Final Draft Technical Report on Transportation in the District of Columbia

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DISTRICT DEPARTMENT OF TRANSPORTATION

DC OFFICE OF PLANNING

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1 Introduction

1.1 Background & Overview

This report has been prepared to provide background data and technical analysis in support of the 2006 District of Columbia Comprehensive Plan Revision (DC Comp Plan). The report describes current travel patterns within, into and out of District planning areas. It also projects future person-trips and traffic on major corridors using updated forecasts of households and employment and projected changes in the transportation system such as bike paths, bus ways, and street car lines.

Pierre Charles L'Enfant's 1791 Plan for the District of Columbia organized the city around a network of nodes connected by a series of grand radial avenues. These nodes, including landmarks, monuments, parks, and fountains, when overlaid with a grid of streets, formed a distinct transportation infrastructure system. The diagonal avenues and boulevards were named for US States while the orthogonal north to south streets were named numerically and the east to west streets alphabetically. The sequence of streets is determined by relative location to the US Capitol building, which serves as a point of origin, dividing the city in four quadrants (Northwest, Northeast, Southwest and Southeast). Like similar historic cities, the District was intended to be a walkable city and designed for horse and carriage by planners who did not anticipate the present day volume or flow of traffic and congestion.

In the subsequent 200 years, the District has grown to become one of the country's most densely populated cities and one of the region's largest employment centers, with more than a half million residents and nearly three quarter of a million jobs. As the nation's capital, it is also one of the most popular tourist destinations in the country. Today, the District's 1,153 miles of roadway, 229 vehicular and pedestrian bridges, approximately 7,700 intersections[1] and world-class mass transit system are regulated by District agencies as well as multi-jurisdictional regional entities[2]. The District Department of Transportation, District Public Works, Metropolitan Washington Council of Governments (MWCOG), and the Washington Metropolitan Area Transit Authority (WMATA) all have oversight on transportation infrastructure planning and policy in the District.

Yet since the inception of the L'Enfant Plan, the physical configuration of the roads and streets has changed relatively little. There is a limited opportunity to mitigate traffic density by widening streets or creating new thoroughfare routes because the District is constrained by a varied topography, natural waterways, and an extensive parks and open space system. These physical constraints, when coupled with the unique street configuration and the density brought by the daily influx of commuters and tourists, have created many challenges for transportation in the District.

As a result, over the years the District has worked with different agencies and jurisdictions to improve accessibility and transportation choices despite these limitations. In 1976, WMATA's Metrorail commenced service, supporting and eventually overtaking the existing bus system in

[1] Source: "Framework for Transportation Strategies: A Policy Paper for the DC Vision and Policy Framework"
[2] Of the 1153 miles of roadway, 61 miles are under the jurisdiction of the National Park Service and three under the Architect of the Capitol

terms of daily riders. Today, Metrorail is the second largest rail transit system and Metrobus is the fifth largest bus network in the country. The system serves a population of 3.5 million within a 1,500 square-mile area, transporting more than a third of the federal government to work and millions of tourists. Metro is an evolving transit system; the initially planned network of 83 stations and 103 miles has grown to 86 stations and 106 miles, with plans for two new lines extending to Tyson's Corner, Reston, and Dulles and connecting Glenmont and Silver Spring on the Red Line, respectively. Commuter rail organizations such as the Virginia Railway Express (VRE) and the Maryland Rail Commuter (MARC) have also developed systems to enable commuters to come to District jobs from the outer reaches of the Washington Metropolitan area.

Today more than 13 percent of District residents bicycle or walk to work, and more than 43 percent car pool or use transit to get to work[3] . Among large US cities, only New York has a higher percentage of residents who commute by public transit, and only Boston has a higher percentage that walk to work. District-employed commuters that live in the suburbs comprise more than 71 percent of District employees. Of these, approximately 39 percent drive alone, 21 percent are in carpools or vanpools, and 40 percent use transit.

Conversely, only 28.4 percent of District-based work trips originate in the city. One aspect of the Comprehensive Plan is to utilize land use policy to balance the creation of new jobs and employment in the District in order to increase this percentage. But the central goal of the Transportation element is to improve accessibility and transportation choices in the District, enhancing the quality of life for District residents and visitors by ensuring that people, goods, and information move efficiently and safely, with minimal adverse impacts on residents and the environment. This technical report briefly describes the existing transportation infrastructure systems, analyzes existing travel patterns into and out of the District, and analyzes impacts of future land use changes on these systems in an effort to support the policies and action statements put forth in the Transportation Element of the Comprehensive Plan.

1.2 The 1984 Comprehensive Plan

The existing Comprehensive Plan includes 474 goals, policies, or action statements relating to transportation that can be grouped into seven distinct areas: Mobility, Safety, Transit-Oriented Design, Mass Transit/ Multi-Modal Systems, Regional, Parking, and Public Space.

Much progress has been made in addressing transportation needs in DC since the 1984 Comprehensive Plan was prepared. WMATA, with support and direction from the District and the region, has completed the 103-mile Metrorail system and improved bus operations and routes. The District has developed traffic calming guides, design manuals, street lighting guidelines, and the Bicycle Master Plan. Many of the ward-specific transportation goals or strategies from the 1984 Comprehensive Plan have been adopted and implemented. DDOT and WMATA recently completed the District of Columbia Transit Improvement Alternatives Analysis. DDOT has also increased its focus on efforts to improve pedestrian safety in the District. Programs are underway to increase Metrorail system capacity through eight-car trains, and to increase street-level transit capacity through streetcar services, exclusive bus lanes, and rapid bus services on designated corridors. With these new initiatives underway, paired with innovative transportation demand

[3] Except where noted, work statistics are based on the 2000 Census.

management programs, the prospective District transportation policies can focus more explicitly on multi-modal connectivity and integrated transportation systems.

1.3 Literature Review

The Louis Berger Group, consultants on this assignment, gathered various documents, plans, and guidelines from the District Department of Transportation (DDOT), Office of Planning (OP), Washington Metropolitan Area Transit Authority (WMATA), and Metropolitan Washington Council of Governments (MWCOG).[1] The table below shows the documents assembled.

Table 1.1 DC Area Documents and Studies

Report Titles	Owner Agency	Year	Report/ Hard Copy
1984 Comprehensive Plan: Transportation Element	OP	1984/2002	X
Scenic Byways Plan: Canal Road	OP	2002	X
Scenic Byways Plan: Pennsylvania Avenue	OP	2002	X
Draft Anacostia Waterfront Architecture Design Standards	DDOT	2005	X
Streetlight Policy and Design Guidelines	DDOT	2005	X
Baltimore-Washington Maglev Project	Federal Railroad Administration/ Maryland Transit Administration	2003	X
Motor Carrier Management and Threat Assessment Study	DDOT	2004	X
District of Columbia 2030 Transportation Vision Plan Action Plan	DDOT	2006	X
District of Columbia Transit Improvements Alternatives Analysis Need Assessment	DDOT/ WMATA	2004	X
DC Transit Development Study	DDOT/ WMATA	2002	X
Tour Bus Management Initiative	DDOT	2003	X
Traffic Calming Policies and Guidelines	DDOT	2002	X
Great Street Initiative	DDOT	2005	X
Capital Improvement Program (FY2005-FY2010)	DDOT	2004	X
2003 Financially Constrained Long Range Plan (CLRP)	MWCOG	2004	X
DDOT TIP (FY2004-FY2009)	DDOT	2003	X
Mayor's Parking Task Force Report	DDOT	2003	X
Pedestrian Safety and Accessibility Study	DDOT	2004	X
DDOT Design Manual	DDOT	NA	X
DC Bicycle Master Plan	DDOT	2005	X
1997 Strategic Transportation Plan for DC	DDOT	1997	X
Central Washington Congestion Task Force	DDOT	2004	X
"Framework for Transportation Strategies": A Policy Paper for the DC Vision and Policy Framework	OP	2003	X
2002 Passenger Survey Final Report	WMATA	2002	X
Pedestrian Safety and Accessibility Study	DDOT	2005	X
Comprehensive Plan for National Capital: Transportation Element	National Capital Planning Commission	2004	X
Regional Bus Study	WMATA	2003	X
A Vision for Growing An Inclusive City	OP	2004	X

[1] Berger reviewed the DDOT 2030 Transportation Vision Plan – Action Plan, Appendix B: Transportation Planning Studies in the District of Columbia, as an overview of recent section or corridor planning studies conducted in the District, and has referred to the full planning studies only when necessary to gather more detailed information.

Report Titles	Owner Agency	Year	Report/ Hard Copy
Comprehensive Plan Policy Audit	OP	2005	X
Metropolitan Washington Regional Activity Centers: A Tool for Linking Land Use and Transportation Planning	MWCOG	2002	X
2004 State of the Commute Survey Results from the Washington Metropolitan Region	MWCOG	2005	X
Draft DDOT Transportation Vision Plan with Appendices	DDOT	2005	X
District of Columbia Transit Improvements Alternatives Analysis – Draft Final Report	DDOT and WMATA	9/2005	X

Berger also reviewed pertinent documents from other agencies and research to provide additional insight on potential policy considerations and their likely impacts. These sources are summarized in Table 1.2.

Table 1.2 Other Sources

Report Title	Owner Agency	Year	Format
Various online documents (http://www.vtpi.org/)	Victoria Transport Policy Institute	2005	online
A Review of Pedestrian Safety research in the United States and Abroad	Federal Highway Administration	2004	report
TCRP Report 95 -Parking Management and Supply: Traveler Response to Transportation System Changes	Transportation Research Board	2003	report
Creating Livable Streets	METRO (Portland, Oregon)	2002	report
The Sustainable Transport Plan for the ACT	Australian Capital Territory Planning and Land Authority	2004	online report
A Guidance Manual for Implementing Effective Employer-based Travel Demand Management Programs", Final Report	Federal Highway Administration and Federal Transit Administration	1993	report
A Toolbox for Alleviating Congestion and Enhancing Mobility	Institute of Transportation Engineers	1998	report
Implementing Effective Travel Demand Management Measures: Inventory of Measures and Synthesis of Experience	Federal Highway Administration and Federal Transit Administration	1993	Report

1.3.1 Summary Findings of Literature Review to Identify Data Gaps

The majority of the baseline transportation data for the District and the region is provided by the Draft Transportation Vision Plan with Appendices, the Draft Transit Improvements Alternatives Analysis, and the MWCOG Long Range Plan. Many of the DDOT studies provided extensive neighborhood and corridor level transportation analysis, while the Mayor's Task Force Committees was used to gain community insight to transportation planning in the District with detailed discussions and recommendations on parking and congestion management.

1.4 Data Gaps Identified

Work Travel Patterns Within DC and to and from Outlying Jurisdictions
In order to develop effective policies promoting connectivity and transportation system integration, it is essential to understand movement within and around DC. While multiple publications summarize movements between DC and the surrounding region, movement within DC by different modes has not been well documented. Moreover, more and more DC workers are reverse-commuting from DC to jobs in the surrounding region. In order to examine transportation movements, Berger conducted desire line analyses (e.g., comparing trip volumes between different areas by means of lines, with line widths demonstrating volumes) to illustrate work trip movements between different areas in the District as well as work trip movements to and from DC and the surrounding region. The following section explains the approaches to the analyses.

Future Travel Based on Growth in Households and Employment including Policy Impact Analysis
Berger conducted a traffic analysis of proposed population and employment forecasts. This is accompanied by an analysis of the impact of proposed travel demand strategies and policies that promote transit, pedestrian and bicycle use behaviors. The analysis was conducted based on major corridors defined and revised by DDOT. The analysis approach is explained at the beginning of Section 3, Land Use Analysis, with a detailed description of the methodology in Appendix A.

2 Desire line Analysis

The main purpose for conducting the desire line analysis is to understand the volume and pattern of work-related travel between different areas in the District, work-related movement from DC to the surrounding region, and commuting patterns from the surrounding region into DC, based on the 2000 census. Travel patterns include a mix of travel modes. The relationship between work and non-work volumes and patterns is also addressed.

2.1 Methodology

2.1.1 Inputs

There are six major input data sources for the desire line analysis.

