth, the impacts for the two regions are not additive. The economic effects are estimated in terms of net output, employment, earnings, and the resulting fiscal impacts.

The economic impacts associated with construction, operation and maintenance expenditures for the Wiehle Avenue Extension and the full LPA are measured using regional multipliers from the U.S. Department of Commerce Bureau of Economic Analysis (BEA). Derived from the Regional Input-Output Modeling System, the so-called RIMS II multipliers measure the total change (direct + indirect effects) in output, employment, and earnings that results from an incremental change to a particular industry. Two sets of multipliers are used. The first set was constructed by BEA to reflect the combined Fairfax and Loudoun county economies. The Fairfax County portion of the multiplier includes the City of West Falls Church and City of Fairfax; BEA does not provide a Fairfax County only multiplier as the raw data does not permit this disaggregation. The second set of multipliers corresponds to the Commonwealth of Virginia's economy. The multipliers are based on the 1997 Benchmark Input-Output Table for the nation and 2001 regional accounts data; they represent the most updated version available at the time this analysis was prepared (prepared by BEA, August 2004).

Fiscal impacts are quantified by applying tax rate information obtained directly from the counties and the Commonwealth to the estimated changes in economic activity.

This analysis assumes that transportation network improvements included in the No Build Alternative are also included in the Wiehle Avenue Extension and full LPA (i.e., the Build Alternatives). Therefore, this section focuses only on the additional incremental economic impacts attributable to the Build Alternatives, i.e., the marginal differences between the future conditions under the No Build Alternative and the future conditions under implementation of the Build Alternative.

5.1.1 OUTPUT, EARNINGS, AND EMPLOYMENT EFFECTS FROM CAPITAL EXPENDITURES

Construction of the Wiehle Avenue Extension and the full LPA represents significant capital investment in the local economies of Fairfax and Loudoun counties. This spending would increase the employment, earnings and output for the duration of the construction process. Capital cost estimates/construction values for this analysis are presented in 2004 dollars, providing a common value for expenditures that are distributed over a number of years. The following section describes the project expenditures and anticipated economic impacts.

5.1.1.1 Capital Expenditures

The capital expenditures for construction of the Wiehle Avenue Extension is estimated to cost \$1.3 billion (in 2004 dollars); construction of the full LPA would cost approximately \$2.8 billion (2004 dollars). These cost figures are the gross capital expenditures for the two alternatives relative to the No Build Alternative.

Total capital expenditures are divided into four major categories. These include:

- General Construction: guideway elements, stations, yards and shops, sitework, systems, and contingencies;
- Vehicles: vehicle manufacturing and assembly;
- Right-of-Way (ROW): all rights-of-way, land and existing improvements; and
- Soft Costs: engineering and related services.

Table 5.1-1 summarizes the capital costs by expenditure activity for the Wiehle Avenue Extension and the full LPA.

Table 5.1-1: Summary of Capital Costs (in thousands, 2004 dollars)

Alternative	General Construction Cost ⁽¹⁾	Vehicles	Right-of-Way	Soft Costs	Total ⁽²⁾
Wiehle Avenue Extension	\$ 847,074	\$167,266	\$ 82,613	\$234,399	\$1,331,352
Full LPA	\$ 1,877,464	\$334,532	\$106,061	\$521,892	\$2,839,948

¹ Includes Contingency Costs

² This table lists only the net capital expenditures for each alternative relative to the No Build Alternative.

Note: Values in this Table and hereafter are expressed in 2004 \$ in order to provide a common reference for impacts that occur in different years. Source: WMATA.

The economic impact of these expenditures will vary significantly by activity and depends on the amount of locally produced goods and services embodied in the purchase. Construction goods and services will be purchased in the local economy. Although every building material required for the project is not produced locally, the RIMS II multipliers reflect the supplier linkages for the industry, and thus account for

this leakage from the local economy. Leakage represents purchases made by local suppliers from sources outside the region.

Vehicle purchases, by contrast, will not be purchased from the local economy. Fairfax and Loudoun counties do not produce transit vehicles, limiting the potential impact this purchase can have. Thus, as no local labor is used to produce the vehicles, no local impact generated by their purchase is realized. Although there is likely to be some assembly required upon delivery of the vehicles and it is possible that a component of the vehicle might be made by a Virginia supplier, these possibilities represent a negligible share of the vehicles' cost and are excluded from this analysis.

Right-of-Way expenditures shown above are for real property only; the transaction costs associated with these expenditures are included in the Soft Cost category. As there is no labor associated with the ROW expenditures, there is no economic impact to the pure land costs.

Soft Costs are purchased in the local economy and have an impact in the local economy.

In sum, there are two types of capital expenditures that are expected to impact the economy: General Construction and Soft Costs. The total expenditure on these two categories is anticipated to be \$1.1 billion (2004 dollars) for the Wiehle Avenue Extension and \$2.3 billion (2004 dollars) for the full LPA.

5.1.1.2 Funding Sources

In order to isolate the potential economic effects of the project to the local economy and the Commonwealth of Virginia, it is necessary to distinguish those resources that are new to the economy and that would not be invested in Fairfax and Loudoun counties but for the project, from those that would still be spent in the region with similar economic effects (for example, funds that would be allocated to other transportation construction projects in the region).

Tables 5.1-2a and 5.1-2b summarize the funding sources and amounts that are planned for the Wiehle Avenue Extension and the full LPA. They also indicate whether these funds represent new resources that are being invested in the region because of the project or whether instead they are existing funds that would have been spent on a transportation project somewhere in the region regardless of project implementation.

Table 5.1-2a: Summary of Funding Sources for the Wiehle Avenue Extension (in thousands, 2004 dollars)

Wiehle Avenue Extension			New or Existing Funding Source by Region	
Source	Amount (Thousands)	Funding Share	Fairfax and Loudoun Counties	Virginia
Federal 5309 New Starts	\$ 665,676	50%	New	New
Virginia Transportation Act of 2000	\$ 66,568	5%	New	Existing
Dulles Toll Road Revenues	\$ 266,270	20%	Existing	Existing
Fairfax County Dulles Rail Transportation Improvement District	\$ 332,838	25%	Existing	Existing
Total Funding	\$1,331,352	100%	----	----

Source: DRPT

Table 5.1-2b: Summary of Funding Sources for the full LPA (in thousands, 2004 dollars)

Full LPA			New or Existing Funding Source by Region	
Source	Amount (Thousands)	Funding Share	Fairfax and Loudoun Counties	Virginia
Federal 5309 New Starts	\$ 1,419,974	50.0%	New	New
Virginia Transportation Act of 2000	\$ 62,479	2.2%	New	Existing
Dulles Toll Road Revenues	\$ 647,508	22.8%	Existing	Existing
Fairfax County Dulles Rail Transportation Improvement District	\$ 457,232	16.1%	Existing	Existing
Loudoun County Public Transportation Fund	\$ 2,840	0.1%	Existing	Existing
Loudoun County Business Professional and Occupancy License Revenue Bonds	\$ 133,478	4.7%	Existing	Existing
MWAA Passenger Facility Charges	\$ 116,438	4.1%	Existing	Existing
Total Funding	\$ 2,839,948	100.0%	-----	-----

Source: DRPT

In the tables above, Federal funds originate from outside the Commonwealth of Virginia; thus, they represent new resources. Since the Virginia Transportation Act of 2000 funds could be spent anywhere within the Commonwealth of Virginia, their commitment to the Dulles Corridor Rapid Transit project makes them a new source from the perspective of Fairfax and Loudoun counties, but an existing source from the Commonwealth as a whole. The remaining funding sources originate within the combined county region and Commonwealth and are considered existing revenue sources. Those sources are labeled “Existing” in the tables above and do not represent new resources.

There are two considerations in determining the capital cost impacts:

- Are the expenditures of the type likely to yield impacts in the local economy?
- Are the funds used to make those expenditures new resources for the region?

The capital costs representing expenditures that accrue to the region, (General Construction and Soft Costs), are adjusted to account only for new resources flowing into the region and expected to generate impacts within the region. Only funding levels that represent new resources flowing into the region generate impacts with implementation of the Build Alternatives. Table 5.1-3 shows the level of funding for the capital cost elements that would generate economic impacts within Fairfax and Loudoun counties and the Commonwealth of Virginia. The expenditures with significant local labor content that would yield impacts on the local economy are derived from the data in Table 5.1-1 and represent the sum of expenditures on General Construction and Soft Costs for each alternative. The amount of funding that represents new resources for the region under each alternative is derived from Tables 5.1-2a and Table 5.1-2b and represents the sum of those sources designated as “new”.

Table 5.1-3: Capital Costs Representing New Resources (in thousands, 2004 dollars)

Alternative	Expenditures That Impact Local Economy	New Resources for Fairfax and Loudoun Counties	New Resources for Virginia
Wiehle Avenue Extension	\$1,081,473	\$ 732,244	\$ 665,676
Full LPA	\$2,399,356	\$1,482,453	\$1,419,974

Source: WMATA and DRPT

For both the Wiehle Avenue Extension and the full LPA, the amount of funding that represents new resources for the region is less than the total of all capital expenditures expected to impact the local economy. Thus, every single dollar of new resources is expected to yield an impact.

As the amount of funding that represents “new funding” is less than the total amount required for General Construction, this analysis assumes that the New Funds are spent on general construction expenditures. This assumption does not bias the analysis as the multipliers for “construction” and for “professional, scientific, and technical services” (the multiplier that would be applied to the soft cost category) are similar, particularly for Fairfax and Loudoun counties, as shown in Table 5.1-4.

Table 5.1-4: Comparison of RIMS II Multipliers by Region

		Multiplier				
		Final Demand			Direct Effect	
Region	Industry	Output (dollars)	Earnings (dollars)	Employment (jobs)	Earnings (dollars)	Employment (jobs)
Virginia	Construction	2.2554	0.6750	20.9623	1.9795	2.1221
	Professional, scientific and technical services	1.9999	0.6875	17.0331	1.6648	2.2641
Fairfax and Loudoun Counties	Construction	1.5612	0.3352	10.1004	1.5542	1.6167
	Professional, scientific and technical services	1.5799	0.4560	10.3048	1.3701	1.6995

Source: Bureau of Economic Analysis, U.S. Department of Commerce

The interpretation of the multipliers shown in Table 5.1-4 is as follows. The construction industry is used as an example.

The Final Demand Output Multiplier represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand by the construction industry.

The Final Demand Earnings Multiplier represents the total dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the construction industry.

The Final Demand Employment Multiplier represents the total change in number of jobs that occurs in all industries for each \$1 million of output delivered to final demand by the construction industry.

The Direct Effect Earnings Multiplier represents the total dollar change in earnings of households employed by all industries for each additional dollar of earnings paid directly to households employed by the construction industry.

The Direct Effect Employment Multiplier represents the total change in number of jobs in all industries for each additional job in the construction industry.

Applying the Final Demand Multipliers for the construction industry to the amount of new funding/resources that will be used for capital expenditures provides estimates of the net output, earnings and employment impacts generated by each alternative by region for the year 2025. The results are summarized in Table 5.1-5a and 5.1-5b. Note that these are one-time impacts that last for the duration of construction. One job is defined as a job for one person of one year’s duration. As an example, a job for one person that had a duration of three years would be defined as three person-year jobs.

Table 5.1-5a: Net Effects of Construction Activity Upon Fairfax and Loudoun Counties

Alternative	No Build Alternative (2025)	Locally Preferred Alternative	
		Wiehle Avenue Extension (2025)	Full LPA (2025)
New Capital Expenditure (Thousands)	NA	\$732,244	\$1,482,453
Output ⁽¹⁾		1.5612	1.5612
Earnings ⁽¹⁾		0.3352	0.3352
Employment ⁽¹⁾		10.1004	10.1004
Output (Thousands)	NA	\$1,143,179	\$2,314,406
Earnings (Thousands)	NA	\$245,448	\$496,918
Employment (jobs)	NA	6,621	13,404

¹ The Final Demand Employment Multiplier is based on 2001 data; output has been adjusted according the BEA guidelines.

Table 5.1-5b: Net Effects of Construction Activity Upon the Commonwealth of Virginia

Alternative	No Build Alternative (2025)	Locally Preferred Alternative	
		Wiehle Avenue Extension (2025)	Full LPA (2025)
New Capital Expenditure (Thousands)	NA	\$665,676	\$1,419,974
Output ⁽¹⁾		2.2554	2.2554
Earnings ⁽¹⁾		0.675	0.675
Employment ⁽¹⁾		20.9623	20.9623
Output (Thousands)	NA	\$1,501,366	\$3,202,609
Earnings (Thousands)	NA	\$449,331	\$958,482
Employment (jobs)	NA	12,492	26,646

¹ The Final Demand Employment Multiplier is based on 2001 data; output has been adjusted according the BEA guidelines.

5.1.1.3 Long-Term Effects

There are no long-term effects associated with the economic impacts generated by capital expenditures as construction-related impacts solely last for the duration of the project's construction cycle.

A. *No Build Alternative*

The No Build conditions consist of the future economic conditions (employment, output and earnings) that would exist under the No Build Alternative. The economic analysis focused on the incremental differences between the No Build condition and implementation of the Wiehle Avenue Extension and full LPA.

B. *Wiehle Avenue Extension*

For Fairfax and Loudoun counties, the effect of construction spending for the Wiehle Avenue Extension would result in just over \$1.14 billion in output (2004 dollars), over \$245 million in earnings, and approximately 6,600 person-year jobs in Fairfax and Loudoun counties. Within the Commonwealth of Virginia, construction spending would result in \$1.5 billion in output (2004 dollars), \$449 million in earnings, and approximately 12,400 new person-year jobs.

C. *Full LPA*

For Fairfax and Loudoun counties, the effect of construction spending for the full LPA would result in \$2.3 billion in output (2004 dollars), nearly \$500 million in earnings, and approximately 13,400 new person-year jobs. Within the broader Commonwealth of Virginia, construction spending would result in \$3.2 billion in output (2004 dollars), nearly \$960 million in earnings, and approximately 26,600 person-year jobs.

5.1.2 OUTPUT, EARNINGS, AND EMPLOYMENT EFFECTS FROM OPERATIONS AND MAINTENANCE EXPENDITURES

Implementation of the project would create jobs and earnings as a result of ongoing operations and maintenance (O&M) expenditures. The projected O&M expenditures for the Wiehle Avenue Extension and full LPA are calculated for Metrorail service. This analysis assumes that funding for O&M would be procured from local government funds and project-generated funds, including:

- Local Government Funds: Washington Metropolitan Area Transit Authority (WMATA) Compact, benefit assessment districts, and/or Metropolitan Washington Airports Authority (MWA) participation; and
- Project-Generated Funds: passenger fare revenue, joint development, parking revenues, and advertising and concessions income.