(1) Census Transportation Planning Package 2000 (CTPP)
(2) MWCOG TAZ equivalency table (showing which traffic zones are in which census tracts)
(3) Planning Area map from DC OP. Planning areas have been defined by the Office of Planning for the DC Comp Plan
(4) Neighborhood clusters from DC OP. Detailed tables with trip patterns between the 39 clusters are provided in Appendix B
(5) 12 external employment areas outside DC selected and aggregated from the 58 MWCOG-defined Regional Activity Centers, used to identify the destinations of work trips from DC
(6) Selected counties outside DC, used to identify the origins for work trips into DC

Census Transportation Planning Package 2000 (CTPP) and MWCOG TAZ Equivalency Table

The Census Transportation Planning Package (CTPP) is a set of special tabulations from the answers to the Census 2000 long form questionnaire, which was mailed to one in six U.S. households. One of the key components of the CTPP is the trip flow data between home and work. CTPP provides data at various geographic levels, with the smallest being transportation analysis zones. CTPP data was used to conduct the desire line analysis for work-related travel between different areas in the District as well as work-related movements from DC to the surrounding region.

MWCOG provided the equivalency table comparing the 2000 Census CTPP Zones to the MWCOG Transportation Analysis Zones (TAZs).

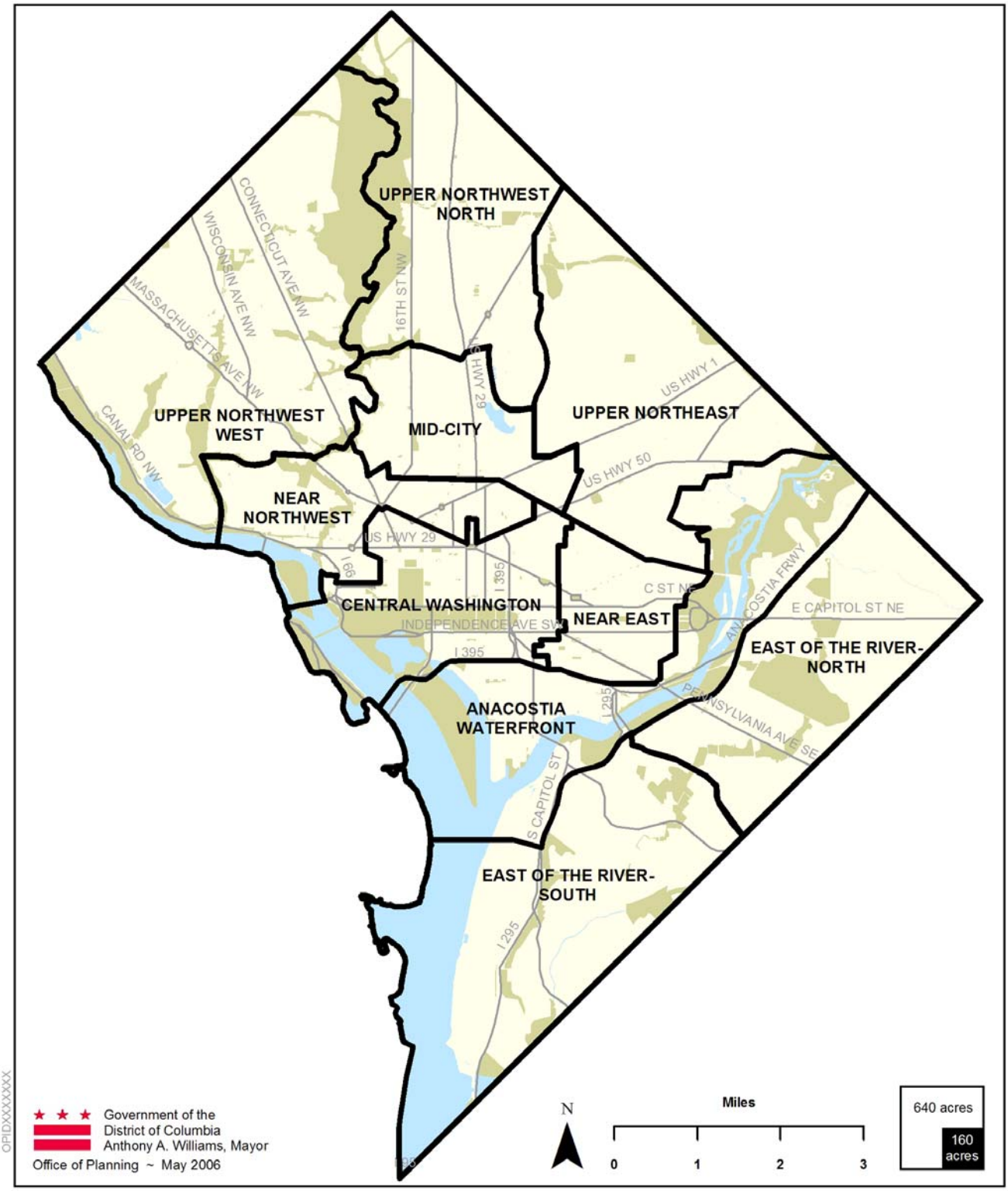
DC Planning Areas

A total of 10 DC Planning Areas were defined by the Office of Planning for the District of Columbia Comprehensive Plan. (The analysis between areas will refer to the following letters and names.) See Figure 2.1 for the map of the Planning Areas.

Table 2.1 Planning Area Summary Descriptions and Codes

Planning Area Code	Planning Area Description
A	Upper Northwest North
B	Upper Northwest West
C	Mid-City
D	Upper Northeast
E	Near Northwest
F	Central Washington
G	Capitol Hill
H	Anacostia Waterfront
I	East Washington
J	Anacostia/ Upper Southeast

Figure 2.1 Map of Planning Areas



Selected External Employment Areas Outside DC

Twelve employment areas outside DC were selected and aggregated from the 58 MWCOG-defined Regional Activity Centers (RACs). MWCOG has identified clusters of RACs; the current analysis adheres to those clusters with a few exceptions as noted in Appendix C, grouping some clusters together to provide a reasonable span for analysis. Figure 2.2 illustrates the selected Regional Activity Centers.

Table 2.2 summarizes the descriptions and coding. The full descriptions for each RAC and the cross reference with MWCOG RACs and RAC clusters are found in Appendix C.

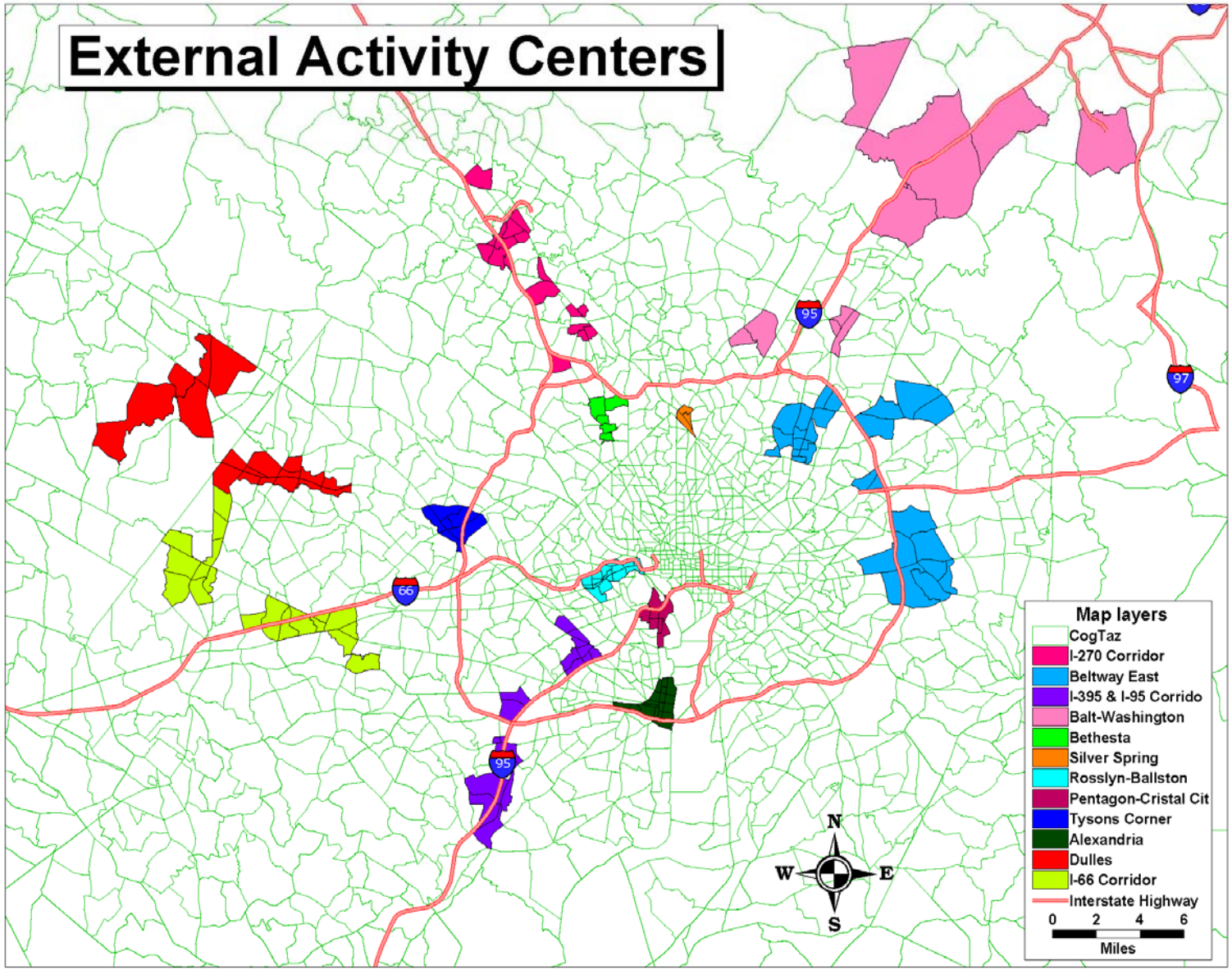
The output is 10 maps – from each planning area into the RACs – organized by Planning Area of origin. Travel to RACs from DC is paired with travel within DC by Planning Area of origin in a single figure for each DC Planning Area.

The code numbers shown below are displayed on the desire line analysis graphs at the end of each line, while the volume numbers are displayed adjacent to each line. The width of the line, consistent with the scale shown on each graph, illustrates the relative volume of travel to each RAC.

Table 2.2 Regional Activity Center Descriptions and Codes

Regional Activity Center	Activity Center Code
Alexandria	51
Baltimore-Washington	52
Beltway East	53
Bethesda	54
Dulles	55
I-270 Corridor	56
I-395 & I-95 Corridor	57
I-66 Corridor	58
Pentagon	59
Rosslyn	60
Silver Spring	61
Tysons	62

Figure 2.2 Regional Activity Centers



Selected Counties Outside DC

The selected counties from outside DC represent approximately 87 percent of all commuters into DC (from outside the District). An additional 11 percent come from other counties in Maryland and Virginia, with approximately 1.5 percent from other states such as West Virginia and Pennsylvania. The counties selected for analysis of work trips from outside DC to the 10 Planning Areas in DC are as follows: Virginia: Arlington County, Fairfax County, Loudoun County, Prince William County, City of Fairfax, City of Falls Church, and Alexandria. Maryland: Prince George's County, Montgomery County, Frederick County, Howard County, and Anne Arundel County. The output is 10 maps- from all external Planning Areas into each DC Planning Area – organized by Planning Area of destination.

2.1.1 Procedure

Assumptions

Year 2000 Census work travel patterns are consistent with current patterns. Based on the "2004 State of the Commute (SOC) Survey Results for the Metropolitan Washington Region", Comparison of Key 2004 SOC Results to 2001 SOC Results (page 72), the mode split (all modes) is virtually unchanged in these four years, and is therefore likely to be the same as the Year 2000 Census. Mode split is anticipated to shift to greater transit use in the future based on planned improvements and the increase in highway congestion.

MWCOG has recently developed CTPP adjustment factors to reflect findings that the CTPP misses some trips. The purpose of these adjustment factors is to convert CTPP place of residence by place of work worker tabulations into "equivalent" average weekday Home-Based Work (HBW) trips. These adjustment factors are primarily based on the 1994 COG/TPB Household Travel Survey. Data from the 2001 National Household Travel Survey (NHTS) for large metropolitan regions with rail transit were also used to estimate "Usual Mode to Travel Day" adjustment factors.

These draft CTPP Adjustment factors were under review and discussion by the Travel Forecasting Subcommittee during the development of the report. An MWCOG analysis of the application of these factors to the CTPP data currently shows that they would result in an underestimate of daily HBW transit compared to WMATA transit ridership statistics and on-board bus and rail passenger surveys. There is also some indication that the 2000 Census may have underestimated the number of workers who work in the District of Columbia.[2]

These adjustment factors were not be approved and released in time for the desire line analysis. The desire line volumes and tables are representative of the patterns and relative volume of travel among the planning areas, regional activity centers and neighborhood centers in the region. However, the actual volumes are expected to be somewhat higher than the volumes reported in the desire line analysis, based on the most recent MWCOG analysis. Potential adjustments include factors for absenteeism, usual mode to travel, multiple home based work trips, trip chains to work and trip chains from work (referring to intermediate stops made on the way to or from work).

[2] Robert Griffiths of MWCOG provided initial information, comment and analysis on the adjustment factors.

The CTPP transportation analysis zones (TAZs) were aggregated into the 10 planning areas within DC. Specific CTPP TAZs outside DC pertaining to specified Regional Activity Centers were aggregated to create 12 activity center zones outside DC. TransCAD is the computer platform used for the analysis.

Limitations of the Analysis

The Desire Line Analysis, based on the Census Transportation Planning Package, provides detailed travel information at a very fine scale, but does have some limitations. It is developed from Census data, and therefore represents travel patterns from the year 2000. It is developed from the detailed census questionnaire that is distributed to one in six households, so it is a sample rather than a full count, although it is a very extensive sample. It collects data on work trips, not on leisure, shopping, school or other trips, and thus represents perhaps one-fourth of total daily trips. The survey questionnaire asks for information on "usual trips" and must be adjusted as discussed above. Information is aggregated to the Transportation Analysis Zone (TAZ) level to preserve confidentiality of respondents.

Despite the limitations, it provides a wealth of information on work trip origins, destinations, mode of travel, and travel time, and is a valuable tool for identifying local and regional travel patterns.

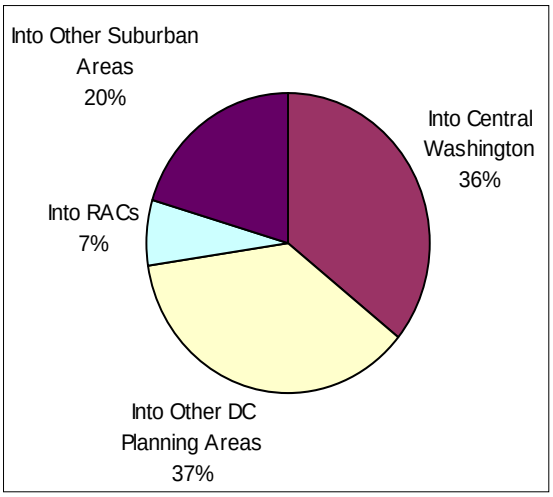
2.2 Analysis Results: Work Trips

This section provides an overview of work trip patterns. It is followed in Section 2.3 by a detailed analysis of each D.C. Planning Area, including maps depicting each area's trip flow volume to and from other areas within and outside DC. The overview of work trip patterns first examines trips outbound from each D.C. Planning Area (whether they remain within the area, travel to another DC area, or leave the District), then looks at work trips coming into each area of the District, and finally examines "how they get there", modes of travel within, out of and into each D.C. Planning Area. The detailed planning area analysis in Section 2.3 follows the same organization.

2.1.1 Overall Trip Patterns

The majority of work trips originating in DC stay within DC, as shown in Figure 2.3. The volume of trips into Central Washington (D.C. Planning Area F) is almost equal to the volume of trips to all other Planning Areas within the District.

Figure 2.3 Destination of Work Trips Originating in the District of Columbia



Overall, approximately 27 percent of DC workers leave the District to work in areas outside the District. The number and percent of "reverse commute" workers varies by D.C. Planning Area, as summarized in Table 2.3. Near Northwest has the smallest percentage of workers leaving the District, while Central Washington has the smallest number leaving the District. East Washington has the highest percentage of workers leaving the District, while Upper Northwest West, with the largest number of work trips of any D.C. Planning Area, has the highest volume of workers leaving DC.

Table 2.3 Work Trip Volumes and Percentages Originating in Each D.C. Planning Area With Destinations That Are Within Versus Outside DC

	Daily Work Trip Volume			Percent	
	Within DC	Outside DC	Total	Within DC	Outside DC
Upper NW N	19,617	9,383	29,000	68%	32%
Upper NW W	34,621	12,207	46,828	74%	26%
Mid-City	29,705	10,406	40,111	74%	26%
Upper NE	14,637	6,449	21,086	69%	31%
Near NW	30,392	8,549	38,941	78%	22%
Central DC	5,332	1,686	7,018	76%	24%
Capitol Hill	14,955	5,885	20,840	72%	28%
Anacostia Wf	8,713	3,636	12,349	71%	29%
East DC	9,970	6,217	16,187	62%	38%
Anac Upper SE	16,525	5,902	22,427	74%	26%
Total	184,467	70,319	254,786	72%	28%

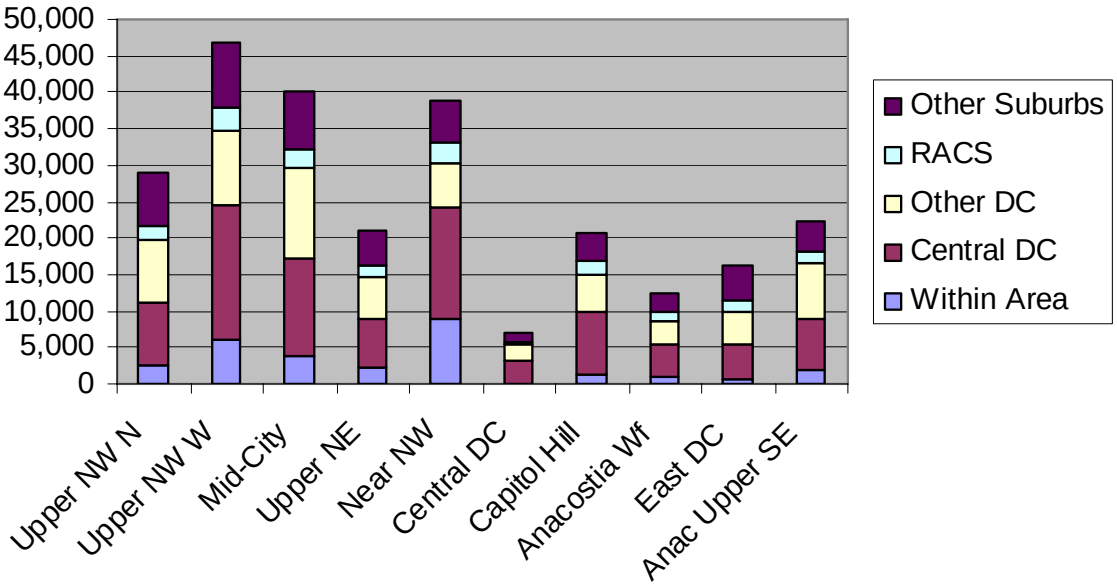
Table 2.4 and Figure 2.4 provide additional detail as to the destinations of trips leaving each D.C. Planning Area. Near Northwest has the highest volume and percentage of trips staying within the area. This is an important measure from the perspectives of increasing walk and bike trips, to create healthier lifestyles and improve sustainability of the system. Upper Northwest West has the highest volume of workers going into Central Washington, followed by Near Northwest.

Table 2.4 Work Trip Destinations From Each Planning Area for DCResidents

	TO:					
FROM:	Within Area	Central DC	Other DC	RACs	Other Suburbs	Total
Upper NW N	2,475	8,609	8,533	2,153	7,230	29,000
Upper NW W	6,049	18,452	10,120	3,268	8,939	46,828
Mid-City	3,844	13,422	12,439	2,563	7,843	40,111
Upper NE	2,200	6,661	5,776	1,521	4,928	21,086
Near NW	8,840	15,443	6,109	2,688	5,861	38,941
Central DC		3,295	2,037	471	1,215	7,018
Capitol Hill	1,272	8,623	5,060	1,983	3,902	20,840
Anacostia Wf	905	4,564	3,244	1,118	2,518	12,349
East DC	595	4,905	4,470	1,409	4,808	16,187
Anac Upper SE	1,902	7,052	7,571	1,487	4,414	22,427
Total	28,082	91,026	65,359	18,661	51,657	254,786

Note: Central DC trips can be included in either column “Within Area” or “Central DC.”

Figure 2.4 Daily Work Trip Volumes and Destinations from Each D.C. Planning Area



Work Trips Into DC

Work trips that both originate and terminate in the District represent just over one-fourth of the total work trips coming into the District from all jurisdictions. Figure 2.5 provides an overall summary of all work trips with destinations in the District of Columbia. Nearby Maryland counties (including Montgomery, Prince George's, Anne Arundel, Howard and Frederick) are the source for approximately 37 percent of daily work trips into DC. Nearby Virginia counties and cities (Arlington County, Fairfax County, Loudoun County, Prince William County, City of Fairfax, City of Falls Church, and Alexandria) are the source for almost as many trips as DC itself (26 percent). The remaining 10 percent come from farther distances in Virginia, Maryland, West Virginia and Pennsylvania.

Figure 2.5 Origin of Work Trips with Destinations in the District of Columbia

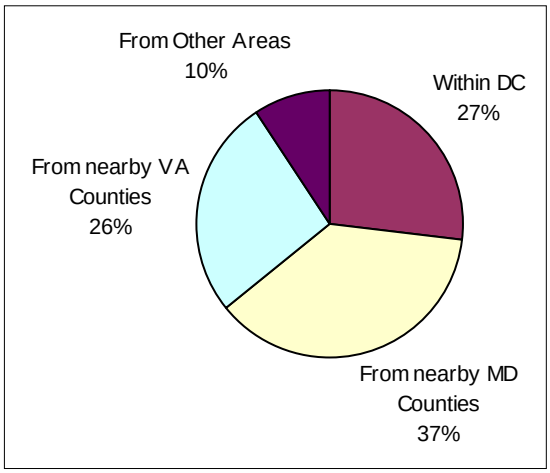


Figure 2.6 and Table 2.5 provide details by D.C. Planning Area as well as origin for the trips inbound to each area of DC. Figure 2.7 provides the same information as Figure 2.6, eliminating the Central Washington (D.C. Planning Area F) trips to provide a better idea of scale for other areas.

Table 2.5 Daily Work Trips Within and Into Each D.C. Planning Area by Trip Origin

	FROM					
INBOUND TO:	Within Area	Other DC	Nearby MD	Nearby VA	Other Suburbs	Total
Upper NW N	2,475	5,018	13,790	2,743	2,349	26,375
Upper NW W	6,049	9,694	19,535	8,383	2,983	46,644
Mid-City	3,844	6,090	18,116	2,714	1,630	32,393
Upper NE	2,200	6,262	13,409	3,252	2,686	27,809
Near NW	8,840	24,759	11,855	33,759	7,743	86,956
Central DC	3,295	87,731	151,395	113,013	38,493	393,927
Capitol Hill	1,272	3,336	5,913	2,621	2,042	15,184
Anacostia Wf	905	6,331	10,815	9,975	4,889	32,915
East DC	595	1,244	1,914	306	325	4,384
Anac Upper SE	1,902	2,625	6,447	2,230	1,671	14,875
Total	31,377	153,090	253,189	178,997	64,810	681,463

Figure 2.6 Daily Work Trip Volumes by Trip Origin Coming Into Each D.C. Planning Area