Although these expenses would originate from local sources, they represent spending that would not take place but for the implementation of service along the Wiehle Avenue Extension and full LPA. The expansion of transit service associated with the Build Alternatives represents an expansion of economic activity in the counties and Commonwealth, and thus generates recurring net economic impacts (long-term).

One potential source of federal funding for maintenance of the Build Alternatives is the Section 5307 Urbanized Area Formula Funds. These grants are applied to preventative maintenance, and could be used after the seventh year of operations. At this time, no Section 5307 funds have been allocated for maintenance for this project, and they are not assumed to be part of the operating funding plan, which is described in more detail in Chapter 8. If federal funds are applied to maintenance activities for the Build Alternatives, they could generate some additional net economic effects to the local and state economies through increased employment and earnings.

The estimate of full-time employees (FTE) and associated earnings required for the No Build Alternative, the Wiehle Avenue Extension and full LPA alternatives are shown in Tables 5.1-6a and Table 5.1-6b. The increased transit employment would result in positive economic impacts to Fairfax and Loudoun counties and the Commonwealth of Virginia, both through direct hiring to fill transit jobs and indirectly as these transit workers spend their earnings, thus creating additional consumer demand and jobs to meet that demand.

Because output measures are less reliable in the context of transit service where market prices are not available, this analysis uses the Direct Effect Multipliers as described above to generate estimates of the employment and earnings impacts attributable to O&M activities. The multipliers applied in this section of the analysis are for the industry labeled "transit and ground passenger transportation." The wages shown in Table 5.1-6b are in 2004 dollars and represent total wages and salaries.

Table 5.1-6a: Net Employment Impacts from Operations and Maintenance Activities

Alternative	No Build Alternative (2025)	Locally Preferred Alternative	
		Wiehle Avenue Extension (2025)	Full LPA (2025)
Total Transit Employment (FTE)	6,942	7,424	7,489
Net Change in Direct Employment Over No Build	NA	482	546
Fairfax and Loudoun Employment Multiplier ⁽¹⁾	1.2233	1.2233	1.2233
Total Net Change in Employment in Fairfax and Loudoun	NA	590	668
Virginia Employment Multiplier ⁽²⁾	1.3726	1.3726	1.3726
Total Net Change in Employment in Virginia	NA	661	750

¹ The multipliers shown are the RIMS II Direct Effect Multiplier for transit and ground passenger transportation industry. Assumes Fairfax and Loudoun residents are hired for these jobs.

⁽²⁾ The multipliers shown are the RIMS II Direct Effect Multiplier for transit and ground passenger transportation industry. Assumes Virginia residents are hired for these jobs.

Table 5.1-6b: Net Earnings Impacts from Operations and Maintenance Activities (in thousands, 2004 dollars)

Alternative	No Build Alternative (2025)	Locally Preferred Alternative	
		Wiehle Avenue Extension (2025)	Full LPA (2025)
Total Transit Earnings	\$583,804,910	\$621,287,737	\$637,923,374
Net Change in Direct Earnings Over No Build	NA	\$37,482,827	\$54,118,464
Fairfax and Loudoun Employment Multiplier ⁽¹⁾	1.5701	1.5701	1.5701
Total Net Change in Earnings in Fairfax and Loudoun	NA	\$58,851,786	\$84,971,400
Virginia Earnings Multiplier ⁽²⁾	1.9136	1.9136	1.9136
Total Net Change in Earnings in Virginia	NA	\$71,727,137	\$103,561,092

¹ The multipliers shown are the RIMS II Direct Effect Multiplier for transit and ground passenger transportation industry. Assumes Fairfax and Loudoun residents are hired for these jobs.

⁽²⁾ The multipliers shown are the RIMS II Direct Effect Multiplier for transit and ground passenger transportation industry. Assumes Virginia residents are hired for these jobs.

Source: WMATA Operating & Maintenance Cost Model

5.1.2.1 Long-Term Effects

The employment and earnings impacts generated by O&M expenditures are long-term recurring benefits. They are summarized below.

A. *No Build Alternative*

The No Build conditions consist of the future economic conditions (employment, output and earnings) that would exist under the No Build Alternative. The economic analysis focused on the incremental differences between the No Build condition and implementation of the Wiehle Avenue Extension and the full LPA.

B. *Wiehle Avenue Extension*

For Fairfax and Loudoun counties, the effect of O&M spending for the Wiehle Avenue Extension would result in just over over \$58.9 million in earnings, and 590 person-year jobs in Fairfax and Loudoun counties. Within the Commonwealth of Virginia, O&M spending would result in \$71.7 million in earnings, and approximately 660 new person-year jobs.

C. *Full LPA*

For Fairfax and Loudoun counties, the effect of O&M spending for the full LPA would result in nearly \$85 million in earnings and approximately 670 new person-year jobs. Within the broader Commonwealth of Virginia, O&M spending would result in nearly \$103.5 million in earnings, and nearly 750 person-year jobs.

5.1.3 TAX REVENUE EFFECTS

Construction of both the Wiehle Avenue Extension and the full LPA would require the purchase of some private land and/or structures for easements, ROW, parking, and station facilities. This purchase would remove these properties from the existing local tax base. The annual tax revenue associated with the loss of properties due to ROW purchase, displacement and relocation was determined by first identifying the actual properties required for the Wiehle Avenue Extension and for the full LPA. The estimated assessed value (2001 base adjusted to 2003 tax year value) of the required acquisition was then multiplied by the current 2004 real estate tax rates for Fairfax and Loudoun counties. Real estate in Virginia is assessed at 100 percent of its fair market value.

Table 5.1-7 summarizes the assessed value of the properties to be acquired and shows the expected annual tax revenue lost from removing properties from the Fairfax and Loudoun county tax base for the No Build Alternative, Wiehle Avenue Extension, and full LPA. The expected annual special district tax revenue loss associated with removing properties from the tax base is summarized in Table 5.1-8.

In comparing the assessed property values shown in Table 5.1-7 with the ROW acquisition costs reported in Table 5.1-1, several caveats are in order as these two figures differ. The assessed value of property required for ROW acquisition is based on identifying those land parcels required for the alignment, determining the share of the parcel that will need to be purchased, and applying this share to the parcel's current assessment value according to the Tax Assessors' records in Fairfax and Loudoun counties. This value represents an estimate of the assessed value of the land to be purchased.

The ROW acquisition costs, by contrast, assume that the property sells for a price above the assessed value as speculation and market forces increase the parcels' sales price. There is a small and fixed amount of land along the Dulles corridor alignment that would need to be purchased making this a scarce resource. It is reasonable and prudent in estimating project cost to assume prices would rise accordingly. There is significant uncertainty about how much land values would appreciate in anticipation of the ROW acquisition; thus, the ROW capital cost used in this analysis assumes a 100 percent markup of the Assessed Value. For example, the \$82,613,000 ROW costs estimated for the Wiehle Avenue Extension that are reported in Table 5.1-1 imply an assessed value of \$41,306,500.