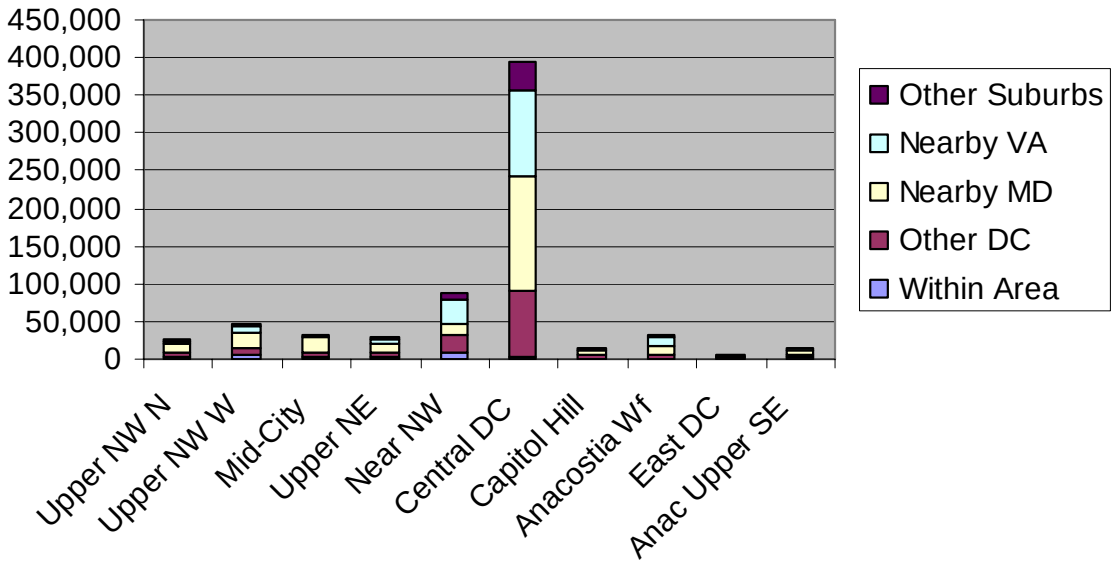
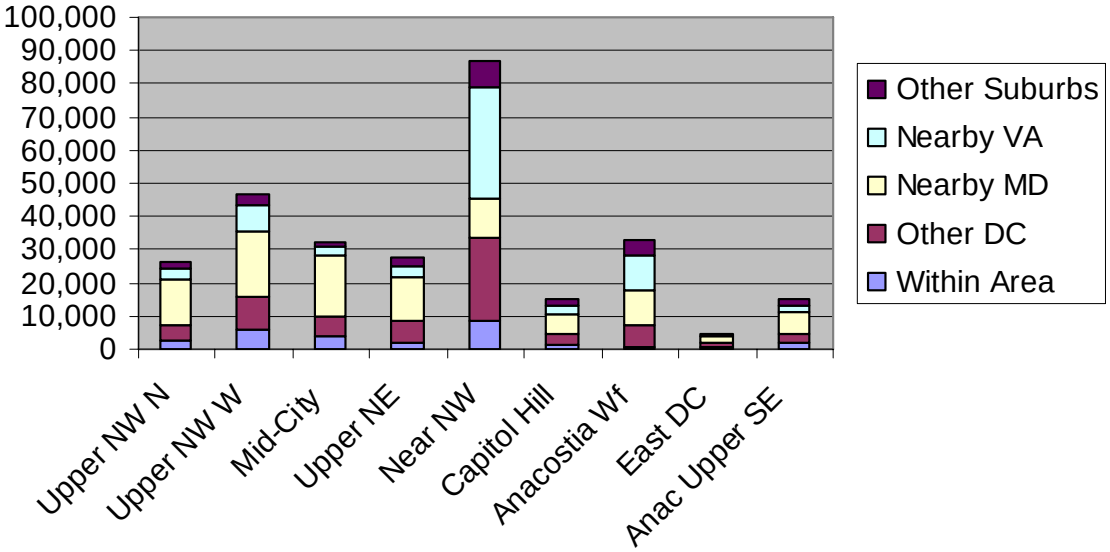


Figure 2.7 Daily Work Trip Volumes by Trip Origin Coming into Each D.C. Planning Area, Central DC Not Shown



Balance of Work Trip Origins and Destinations in D.C. Planning Areas

Among the objectives for the DC Comp Plan are increasing opportunities to live near one's work and to decrease commute time and cost and improve the quality of life. One means to achieve land use balance is to better distribute housing and employment opportunities throughout the city. Current patterns of work trips help identify D.C. Planning Areas where this is already occurring.

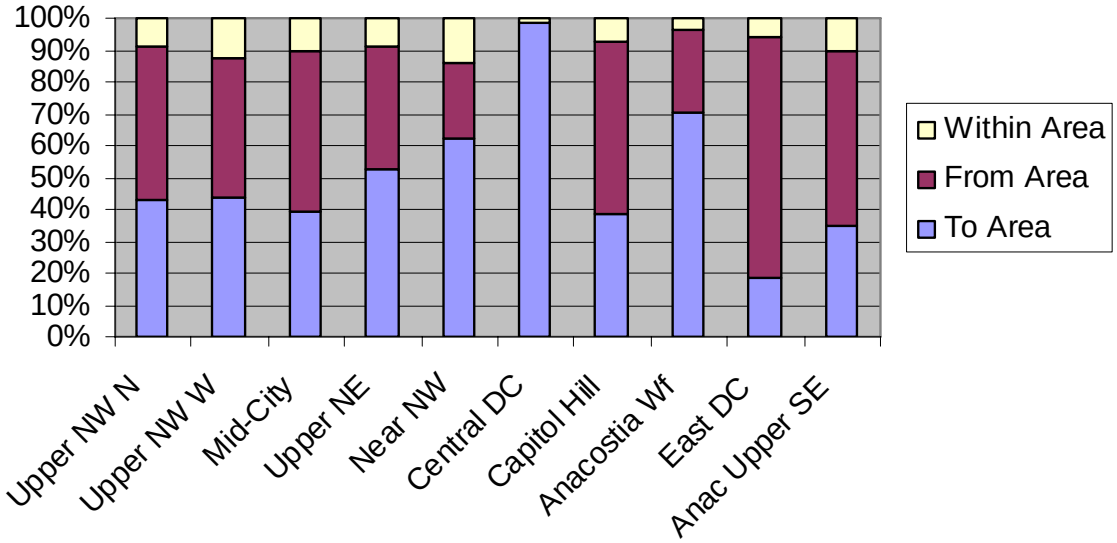
Table 2.6 compares the D.C. Planning Areas in terms of being a destination zone for work trips (column 2), an origin zone for work trips (column 3), or both (residence and work destination within a single area, column 4). In planning these are known as external-internal, internal external, and internal-internal trips. Columns 6, 7, and 8 in Table 2.6 are the percentages for each D.C. Planning Area. For this analysis, the sum was taken for total trips into and out of the area, including doubling trips within the area (reflecting inbound and outbound trips), then dividing by the sum to obtain the percentages.

As expected, Central Washington has the highest proportion of work trip attractions and the greatest imbalance between employment and residences. Anacostia Waterfront, Near Northwest, and Upper Northeast, like Central Washington, show more trips coming into the area for work than leaving, which suggests high levels of employment opportunities. Near Northwest and Upper Northwest West have the highest proportions of work trip origins and destinations within the area, suggesting the opportunity to walk or bike to work. East Washington has the lowest proportion of work trip destinations compared to work trip origins. Figure 2.8 presents the percentage information in graphic format.

Table 2.6 Work Trip Volumes and Percentages Arriving From Outside, Leaving From, and Starting and Ending in the D.C. Planning Areas

Planning Area	Work Trips				Percentage		
	Arriving from the Outside	Leaving Planning Area	Starting and Ending in Planning Area	Sum	Arriving from the Outside	Leaving Planning Area	Starting and Ending in Planning Area
Upper NW N	23,900	26,525	4,950	55,375	43%	48%	9%
Upper NW W	40,595	40,779	12,098	93,473	43%	44%	13%
Mid-City	28,549	36,267	7,688	72,504	39%	50%	11%
Upper NE	25,609	18,886	4,400	48,895	52%	39%	9%
Near NW	78,116	30,101	17,680	125,897	62%	24%	14%
Central DC	390,632	428	6,590	397,650	98%	0%	2%
Capitol Hill	13,912	19,568	2,544	36,024	39%	54%	7%
Anacostia Wf	32,010	11,444	1,810	45,265	71%	25%	4%
East DC	3,789	15,592	1,190	20,571	18%	76%	6%
Anac Upper SE	12,973	20,525	3,804	37,301	35%	55%	10%

Figure 2.8 Work Trips Arriving From Outside, Leaving From, and Starting and Ending in the D.C. Planning Areas

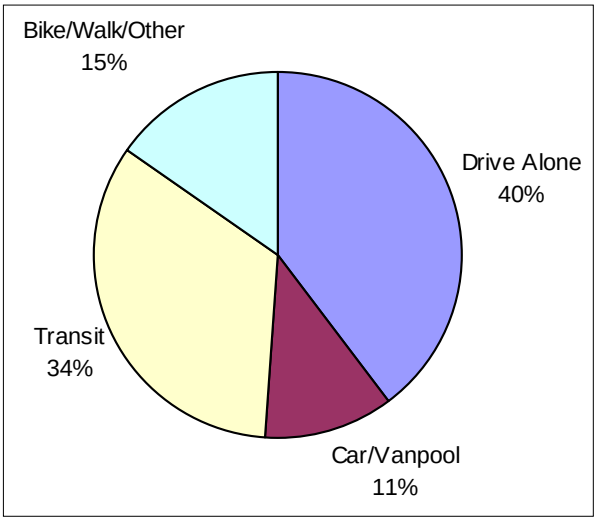


Note: Percent calculated based on total work trips for each D.C. Planning Area.

How They Get There

The District of Columbia and other governments in the region have invested heavily in transit and ridesharing programs, as well as increasing the connections and safety amenities for walking and bicycling, for all trip purposes. The Transportation Vision Plan and DC Comp Plan anticipate increasing investments in transit, pedestrian and bicycle infrastructure and operations, to continue to encourage modes other than the single-occupant vehicle. It is necessary to begin with a good foundation on how people are currently traveling, outbound from D.C. Planning Areas and inbound to D.C. Planning Areas, in order to judge the success and effectiveness of future investments.

Figure 2.9 Mode for Work Trips Originating in the District of Columbia



Outbound Trips by Mode

Figure 2.9 summarizes all work trips originating in DC, including those staying within a D.C. Planning Area, going to other areas of the District, and leaving the District. Sixty percent do not use single occupancy vehicles. Fifteen percent use bike, walk or other (other includes taxi and motorcycle) modes to travel to work.

The proportion using each mode varies widely between D.C. Planning Areas.

Tables 2.7 and 2.8 and Figure 2.10 summarize the primary means of getting to work for trips originating from each D.C. Planning Area.

- Upper Northwest North, Upper Northeast and Upper Northwest West have the highest proportions of single occupancy drivers, however, it is significant that even these areas are at or below 50 percent for drive alone.
- Mid-City, Anacostia Waterfront, East Washington, and Anacostia/ Upper Southeast, all have between 50 percent and 53 percent of workers using transit or carpool/ vanpool.
- Over 40 percent of Near Northwest workers use alternate means of transport to work, that is, primarily bicycle and walk with some taxi and other means. These findings for “other” means to get to work are consistent with the high proportions of persons who both work and reside within this area, or commute to adjacent Central Washington.

Table 2.7 Means of Getting to Work by Mode for D.C. Planning Area Residents – Volume

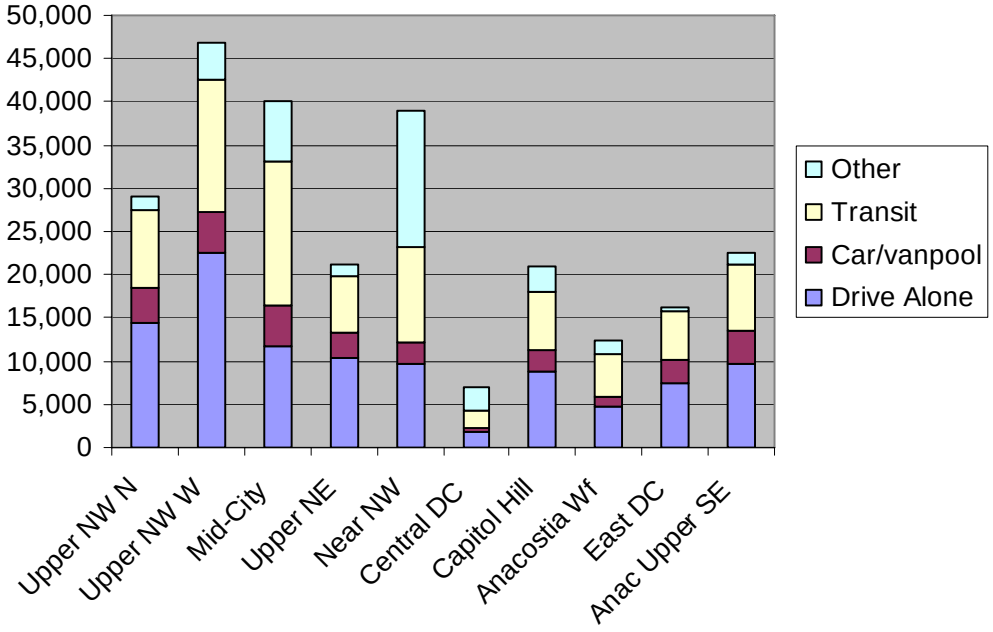
	Drive Alone	Car/vanpool	Transit	Other	Total
Upper NW N	14,408	4,093	8,944	1,555	29,000
Upper NW W	22,499	4,665	15,430	4,234	46,828
Mid-City	11,815	4,574	16,819	6,903	40,111
Upper NE	10,392	2,894	6,472	1,328	21,086
Near NW	9,750	2,461	10,887	15,843	38,941
Central DC	1,756	434	2,151	2,677	7,018
Capitol Hill	8,838	2,375	6,699	2,928	20,840
Anacostia Wf	4,639	1,181	5,094	1,435	12,349
East DC	7,420	2,614	5,698	455	16,187
Anac Upper SE	9,784	3,630	7,673	1,340	22,427
Total	101,300	28,921	85,867	38,698	254,786

Table 2.8 Means of Getting to Work by Mode for D.C. Planning Area Residents – Percentage

	Drive Alone	Car/vanpool	Transit	Other	Total
Upper NW N	50%	14%	31%	5%	100%
Upper NW W	48%	10%	33%	9%	100%
Mid-City	29%	11%	42%	17%	100%
Upper NE	49%	14%	31%	6%	100%
Near NW	25%	6%	28%	41%	100%
Central DC	25%	6%	31%	38%	100%
Capitol Hill	42%	11%	32%	14%	100%
Anacostia Wf	38%	10%	41%	12%	100%
East DC	46%	16%	35%	3%	100%
Anac Upper SE	44%	16%	34%	6%	100%
Total	40%	11%	34%	15%	100%

Note: Percentages may not add to 100 percent due to rounding

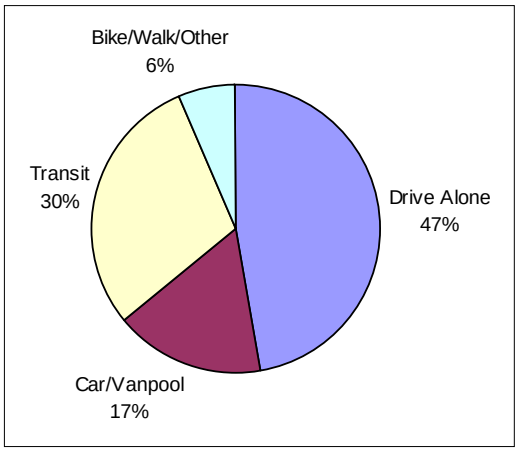
Figure 2.10 Daily Work Trip Volumes by Mode for D.C. Planning Area Residents



Inbound Trips by Mode

The District of Columbia is the major employment center for the region, and as discussed above, work trips from the surrounding suburbs far exceed the volume of work trips by DC residents, either within DC or in reverse commuting to the suburbs. Figure 2.11 summarizes the mode of travel for all work trips with a destination in the DC Planning Areas. The drive alone percentage is below 50 percent, but the region is committed to decreasing this figure even more, by providing additional transportation choices and improving the alternatives that are currently available.

Figure 2.11 Mode of Work Trips With a Destination In the District



The volumes of travel into the various D.C. Planning Areas vary widely, as discussed above. As expected, the proportions of workers using the various modes of transportation also vary widely among the D.C. Planning Areas, based on the availability and convenience of transit (bus, rail, and commuter rail) between residences and workplaces, the concentration of jobs and availability of incentives for carpools and vanpools, the safety and accessibility of walk and bike options, the amount of roadway congestion, and the availability and pricing of parking. Table 2.9 and Figure 2.12 summarize the mode split for work travel volumes into each D.C. Planning Area. Table 2.10 and Figure 2.13 illustrate the same information in percentages by D.C. Planning Area.

Central Washington is the predominant employment center, accounting for approximately 58 percent of work trips into the District. It is therefore highly significant that Central Washington's single occupancy vehicle (SOV) rate of 40 percent is the lowest of any D.C. Planning Area in the City, for incoming trips. This is primarily achieved through high transit utilization at 38 percent, the highest in the city, and high carpool/van pool utilization at 18 percent. Near Northwest's SOV rate is also lower than the average, at 46 percent, achieved through the second highest transit utilization rate of 28 percent, high van/car pool utilization at 14 percent, and the highest "other" mode utilization in the city, at 13 percent. Together, Central Washington and Near Northwest, with most of the credit to Central Washington, are able to elevate the overall transit utilization rates and offset incoming SOV rates exceeding 60 percent in six other Planning Areas in the District.

Table 2.9 Means of Getting to Work by Mode Into Each D.C. Planning Area

	Drive Alone	Car/vanpool	Transit	Other	Total
Upper NW N	18,067	3,879	3,105	1,324	26,375
Upper NW W	29,641	6,245	7,299	3,459	46,644
Mid-City	18,107	4,489	6,369	3,429	32,393
Upper NE	17,634	4,552	3,771	1,852	27,809
Near NW	40,084	12,014	23,614	11,244	86,956
Central DC	156,807	70,425	147,822	18,873	393,927
Capitol Hill	7,847	2,695	3,776	866	15,184
Anacostia Wf	20,409	6,339	4,589	1,579	32,915
East DC	2,711	774	538	361	4,384
Anac Upper SE	10,419	2,268	1,179	1,009	14,875
Total	321,725	113,680	202,062	43,996	681,463

Figure 2.12 Daily Trip Volumes by Mode Into Each D.C. Planning Area

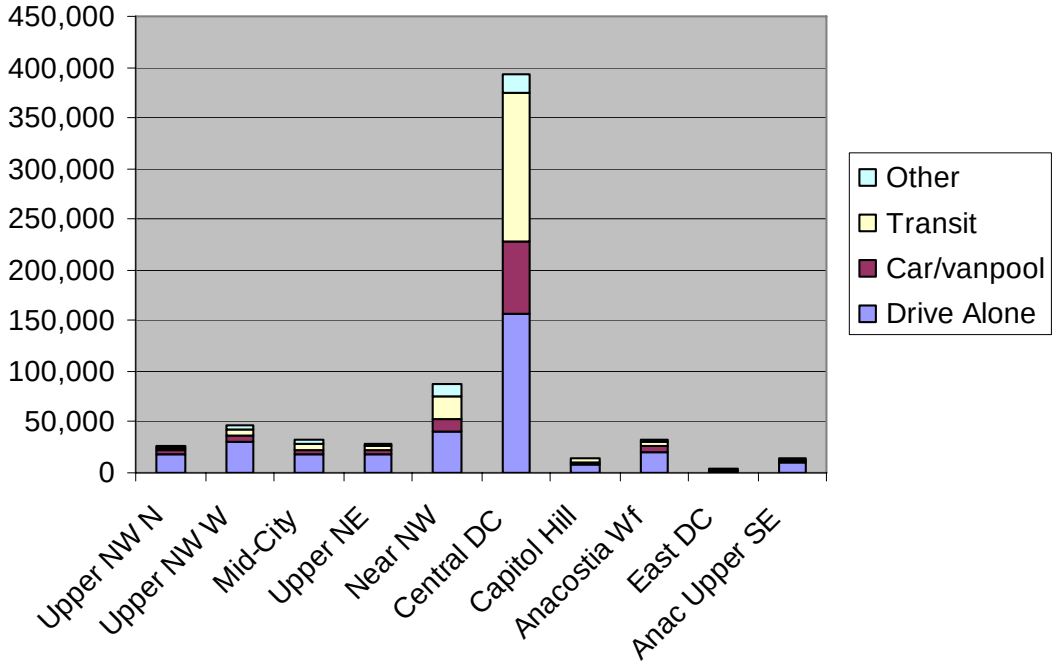
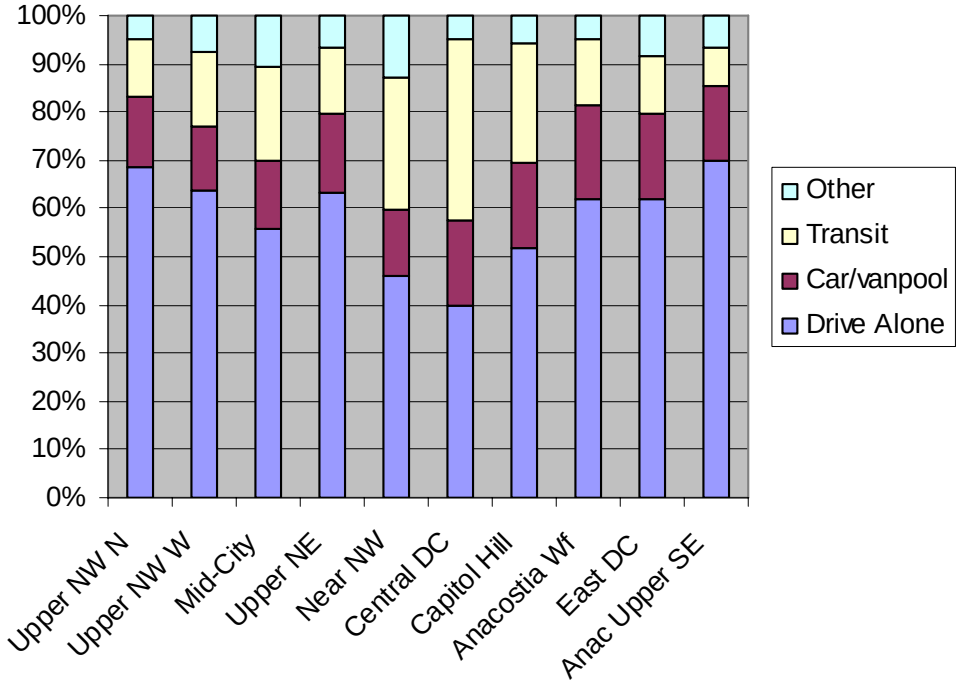


Table 2.10 Means of Getting to Work by Mode Into Each D.C. Planning Area- Percent

	Drive Alone	Car/vanpool	Transit	Other	Total
Upper NW N	69%	15%	12%	5%	100%
Upper NW W	64%	13%	16%	7%	100%
Mid-City	56%	14%	20%	11%	100%
Upper NE	63%	16%	14%	7%	100%
Near NW	46%	14%	27%	13%	100%
Central DC	40%	18%	38%	5%	100%
Capitol Hill	52%	18%	25%	6%	100%
Anacostia Wf	62%	19%	14%	5%	100%
East DC	62%	18%	12%	8%	100%
Anac Upper SE	70%	15%	8%	7%	100%
Total	47%	17%	30%	6%	100%

Note: Percentages may not add to 100 percent due to rounding

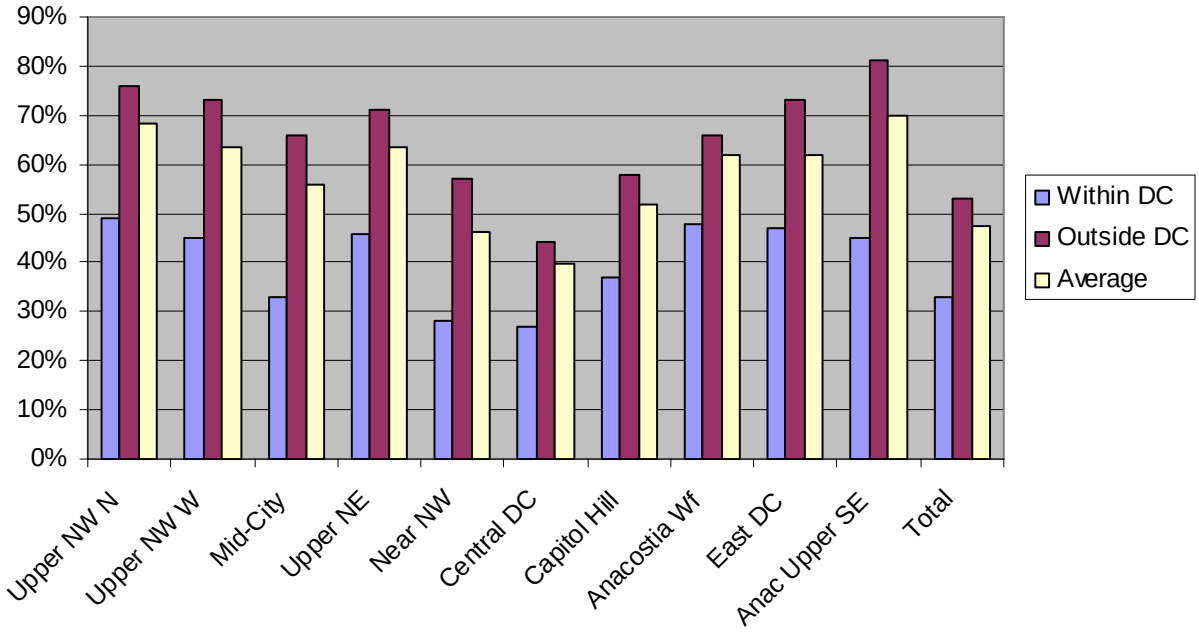
Figure 2.13 Percentage Distribution by Mode into Each D.C. Planning Area



Capitol Hill and Mid-City share certain characteristics with Near Northwest and Central Washington that will be referred to as "core characteristics." Key among the characteristics are high levels of transit service, including many choices of buses and Metro lines and stations. Offering these choices and convenience for riders is rewarded by high transit use by workers from outside the District as well as within the District, (20 percent or greater) and results in a lower single-occupant vehicle (SOV) rate (less than 40 percent for DC residents and less than 60 percent overall). Figure 2.14 compares the SOV rate for work trips inbound into each D.C. Planning Area, contrasting the rate for trips from within the District to the rate for trips from outside the District. While in all cases the SOV rate for District residents is significantly lower than the rate for workers coming in from outside the District, in these core areas the suburban SOV rate goes down significantly, below 60 percent (except for Mid-City).