There are several property taxes that apply in the area where the ROW would be acquired. Both Fairfax and Loudoun counties levy a property tax on all properties. This is referenced as the Base Rate in the discussion below. In Fairfax County, the Base Rate is \$1.13 per \$100 of assessed property value. In Loudoun County, the Base Rate is \$1.1075 per \$100 of assessed property value (rates as of August 2004). In addition, several properties slated for ROW acquisition fall within two special taxing districts in Fairfax County. These are the Dulles Rail Transportation Improvement District, which levies an additional \$0.22 per \$100 assessed value above the county's Base Rate on commercial and industrial zoned property, and a tax imposed for the Control of Gypsy Moth/Canker Worm Infestations. This special tax levies \$0.001 per \$100 of the valuation of real estate within Fairfax County, including property in the incorporated towns within the county, but exclusive of the Lake Barcroft Water Improvement District. The calculation of the lost property tax revenue associated with transferring land from the private sector to public use is provided in Tables 5.1-7 and 5.1-8 below. Table 5.1-7 describes the Base Rate tax calculation. Table 5.1-8 describes the calculation of the special taxes.

Table 5.1-7: Assessed Value of Properties Required for ROW and Associated Loss of Base Tax Revenues (in thousands, 2004 dollars)

Alternative	No Build Alternative (2025)	Locally Preferred Alternative	
		Wiehle Avenue Extension (2025)	Full LPA (2025)
Assessed Value of Fairfax County Properties	\$0	\$41,306	\$45,696
Base Tax Rate ⁽¹⁾	\$1.13	\$1.13	\$1.13
Lost Revenue Fairfax County	\$0	\$467	\$516
Assessed Value of Loudoun County Properties	\$0	\$0	\$7,334
Base Tax Rate ⁽¹⁾	\$1.1075	\$1.1075	\$1.1075
Lost Revenue Loudoun County	\$0	NA	\$81
Total Base Tax Revenue Lost	\$0	\$467	\$598

Per \$100 of assessed value.

Note: Allocation of assessed value between Fairfax and Loudoun counties is based on an estimate of partial acquisitions proportioned between counties

Source: DRPT and Counties of Fairfax and Loudoun

Table 5.1-8: Assessed Value of Properties Required for ROW and Associated Loss of Special District Tax Revenues (in thousands, 2004 dollars)

Alternative	No Build Alternative (2025)	Locally Preferred Alternative	
		Wiehle Avenue Extension (2025)	Full LPA (2025)
Assessed Value of Fairfax County Properties	\$0	\$41,306	\$45,696
Assessed Value of TID Properties in Fairfax County	NA	\$30,400	\$30,400
Dulles TID Tax Rate	\$0.22	\$0.22	\$0.22
Lost Revenue in TID	NA	\$67	\$67
Gypsy Moth Tax Rate	0.001	0.001	0.001
Lost Revenue from Special Gypsy Moth Tax	NA	0.413	0.457
Total Special Tax Revenue Lost	NA	\$67.29	\$67.34

Source: DRPT and Fairfax County

Combining the lost revenues from the Base and Special Purpose taxes shown in the tables above, the lost property tax revenue associated with the full LPA is \$665,000. Lost property tax revenue associated with the Wiehle Avenue Extension is \$534,000. In both cases, loss of the tax base is a fraction of the total tax base in the two counties. According the *Annual Report (Fiscal Year 2003)* of the Virginia Department of Taxation, the total taxable fair market value in Fairfax County was \$114.9 billion and in Loudoun County it was approximately \$24.9 billion. The report provides the most recent data available; it reports values for tax year 2002. Thus, the \$45.6 million in assessed value lost in Fairfax County represents 0.04 percent of the 2002 tax year tax base for the full LPA, since it has the highest purchase requirements. In the case of Loudoun County, the estimated loss for the full LPA represents 0.03 percent of the 2002 tax base. As the total value of the tax base in both counties rose between tax year 2002 and 2003, the shares calculated above have likely fallen slightly.

The lost tax revenues associated with this fractional reduction in the tax base would be a recurring loss on an annual basis. Partially offsetting these losses, however, is an increase in other tax revenues. For example, the creation of new jobs and earnings associated with the recurring O&M spending would foster greater retail spending. The Commonwealth of Virginia taxes retail sales at a 3.5 percent rate. Fairfax County taxes retail sales at a 1 percent rate. Loudoun County does not have a retail sales tax. The additional revenues from this spending are recurring gains.

The construction of the LPA is also expected to have positive effects on the value of residential and commercial properties within walking distance to the station areas. The increase in value translates into greater tax revenues and would be expected to accrue to the counties. These effects could be amplified by increased density allowances in the station areas. The development effects that are anticipated from the Wiehle Avenue Extension and the full LPA are described in greater detail in Section 5.2 Station Area Development.

5.2 STATION AREA DEVELOPMENT

For analysis of development impacts of the proposed improvements, assessment zones were defined around each proposed station. The sizes of these zones vary by location and are based on the areas in which direct development impacts are possible. Direct impacts were based on the comprehensive plans for each jurisdiction, and are defined as the area in which density bonuses are available upon implementation of the LPA.

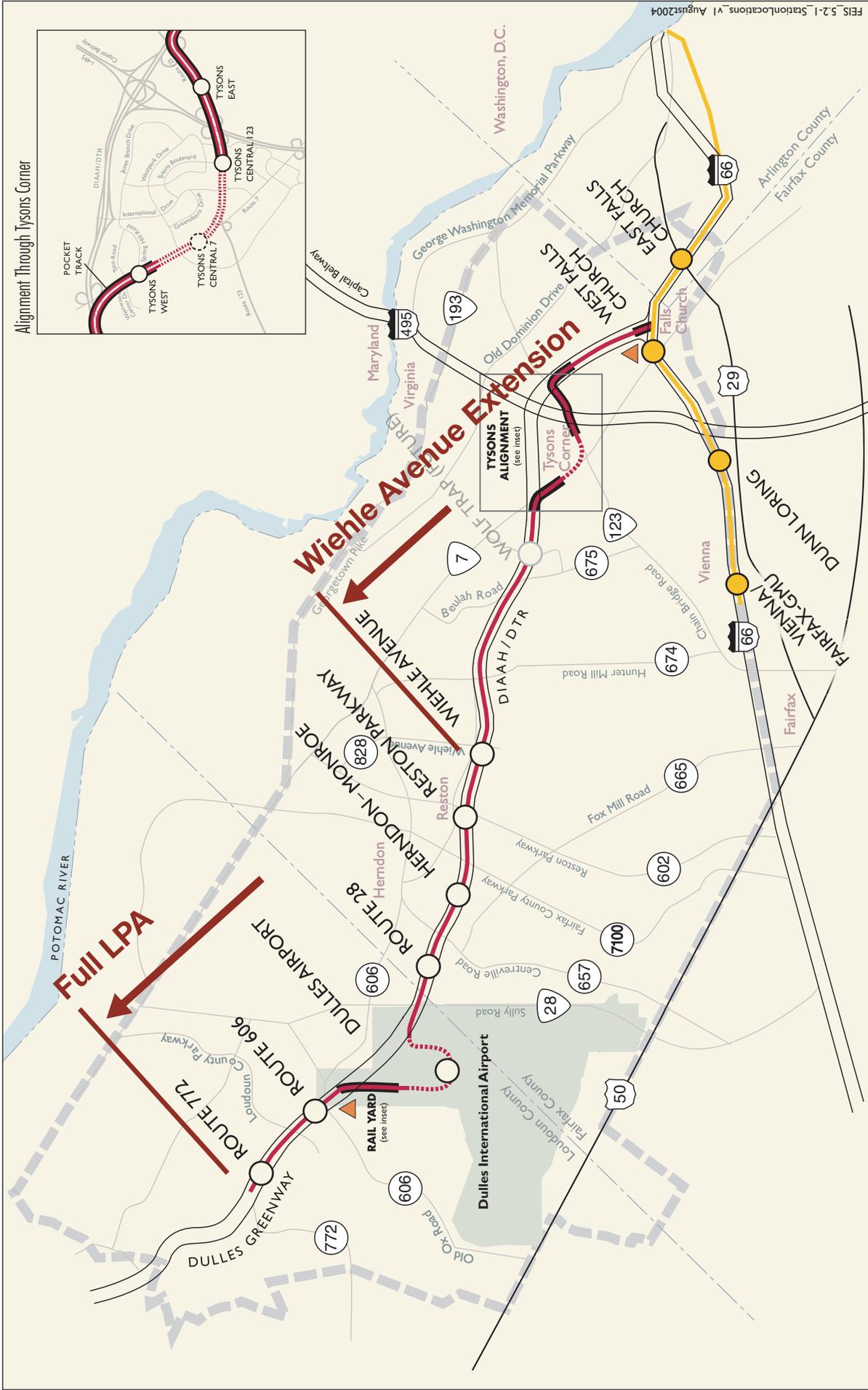
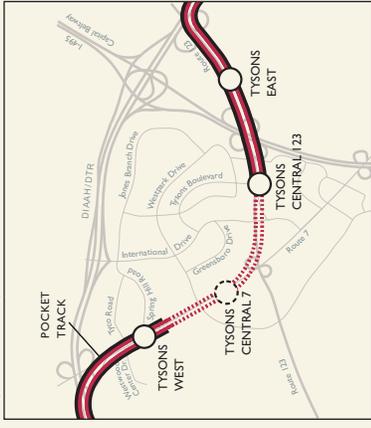
For proposed stations within the Tysons Corner area, the impact assessment zone is defined, generally, as the traffic analysis subzones that fall within 1,600 feet of the stations. For the proposed stations in Fairfax County west of Tysons Corner, the impact assessment zones are defined by land units, as developed by the Dulles Corridor Land Use Task Force, that fall within one-half mile of the proposed station. Finally, for the proposed stations in Loudoun County, the assessment zones are defined as all land within one-half mile of the proposed stations. Analysis of the Dulles Airport Station was limited to the main terminal area.