The other six areas of the city demonstrate some common features: an SOV rate above 60 percent, a DC resident SOV rate higher than 40 percent, transit utilization at 16 percent or less, and in five of the six cases, a rate for carpool / vanpool use that is significantly higher than the transit utilization rate. This higher SOV rate is largely attributable to workers from outside the District driving alone at a higher rate, sometimes much higher rate, than District residents. This speaks to the need, expressed clearly in the DC 2030 Transportation Vision Action Plan, to continue to coordinate with other jurisdictions and improve efforts to increase transportation choices, connectivity and convenience across jurisdictional boundaries, to increase the sustainability of the transportation system and to improve everyone's quality of life.

Figure 2.14 Single Occupant Vehicle Rates Into Each D.C. Planning Area



2.3 Detailed Analysis by D.C. Planning Area

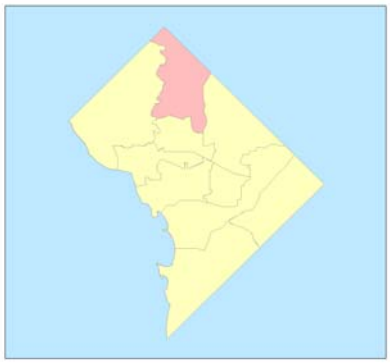
Each D.C. Planning Area has individual characteristics of geographic location, population, employment, transportation infrastructure and levels of service, with attendant advantages or disadvantages with regards to connectivity and efficient utilization of available assets. The analysis for each D.C. Planning Area includes an overview of the destinations for outbound trips, the desire line analysis for outbound trips (showing relative volumes to each area), an overview of the origins for inbound trips, the desire line analysis for inbound trips, and an overview of the modes used for travel for outbound and inbound trips.

Desire line results for each D.C. Planning Area within DC, from DC to external activity centers, and from surrounding counties into DC are presented separately for greater clarity and ability to represent scale. Note that the desire line graphics do not depict travel within each D.C. Planning Area, and do not depict volumes of travel to and from outlying jurisdictions. For example, outbound trips depict travel to the RACs, not to the broader counties, and inbound trips include the nearby counties and cities, not the full universe of trips from outlying Virginia, Maryland, West Virginia, etc. These trips are included in the pie charts introducing each subsection. In addition, tables that include detail to and from each element area, regional activity center, county and all other areas, by mode, are provided in Technical Appendix D.

2.3.1 Upper Northwest North (D.C. Planning Area A)

Upper Northwest North has a good balance between work trips coming into the area (43 percent), and workers leaving the area (48 percent), while nine percent live and work within the area (see Table 2.6). The following section discusses the origin and destination of work trips for the Upper Northwest North area. Figure 2.15 shows Upper Northwest North in relation to other D.C. Planning Areas. Figures 2.16 through 2.22 depict summary and detailed work travel patterns for the area.

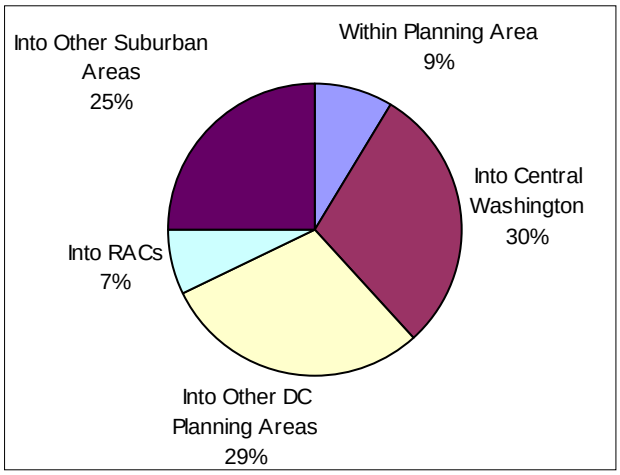
Figure 2.15 Upper Northwest North



Work Trips Originating In This Area

The Census data records 28,568 work trips originating from this D.C. Planning Area, with 19,617 of these trips remaining within the District. As summarized in Figure 2.11 there is an almost even distribution of trips going into Central Washington, into other DC Planning Areas, and into the suburbs. Less than 10 percent of workers both live and work in Upper NW North. (Note that the sample data excludes persons who work at home.)

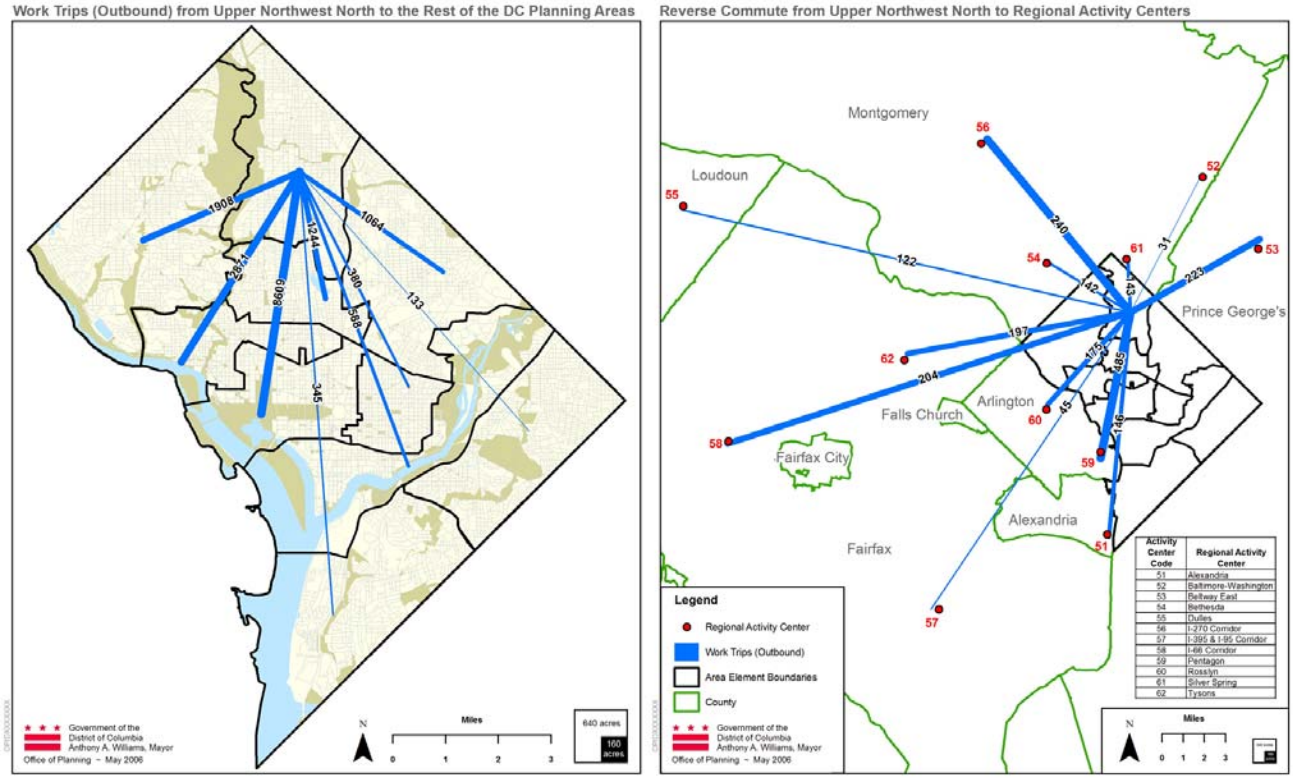
Figure 2.16 Destination of Work Trips Originating in Upper NW North



As shown in Figure 2.17, most of the workers from Upper Northwest North within the District are commuting to Central Washington, with the next highest volume going to Near Northwest. The numbers near the bars indicate the number of daily trips, while the width of the bars identifies the relative volume of trips for that specific graph. Note that each graph has a separate scale, reflecting the wide range of values in the analysis.

The heaviest volume to the Regional Activity Centers is to Pentagon/Crystal City, Activity Center 59. Volumes are approximately equally split between the Beltway East (Activity Center 53) in Prince George's County and the I-270 corridor (Activity Center 56) in Montgomery County.

Figure 2.17 Outbound Work Trip Patterns for Upper Northwest North



Work Trips with Destinations in This Area

The Census data records 26,375 work trips into this D.C. Planning Area. As shown in Figure 2.18, the majority of these trips are coming from nearby Maryland counties (defined as Anne Arundel, Frederick, Howard, Montgomery and Prince George's Counties). Approximately 28 percent are coming to this area from within DC. Another 10 percent are coming from nearby Virginia jurisdictions, defined as Arlington, Fairfax, Loudoun, and Prince William Counties, and the Cities of Alexandria, Fairfax and Falls Church.

As shown in Figure 2.19 the highest volume of trips into this area is from Prince George's County, followed closely by Montgomery County. From within the District, Near Northwest is the source of the most workers, with over 1,000 trips.