5.2.1 STATION AREA PLANNING AND DESIGN GUIDELINES

The Fairfax County Comprehensive Plan, 2003 Edition (Comprehensive Plan) and the *Loudoun County Revised General Plan, Amended January 2003 (General Plan)* include design guidelines for areas surrounding the proposed stations. The Build Alternatives is also expected to have positive effects on commercial and residential properties located near transit stations. The Build Alternatives would contribute to greater economic development by encouraging or supporting higher-density residential and commercial land uses around transit stations. Past experience with the Metrorail system has demonstrated that transit investment has had positive effects on the residential and commercial development near the stations. It is expected that new development around station areas in the Dulles Corridor would also attract businesses from outside Fairfax and Loudoun counties, providing net economic benefits. Both plans define policy guidelines designed to coordinate and facilitate increases in development. The following sections discuss the guidelines as they would apply to the station areas. Please see Figure 5.2-1 for station locations.

Tysons Corner has been designated as an urban center in the Comprehensive Plan. Although the land area is split between the McLean and Vienna Planning Districts, the Comprehensive Plan dedicates a separate section to the Tysons Corner Urban Center and describes detailed plans for development. These plans include use, density floor and area ratio (FAR), height, and urban design guidelines.

Alignment Through Tysons Corner



LEGEND

Major Arterials	Existing Metrorail Station	Future Station
Limited Access Highway	Proposed Station	Rail Yard
U.S. Highways	At-grade/Retained Fill	Proposed Underground Station
	Aerial	Dulles Corridor Limits
	Underground	
	Aerial Yard Lead	

Note: Short bridge crossings for highway and DIAAH/DTR is the Dulles International Airport Access Highway/Dulles Toll Road culvert overpasses/underpasses not shown.

Figure 5.2-1

Station Locations

0 1 2 3 MILES

FEIS_5.2-1_StationLocations_V1_August2004

The Comprehensive Plan divides the Tysons Corner Urban Center into three generalized areas: core, non-core, and edges. The core, generally bounded by Westpark Drive on the north, the Capital Beltway on the east, and Route 7 on the south and west, is divided into three activity centers. These activity centers are designated Tysons I, Tysons II, and Greensboro Drive and encompass about 20 percent of the land area in Tysons Corner. Surrounding the core, the non-core areas are divided into six sub-areas: West*Park; West Gate; East Route 7; West Route 7; a high-density residential area; and Tyco Road. Beyond the non-core areas, the plan designates an “edge” that defines the limits of Tysons Corner and serves as a buffer to adjacent single-family neighborhoods. The outer limits of this edge are roughly the Dulles International Airport Access Highway (DIAAH) and Dulles Toll Road to the north, Magarity Road to the east, Old Courthouse Road to the south, and the Courthouse Spring Branch Environmental Quality Corridor to the west.

In the core areas, a greater emphasis is placed on the development of mixed-use centers. However, given the development in place, the Greensboro Drive activity center is envisioned to remain a predominantly office employment center, and the Tysons I activity center would be primarily characterized as a retail center. The Tysons II area has the greatest potential for a balanced mix of uses due to the large amount of undeveloped land.

The non-core areas, despite some infill redevelopment and design improvements, are planned to have a predominantly suburban character. Today, these areas include a range of uses generally clustered by office parks, strip retail, and auto dealerships. These areas are envisioned to maintain their general uses with some conversion of strip retail into office development with integrated retail. Beyond these areas, the edges are designed to buffer the single-family neighborhoods surrounding Tysons Corner, which are expected to remain primarily residential in nature and not absorb much additional development.

One of the primary objectives of the Plan for Tysons Corner will be to provide alternative modes of transportation, including an emphasis on pedestrian- and transit-oriented design. The Plan calls for mixed-use developments, connected to transit and accessible by foot. The plan further calls for these physical connections to be attractive and appealing to pedestrians with the inclusion of trees, signage, and street furniture.

The primary planning objective for the Dulles Corridor Rapid Transit Project stations at Wiehle Avenue, Reston Parkway, Herndon Monroe Station, and Route 28 is to create mixed-use developments with a more urban character in areas closest to the stations. The recently adopted amendments to the Comprehensive Plan include a set of design guidelines with two primary goals: first, to create a pedestrian-friendly environment that would complement the plan recommendations; and second, to protect the existing high-quality built and natural environment.

The urban design guidelines established in the Comprehensive Plan cover a range of features including building heights, gateways, pedestrian and transit-oriented design, and streetscaping. The design guidelines cover a range of issues from building design, height, and arrangement to transit access and pedestrian and bicycle connections. These guidelines place the densest development immediately adjacent to the transit stations with densities tapering off toward the existing neighborhoods. They also require physical connections for pedestrians and bicycles to the stations and within the station areas. Other requirements include underground parking or parking structures when possible, the prohibition of freestanding retail establishments, provision of plazas or courtyards, and coordinated lighting and signage.

The design of the Dulles Airport station would be coordinated with MWA and would be accommodated in plans for the airport. The design of areas outside of the station, including pedestrian access, parking, and circulation, is managed by MWA.

The General Plan includes guidelines for development around the Route 606 and Route 772 stations. The General Plan identifies the Route 606 station area as a Transit Related Employment Center (TREC) and the Route 772 Station area as Transit Oriented Development (TOD). Although the TOD would include a significant amount of residential development and the TREC would not, the general design guidelines apply to both areas.

The General Plan calls for the areas around the two stations to be developed in a transit- and pedestrian-friendly manner with short blocks and a rectilinear grid street pattern. Guidelines include pedestrian-oriented building facades with ground-floor retail and distinctive public spaces.

At Route 772, the General Plan calls for a commercial core defined by a one-quarter mile radius around the station and an outer core between the one-quarter and one-half mile radii. If the station is to be located within the median of the Dulles Greenway, the plan encourages the creation of an urban deck over the roadway.

5.2.2 STATION AREA CHARACTERISTICS AND DEVELOPMENT POTENTIAL

The Comprehensive Plan and the General Plan provide for existing development characteristics and density bonuses at the proposed new Metrorail station locations. The following section describes the potential changes in the level of development at each of the station areas due to the implementation of the Build Alternatives. The potential changes in development for the Wiehle Avenue Extension and the full LPA that could occur if Metrorail is implemented in the corridor are compared to projections for the No Build Alternative for 2025.

Tysons East Station Area

The Tysons East Station would be located on Route 123 east of the Capital Beltway near the intersection of Colshire Drive. Large office buildings with large parking facilities define the character of this area while some low-rise apartment and townhouse communities with on-street parking are also located in the station area. Most of the land is developed. Because of the presence of low-density and somewhat older structures, there is great potential for this station area to change in character from a suburban pattern to more of a transit-supportive land use mix, if redeveloped. Several of the parcels would be eligible for density bonuses if Metrorail were constructed, resulting in a mixed-use area with direct access to regional transit.

The Comprehensive Plan provides for increased densities in the areas surrounding the proposed Tysons East Station. To the north of Route 123, the plan recommends densities of 0.5 to 1.0 FAR without rail service. With rail service, the plan allows non-residential development up to 1.5 FAR within 1,000 feet of the station, and up to 1.0 FAR between 1,000 and 1,600 feet of the station. If the Comprehensive Plan was amended to include residential uses, these rail-related densities could increase significantly. South of Route 123, the plan allows all of the areas along Old Meadow Road and Colshire Drive to increase to a maximum of 1.0 FAR; however, the density increases allowed north of Route 123 also apply in this area.

Tysons Central 123 Station Area

The Tysons Central 123 Station would be located north of Tysons Corner Center on Route 123 outside the Capital Beltway. The primary features of this area are the undeveloped parcels located north of the proposed station location. Development proposals have been approved for 6.8 million square feet of office and possible mixed-use development oriented toward a future station. Approximately 2.4 million square feet has already been constructed. As approved in June 2003, the remaining development may move forward when the project receives a Full Funding Grant Agreement (FFGA) from FTA. Farther to the north within this area is the Tysons Galleria, while a landscaped area and parking for Tysons Corner Center is located south of the station. The area is auto-oriented with buildings set back from major arterial roadways and the Capital Beltway. Most of the development is separate from surrounding uses and there is little pedestrian activity due to the large surface parking lots and scale of the roadways in the area. However, the large tracts of surface parking within the station area could be redeveloped at greater densities.

The currently undeveloped land north of the proposed station is projected to be developed as part of the No Build Alternative. The presence of a station in this location would provide pedestrian linkages to Tysons Corner Center and Tysons Galleria and would allow more intense development under the density bonuses allowed in the Comprehensive Plan. The ability of this transit station area to change in character is limited somewhat by the large amount of acreage dedicated to major roadways and the existing shopping malls.

The Comprehensive Plan provides for increased densities in the areas surrounding the proposed Tysons Central 123 Station. To the north of Route 123, the plan allows the currently planned 1.0 FAR maximum to increase to 2.0 FAR within 1,000 feet of the station and to 1.65 FAR between 1,000 and 1,600 feet of the station. South of Route 123, the plan allows the existing 0.8 FAR to increase to 2.0 FAR within 1,000 feet of the station and to 1.65 FAR between 1,000 and 1,600 feet of the station. If plans were amended to include the provision of housing, these rail-related densities could increase significantly. Potential levels of development for the Wiehle Avenue Extension would be the same as those of the full LPA.

Tysons Central 7 Station Area

The Tysons Central 7 Station area would be located along Route 7 just west of the Route 7/Route 123 interchange. The development in this station area includes strip retail with parking lots immediately adjacent to the proposed station platform and major office development located along Greensboro Drive and Westpark Drive. The scale of the office development is larger than in other areas of Tysons Corner and pedestrian activity is limited. Some townhouses are located within the station area on Gosnell Road, but would be separated from the station platform by the Pike 7 Plaza.

The Tysons Central 7 Station area has significant potential for increased densities, as allowed by the Comprehensive Plan, in the vicinity of rail stations. Much of the land within this area is used as parking for strip-mall developments. While the area is completely developed, there is potential for redevelopment which could introduce a more transit-oriented development pattern.

The Comprehensive Plan provides for increased densities in the areas surrounding the Tysons Central 7 Station. For core areas (in this case the area east of Route 7) the plan allows densities up to 2.0 FAR within 1,000 feet of the station and 1.65 FAR between 1,000 and 1,600 feet of the station. For non-core areas the allowable densities are lower: 1.5 FAR within 1,000 feet and 1.0 between 1,000 and 1,600 feet. If the Comprehensive Plan was to be amended to include housing, these rail-related densities could increase significantly.

Tysons West Station Area

The Tysons West Station area would be located on Route 7 at the intersections with Tyco Road and Spring Hill Road. A variety of uses exist in the station area, including strip-development retail, industrial, commercial, as well as some residential development that would be separate from the station location. Two features dominate the development character of this area: 1) Route 7, a heavily traveled major arterial with few pedestrian crossings; and 2) several large auto dealerships. The combination of these two features results in a large amount of space in the station area that is currently used for surface parking lots and roadways. In addition, the industrial component located along Tyco Road limits pedestrian activity. The Comprehensive Plan supports redevelopment for this area.

Under the Build Alternatives, the potential exists for a change in character in the Tysons West station area. The area is auto-oriented and could become more transit-oriented in the future as more density is allowed should the transit station be constructed. However, there would be some constraints to this redevelopment due to the lack of pedestrian connections across Route 7 and the presence of successful auto dealerships. Nonetheless, the construction of the station would encourage a more transit-supportive character in the area.

Currently, the Comprehensive Plan does not provide for increased densities in all areas surrounding the proposed Tysons West Station. South of Westwood Center Drive/Tyco Road, on both sides of Route 123 the plan allows the planned densities to increase to 1.5 FAR within 1,000 feet of the station and to 1.0 FAR between 1,000 and 1,600 feet of the station. If the Comprehensive Plan was amended to include housing, these rail-related densities could increase by 50 percent. North of this area, the plan does not include density bonuses associated with the station and limits development to a maximum of 1.0 FAR.

Wiehle Avenue Station Area

The Wiehle Avenue Station would be located within the median of the DIAAH just west of the Wiehle Avenue overpass. Current development within the station area is suburban in character, consisting of individual office buildings and office parks immediately adjacent to the station location. Many of the office buildings were recently constructed and include large surface parking lots and some parking garages. On the north side of the station area, there are limited industrial uses and two large surface park-and-ride lots. The Washington & Old Dominion (W&OD) Railroad Regional Park bisects the north side of the transit station area.

The Wiehle Avenue Station would provide pedestrian connections across the DIAAH and Dulles Toll Road to businesses in Reston. In addition, the Comprehensive Plan allows for mixed-use, transit-oriented development up to a 2.5 FAR to occur on the north side of the transit station area and up to 1.25 FAR on the south side of the station area upon approval of the FFGA for implementation of the Build Alternatives. This new development, in conjunction with the transit station, could create a more transit-supportive environment at the Wiehle Avenue Station. For redevelopment to occur, parcel consolidation, particularly on the north side, would need to occur. Fairfax County is working to solicit joint development commitments for this site that would include mixed-uses, parking, and station facilities.