Figure 2.18 Origin of Work Trips with Destinations in Upper NW North

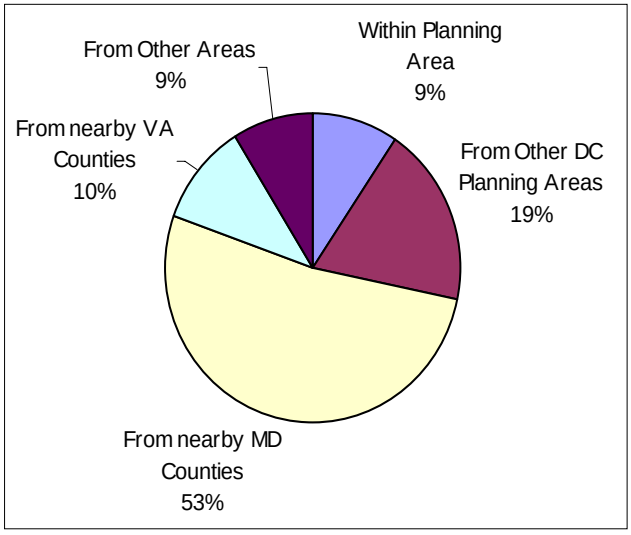
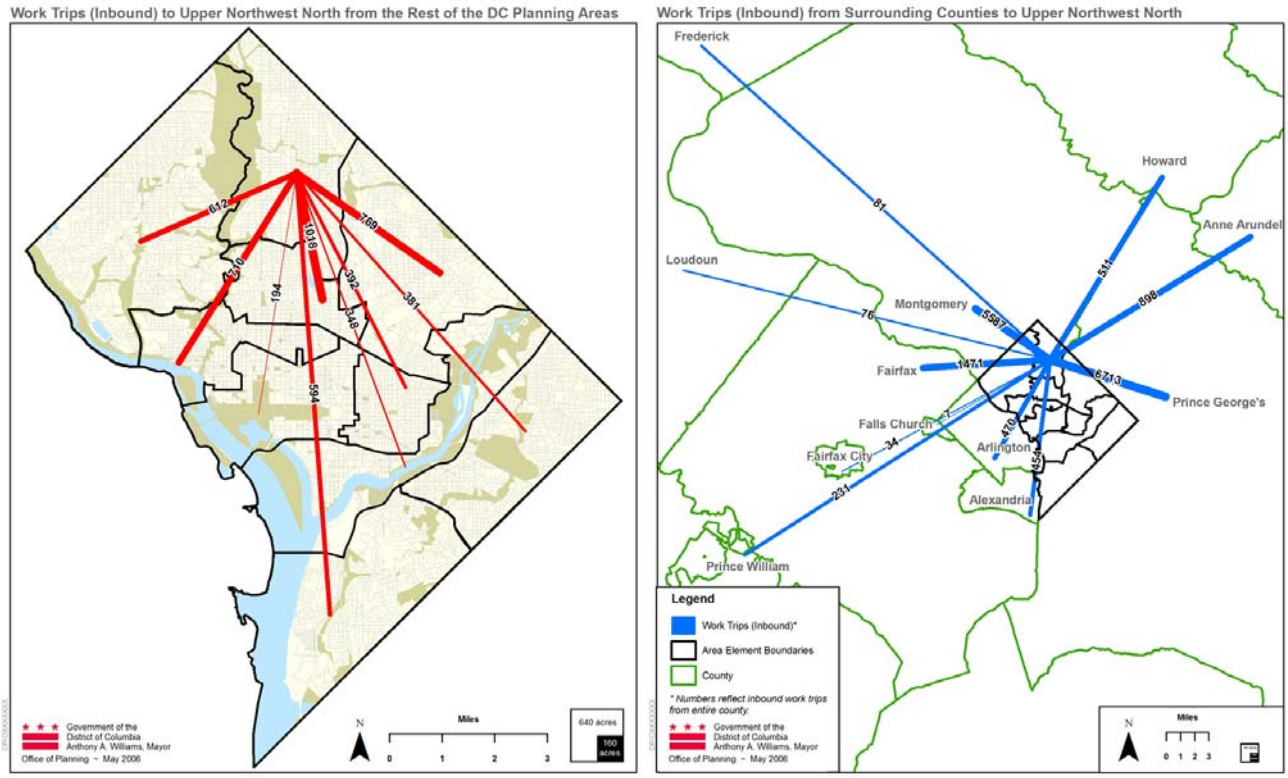


Figure 2.19 Inbound Work Trip Patterns for Upper Northwest North



How They Get Where They Are Going

Upper Northwest North has the highest SOV rate for originating trips of any Planning Area in the District at approximately 50 percent (see Figure 2.20). Inbound trips have an SOV rate of 68 percent, (Figure 2.21) one of the highest in the City. Strategies are proposed to increase employment in this area, to better balance the housing mix. Premium transit and "Great Streets" improvements along Georgia Avenue, which traverses this area, improvements in pedestrian and bike access, plus other improvements in transit choices, should improve the mode split for this Planning Area in the future.

Figure 2.20 Mode for Work Trips Originating in Upper NW North

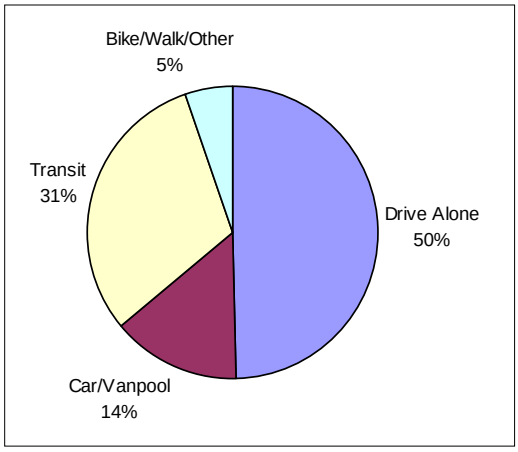
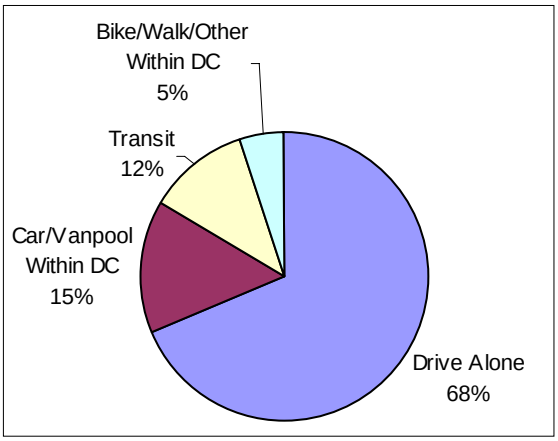


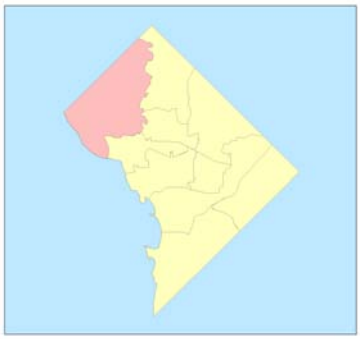
Figure 2.21 Mode for Work Trips Into Upper NW North



2.3.2 Upper Northwest West (D.C. Planning Area B)

Upper Northwest West has almost the same proportion of work trips coming into the area as work trips leaving the area (43 percent vs. 44 percent) (see Table 2.6). It is also the origin for more work trips than any other area in the District. The following section discusses the origin and destination of work trips for the Upper Northwest West area. Figure 2.22 shows the placement of Upper Northwest West in the District.

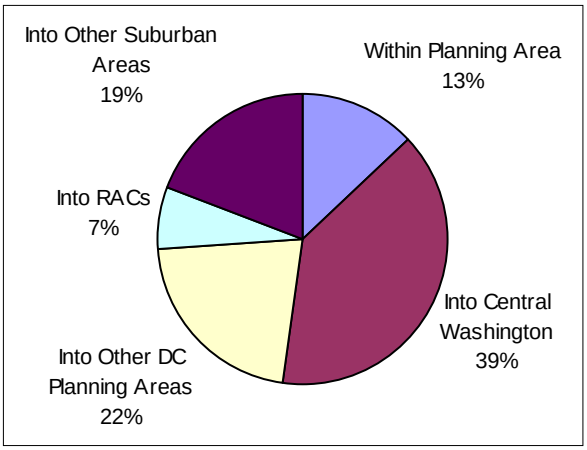
Figure 2.22 Upper Northwest West



Work Trips Originating In This Area

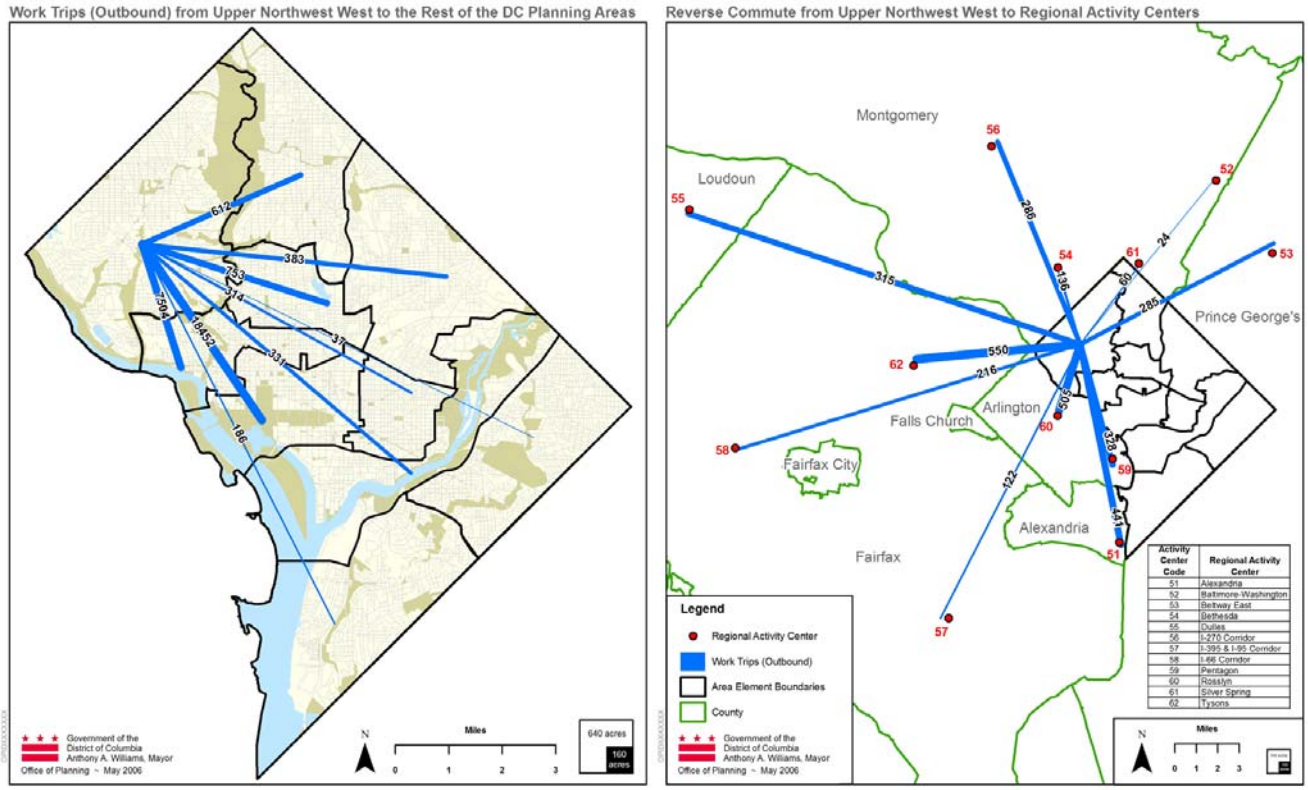
The Census data records 46,828 work trips originating from this D.C. Planning Area, with 34,621 or almost three-quarters of these trips remaining within the District. As summarized in Figure 2.23 there is a much more prominent flow into Central Washington than into any other area. Approximately 13 percent of workers both live and work in Upper NW West .

Figure 2.23 Destination of Work Trips Originating in Upper NW West



As shown in Figure 2.24, most workers from the area commute to Central Washington. Another 16 percent (of all outbound trips) commute to the adjoining Near Northwest, while 13 percent commute to Upper Northwest West. As shown in Figure 2.23, 19 percent of outbound trips do not go to the RACs, but to other destinations in the suburbs. The heaviest volume to the Regional Activity Centers is to Tysons, Activity Center 62, followed by Alexandria, Activity Center 51 and Rosslyn, Activity Center 60.

Figure 2.24 Outbound Work Trip Patterns for Upper Northwest West



Work Trips With Destinations In This Area

The Census data records 46,644 work trips into this D.C. Planning Area. As shown in Figure 2.25, approximately two-thirds of the trips are from outside the District, with the majority of these trips coming from nearby Maryland counties. Approximately 21 percent are coming to this area from other Planning Areas within DC. Another 18 percent are coming from nearby Virginia jurisdictions.

Approximately 13 percent of work trips destined for the area originated within the area. Work trips from within DC but outside the area (Figure 2.26) are predominately from adjoining areas such as Mid-City (6 percent of all trips inbound), Near Northwest (5 percent) and Upper Northwest North (4 percent). Approximately 26 percent of workers to this area come from Montgomery County, with another 13 percent from Prince George's County and 9 percent from Fairfax County.