With the implementation of the Build Alternatives at the Wiehle Avenue Station, plan options in the modified Comprehensive Plan (amended January 27, 2003) allow for density bonuses dependent on achieving a certain mix of uses. At the Wiehle Avenue Station, the Comprehensive Plan allows for mixed-use development within one-half mile of the station. The plan calls for 40 to 75 percent of development to be residential with remaining development split between office, retail and hotel uses, and office uses limited to 40 percent. The land units between one-quarter and one-half mile of the station are

allowed the following bonus densities: a mix of 35 to 50 percent residential, up to 50 percent office, and up to 15 percent retail, with the option for hotel uses. The levels of development for the Wiehle Avenue Extension would be the same as that of the full LPA.

Reston Parkway Station Area

The development character of the Reston Parkway Station area is similar to that of the Wiehle Avenue Station area. Some of the land within the station area consists of the DIAAH and Dulles Toll Road and cannot be developed. Most of the development in the station area consists of large office buildings surrounded by landscaped grounds with both surface and structure parking. The Reston Town Center, located north of the DIAAH, is more urban in character and includes a mix of retail, residential, and office uses in a single development. Several large parking structures surround and provide parking for the Town Center. In addition, a large-scale residential development located on Reston Parkway has been completed, and another has begun. On the south, there is some low-rise retail development along Sunrise Valley Drive, a major high-rise office development, and a hotel. There are still some undeveloped parcels, including those just to the west of the Reston Town Center, within the station area.

The Comprehensive Plan allows for mixed-use transit-oriented development, with up to a 2.0 FAR, within one-quarter mile of the transit station area upon approval of the FFGA for implementation of the full LPA. For areas south of the DIAAH (e.g., Carr America site), the plan calls for 40 to 50 percent of development to be residential with remaining development split between office, retail, and hotel uses, and office uses limited to 40 percent. For areas north of the DIAAH and Dulles Toll Road (e.g., TRW site), the plan calls for 50 to 60 percent of development to be residential. The land units between one-quarter and one-half mile of the station are allowed the following bonus densities: a mix of 35 to 50 percent residential, up to 50 percent office, and up to 15 percent retail, with the option for hotel uses. This new development, in conjunction with the transit station, could create a more transit-supportive environment at the Reston Parkway Station. In addition, the Reston Parkway station would provide direct access across the DIAAH and Dulles Toll Road to the TRW building between the Nextel development and proposed uses on Town Center Parkway. A new station would also provide pedestrian connections directly to several large developments on Sunset Hills Drive, the residential area of West Market, and the Reston Town Center. The future level of development for this station under the Wiehle Avenue Extension would be the same as the No Build Alternative.

Herndon-Monroe Station Area

The Herndon-Monroe Station area would include portions of the Town of Herndon and Fairfax County. Some of the land within the station area consists of the DIAAH and Dulles Toll Road and cannot be developed. Other development in the station area can be classified as suburban, with residential uses separated from the office development. Because most of the land in this station area is developed, any new development would have to be in the form of redevelopment. One exception is an undeveloped parcel located south of Herndon Parkway in the eastern portion of the station area.

The Herndon-Monroe station area does not have much new growth potential with implementation of the full LPA. The Town of Herndon is re-evaluating their plans for the area in the hopes of encouraging more transit-supportive development and joint development in the future. Although density bonuses are permitted in the area south of the station, a change in development character is limited due to presence of the existing park-and-ride facility, single-family homes, and wetlands. The Herndon-Monroe Station would provide an additional pedestrian connection between the Town of Herndon and Fairfax County, and would provide access to pedestrian facilities, businesses, and homes located in the station area.

With the implementation of the full LPA, the Comprehensive Plan would allow for mixed-use development immediately east of the park-and-ride facility and to the west of Monroe Street. The plan calls for 55 to 65 percent of development to be residential with remaining development split between office, retail, and hotel uses. The land units between one-quarter and one-half mile of the station are allowed the following bonus densities: a mix of 35 to 50 percent residential, up to 50 percent office, and up to 15 percent retail, with the option for hotel uses. Those parcels that include the Herndon-Monroe park-and-ride facility and the Sunrise Valley Park Wildlife Habitat and Nature Preserve would not change with the implementation of the full LPA. Land uses north of the proposed station within the Town of Herndon are not anticipated to change with implementation of the LPA based on current plans. The future level of development at this station for the Wiehle Avenue Extension would be the same as the No Build Alternative.

Route 28 Station Area

The Route 28 Station would be located to the east of the Dulles Toll Road and Route 28 interchange within Fairfax County. Most of the station area is undeveloped. Development that does exist is located primarily to the north of the Dulles Toll Road and includes townhouses, a school, the Center for Innovative Technology (CIT), and some open space. Development plans for the north side include additional residential units. The south side is largely undeveloped, although mixed-use development projects have been approved. Some major suburban office developments and a hotel are located within the area.

The change in character at Route 28 could include new transit-oriented development (particularly south of the Dulles Toll Road), transit facilities such as Kiss & Ride lots, and pedestrian connections throughout the area. Many of these improvements are proposed as elements of the Dulles Station development project, which would be located south of the Route 28 Station.

With the implementation of the full LPA, the Comprehensive Plan allows for most of the land units north of the station within one-half mile to be developed in a mixed-use fashion with a significant amount of residential use. The plan calls for 35 to 50 percent of the development to be residential, up to 50 percent office, and up to 15 percent retail, with the option for hotel uses. South of the proposed station, the plan recommends a mix of uses including office and high-density residential, but does not quantify that mix. The future level of development at this station for the Wiehle Avenue Extension would be the same as the No Build Alternative.

Dulles Airport Station Area

The only developments near the station at Dulles Airport are airport-related facilities. The development character would not change at the Dulles Airport Station.

Route 606 Station Area

The area around the Route 606 Station in Loudoun County is undeveloped or is part of the Dulles North Transit Center. South of the Dulles Greenway, most of the land is within the confines of the Dulles Airport, limiting the development potential.

The recently adopted General Plan established a TREC at the Route 606 station area. This designation provides for the creation of a mixed-use transit node with office, light industrial and supporting uses. With the implementation of the full LPA, the maximum allowable density increases from 0.6 FAR to 2.0 FAR. The development potential of this area is limited by height restrictions due to its proximity to the airport. Airport noise restrictions prohibit the construction of residential development in this area. Under the

Wiehle Avenue Extension, the future level of development at this station area would be the same as under the No Build Alternative.

Route 772 Station Area

The area around the Route 772 Station is also largely undeveloped. Within a half-mile of the stop are some single-family homes and townhouses. Two major planned developments have been approved for the station area: Moorefield Station and Loudoun Station. South of the station, the Moorefield Station development will include more than 9 million square feet of commercial development and 6,000 dwelling units on 600 acres. Moorefield Station will be developed in phases and will be closely coordinated with the extension of Metrorail service to the site. North of the station, the Loudoun Station development will include up to 1,514 multi-family dwellings, as well as up to 1.8 million square feet of office, hotel, theater, and retail uses.

The presence of a transit stop would allow for transit-oriented development under the General Plan, including a mix of uses, pedestrian connections, dense development at the station, and limitations on auto-oriented development. With the implementation of the full LPA, the plan allows for an increase from 0.6 FAR and 16 dwelling units per acre to 2.0 FAR and 50 dwelling units per acre, with the highest densities closest to the station. The future level of development at this station under the Wiehle Avenue Extension would be the same as that of the No Build Alternative.

5.2.3 MITIGATION

No mitigation measures are proposed. Station area developments would enhance the transit-supportive character of the area surrounding the proposed stations. The land use plans developed by local governments within the Dulles Corridor all contain guidelines to support transit, higher densities, mixed-use development, and walkable bike-friendly development patterns in close proximity to transit stations.

5.3 DEVELOPMENT EFFECTS

This section assesses the level of development projected in the corridor as a result of the Wiehle Avenue Extension and the full LPA in comparison with the No Build Alternative. The data presented is based on a real estate assessment of the parcels within the corridor that would be located within walking distance of the station areas (defined as one-half mile). Obstacles that would hinder development, such as the presence of recently constructed buildings, residential properties, or small parcel sizes were considered as part of the analysis. These projections are based on the continuation of the positive market conditions within the corridor and predict that much of the development potential allowed in local comprehensive plans would be achieved. For many of the parcels evaluated, it is also projected that full density bonuses due to proximity to transit stations and the inclusion of housing would be allowed. For this analysis, scenario requirements assume a level of development that is projected close to build-out in some sections of the corridor. The local jurisdictions will ultimately determine the level of growth actually allowed in the future.

5.3.1 CORRIDOR DEVELOPMENT PROJECTIONS

The Dulles Corridor is one of the region's fastest growing areas and is expected to continue growing over the next 25 years. The intensity of development in the station areas could increase with the implementation of the Build Alternatives. The Build Alternatives are not, however, expected to have a significant impact on development outside the station areas where market forces would continue to be

primary factors that control the timing and quantity of development. The influence of the project on development outside of station areas is discussed in Chapter 9.

The development projections were determined based on a real estate evaluation of the study area and were developed in conjunction with Fairfax and Loudoun counties. The method for developing the projections included a parcel-by-parcel evaluation of development in the corridor. A variety of criteria were used to determine the level of development. These criteria included the size of the parcel under consideration, ownership, visibility, access to the site for vehicular and transit patronage, environmental constraints, location, and overall development characteristics of the area. Parcels containing recently constructed buildings or containing residential development were not considered as primary locations for development.

With the exception of Tysons West, parcels located within the transit station areas, as defined in the comprehensive plans for the localities, are eligible for density bonuses. Information on existing development within the transit station areas was gathered from the localities, and field verified. This data was used to verify the regional projections from the Metropolitan Washington Council of Governments (MWCOG) Round 6.3 forecasts, which include projections for growth within the corridor for four categories—retail (including hotel and institutional development), industrial, office, and residential development. No Build Alternative projections were developed using the MWCOG data and adjusted for growth that has already occurred.

The potential level of growth within the corridor was determined for the Build Alternatives by calculating the potential development associated with the proposed transit station areas. These development totals were estimated by reviewing a variety of factors that could affect development within the station areas, including the availability of vacant land for development, the need for parcel consolidation, development constraints, and the market attractiveness of the station area. The totals are possible outcomes that may or may not occur.

Table 5.3-1 shows the potential increase in corridor development by 2025 for the Wiehle Avenue Extension and the full LPA in comparison to the No Build Alternative that could occur based on the guidelines provided in the local planning documents and projected market conditions. Development is expected to increase substantially within the corridor under the No Build Alternative, but could further increase with implementation of the Build Alternatives. The Wiehle Avenue Extension would generate less development than the full LPA because it would include fewer stations.

Table 5.3-1: Potential Increase in Corridor Development by 2025 Compared to the No Build Alternative

Development Type	No Build Alternative (2025) (square feet)	Locally Preferred Alternative (percent increase)	
		Wiehle Avenue Extension (2025) ¹	Full LPA (2025) ¹
Office	75,293,100	8%	17%
Retail	27,861,300	4%	18%
Industrial	26,746,300	-1%	1%
Residential	155,397,500	5%	10%
Total	285,118,200	5%	12%

¹ Projections are based on information for 2025 only. Opening year 2011 and 2015 forecasts were not prepared due to the longer period of time required for development to take effect following the opening of the Wiehle Avenue Extension and the full LPA.

Data for the Hotel and Institutional uses are included in the Retail category. LPA estimates are based on No Build estimate plus increased development projected at station areas.

Source: MWCOG Round 6.3 Forecasts (No Build only).

The most significant increases in potential development are expected in the residential and commercial (office and retail) categories. These development projections reflect the density bonuses available in the *Fairfax County Comprehensive Plan* and the *Loudoun County Revised General Plan* based on the implementation of the Build Alternatives.

5.3.2 JOINT DEVELOPMENT OPPORTUNITIES

Joint development opportunities provide benefits to the transit patrons, transit agencies, and/or the local jurisdictions. The transit patron is benefited by additional conveniences tied to the station platform or adjacent land and improved access to surrounding land uses. The transit agency or unit of government would control joint uses on land adjacent to the station. Joint uses potentially benefit the transit agency through increased funds and ridership resulting from the increased convenience for patrons.

Within the Dulles Corridor, both Fairfax and Loudoun counties have detailed policies that direct transit-oriented development into the station areas for the corridor. In addition, WMATA has a long-standing, proven joint development program whereby higher density development is accomplished near station areas.

WMATA has been a national leader in joint development, being one of the first transit systems in the country to establish a Joint Development Program. The historical benefits of WMATA's joint development program have included increased ridership; creation of 25,000 primary jobs; generation of over \$20 million in annual property tax revenue to local jurisdictions; development of 5.6 million square feet of office space, 2.5 million square feet of retail space, almost 1,300 hotel rooms and 6,000 residential units; and a long-term revenue flow to WMATA through long-term land leases with developers.

WMATA is a partner in more than 50 public/private ventures utilizing air space over and land adjacent to Metrorail stations. The joint development sites contribute approximately \$11 million annually to Metrorail funding. WMATA's joint development projects are supported by the local jurisdictions through zoning and comprehensive planning procedures.

For the Dulles Corridor, many of the station areas already have facilities that have been proffered by private developers that would support the transit facility. These include such items as Kiss & Ride or bus drop-off facilities.

The Tysons West, Wiehle Avenue, Herndon-Monroe, and Route 772 station areas have the greatest potential for joint development. Joint development is being considered for the park-and-ride lot that would be part of the Wiehle Avenue Station that would incorporate mixed-use development, parking, and direct pedestrian access to the station. This joint development would be on county-owned land.

Additional transit facilities, including a bus drop-off and Kiss & Ride lot, could be provided on the north side of the Herndon-Monroe Station through a joint development program. This joint development would occur on what is now privately owned land that would need to be converted to town land in the future.

The Route 772 Station area has been configured to accommodate planned transit-oriented developments, Loudoun Station on the north side and Moorefield Station on the south side.

With respect to air rights development, there has been discussion, but no formal initiative or agreement to date to set policy, for the Wiehle Avenue Extension or full LPA. As developable land becomes more scarce, the value of air rights might increase, especially within areas of high density. Higher densities at

some of the station areas that may be triggered by the Build Alternatives might open up opportunities for joint development (as discussed in Section 5.3.3) including air rights development above transit stations and their facilities. As designed, the proposed stations, guideways, and other facilities do not preclude future air rights development by others. Moreover, all local land use decisions are under the control of the local government, and at this time no specific provisions are planned to address such development.