Figure 2.25 Origin of Work Trips With Destinations in Upper NW West

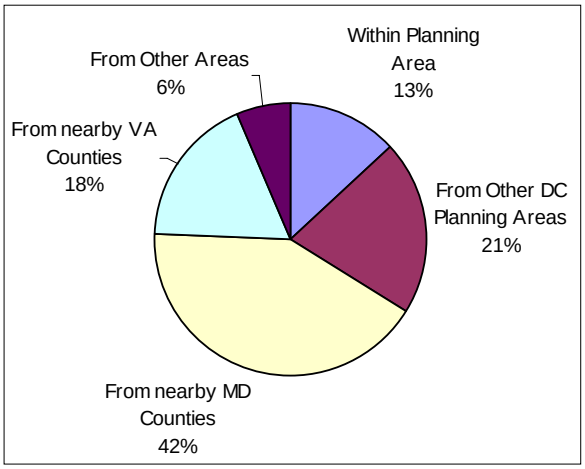
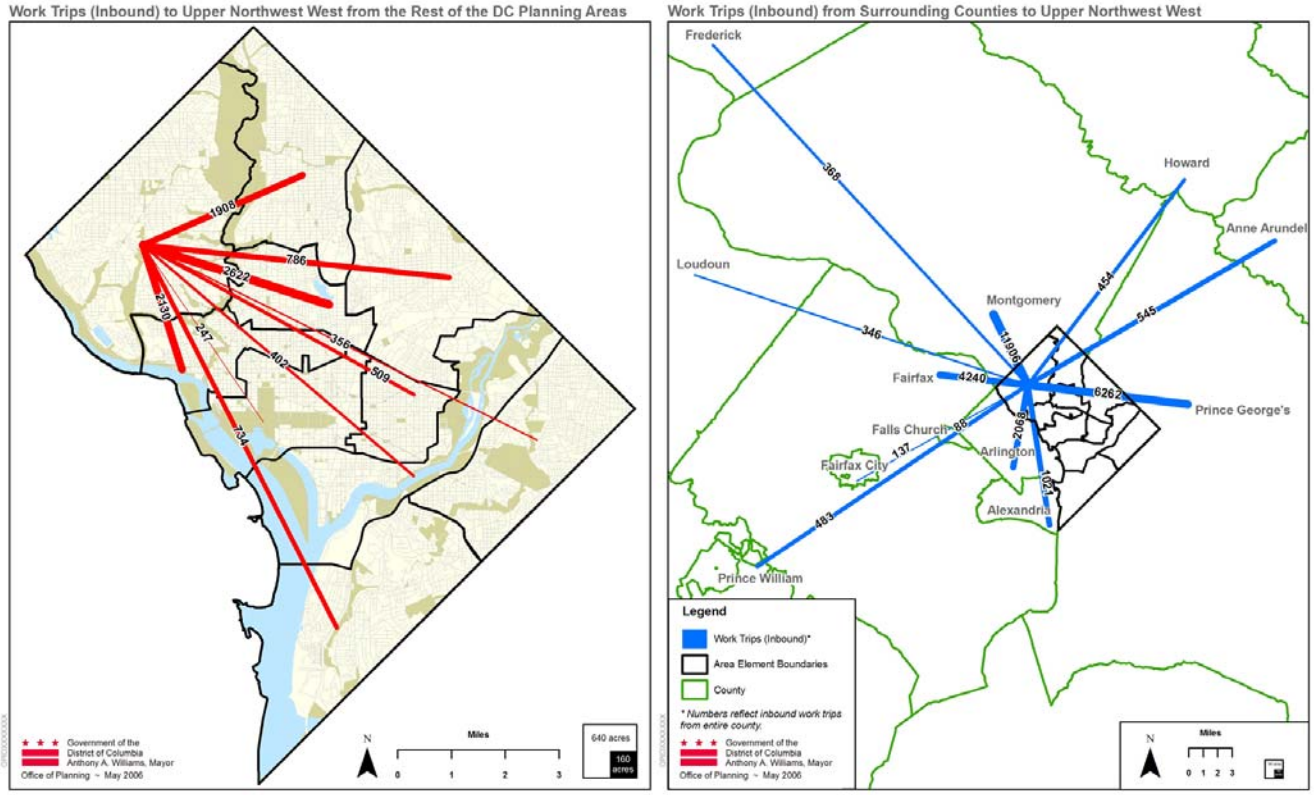


Figure 2.26 Inbound Work Trip Patterns for Upper Northwest West



How They Get There: Mode Split

As shown in Figure 2.27, approximately 48 percent of workers from this area drive alone to work (compared with 40 percent for city workers as a whole), while 10 percent car/vanpool, one-third use transit, and nine percent use other modes.

Upper Northwest West has one of the highest proportions of workers driving alone of any D.C. Planning Area (See Figure 2.28). Detail on mode split to each area is provided in Technical Appendix D. The high SOV rate for trips into Upper Northwest West is largely attributable to trips coming in from the suburbs. The mode split for workers coming into Upper Northwest West from within DC is 45 percent SOV, 26 percent transit and 18 percent other, including those who live and work within the area. The mode split coming in from outside the District to this area is 73 percent SOV and only 10 percent transit. Approximately 74 percent of the workers from Montgomery Co. to this area drove alone, compared with 66 percent from Prince George's Co. and 82 percent from Fairfax Co. Most others were in carpools or vanpools.

Figure 2.27 Mode for Work Trips Originating in Upper NW West

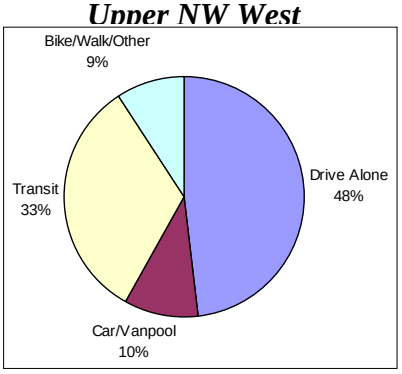
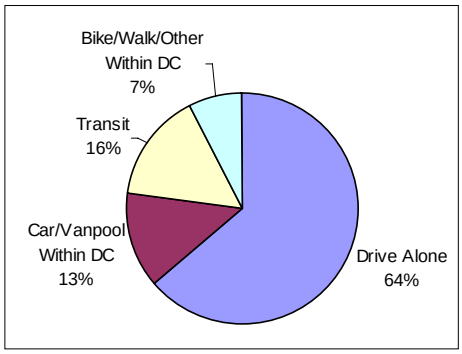


Figure 2.28 Mode for Work Trips Into Upper NW West



2.3.3 Mid City (D.C. Planning Area C)

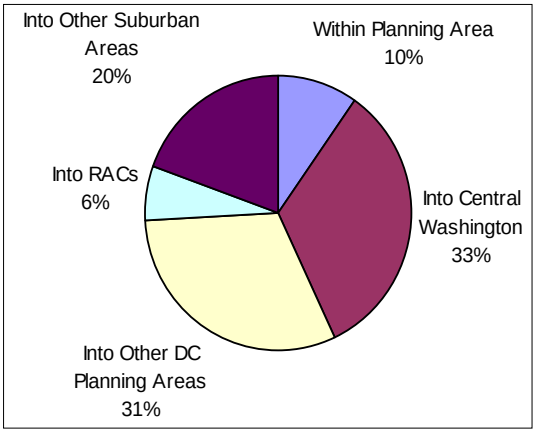
Mid-City has fairly good balance between work trips coming into the area (39 percent) and work trips leaving the area (50 percent). The following section discusses the origin and destination of work trips for the Upper Northwest North area. Figure 2.29 places Mid-City in the geographic context of the District.

Figure 2.29 Mid-City

Work Trips Originating In This Area

The Census data records 36,267 work trips originating from this D.C. Planning Area, with 29,705 of these trips remaining within the District. As summarized in Figure 2.30 there is an almost even distribution of trips going into Central Washington, and into other DC Planning Areas, with smaller numbers going into the suburbs. Approximately 10 percent of workers both live and work in Mid City.

Figure 2.30 Destination of Work Trips Originating in Mid City

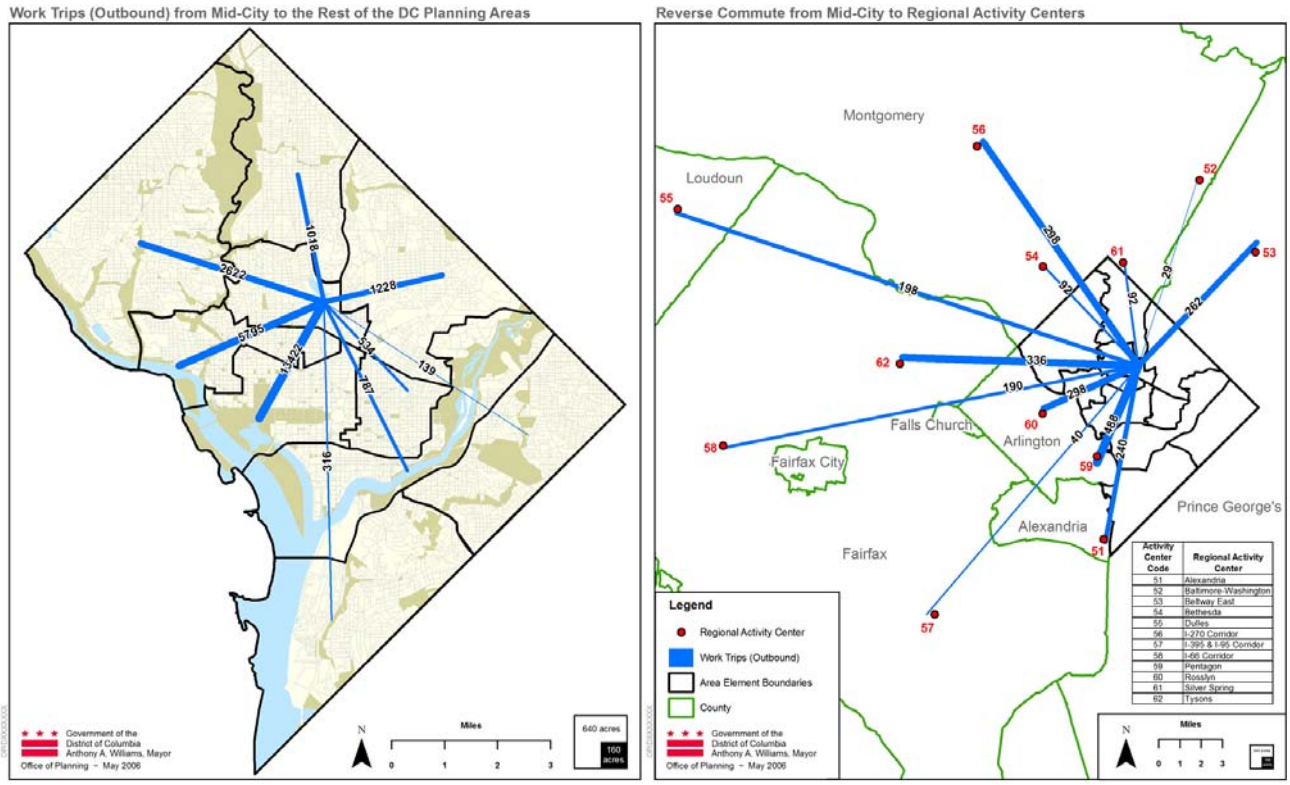


As shown in Figure 2.31, most of the workers from Upper Northwest North within the District are commuting to Central Washington, with the next highest volumes going to Near Northwest (14 percent of all trips) and Upper Northwest West (seven percent of all trips.)

The heaviest volume to the Regional Activity Centers is to Pentagon/Crystal City, Activity Center 59. The next heaviest volumes are to Tysons (Activity Center 62) and Rosslyn (Activity Center 60). The major destination in Maryland was Beltway East (Activity Center 53).

Each of these represents approximately one percent of all outbound work trips.

Figure 2.31 Outbound Work Trip Patterns for Mid-City



Work Trips with Destinations In This Area

The Census data records 32,393 work trips into this D.C. Planning Area. As shown in Figure 2.32, the large majority of these trips are coming from nearby Maryland counties. Fewer than 20 percent are coming to this area from other areas within DC. Only eight percent are coming from nearby Virginia jurisdictions.

As shown in Figure 2.33 the highest volume of trips into this area is from Prince George's County (28 percent of all trips), followed closely by Montgomery County (23 percent). From within the District, Near Northwest and Upper Northwest North each generate approximately four percent of inbound trips.

Figure 2.32 Origin of Work Trips

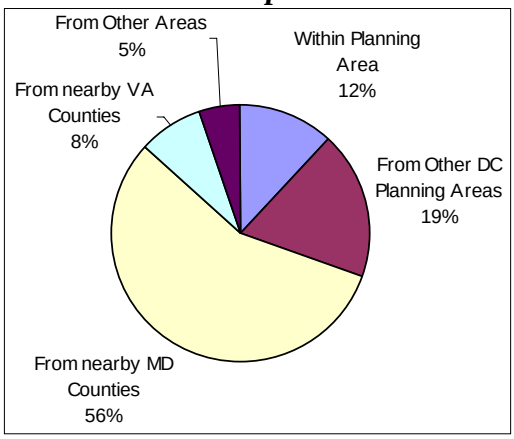
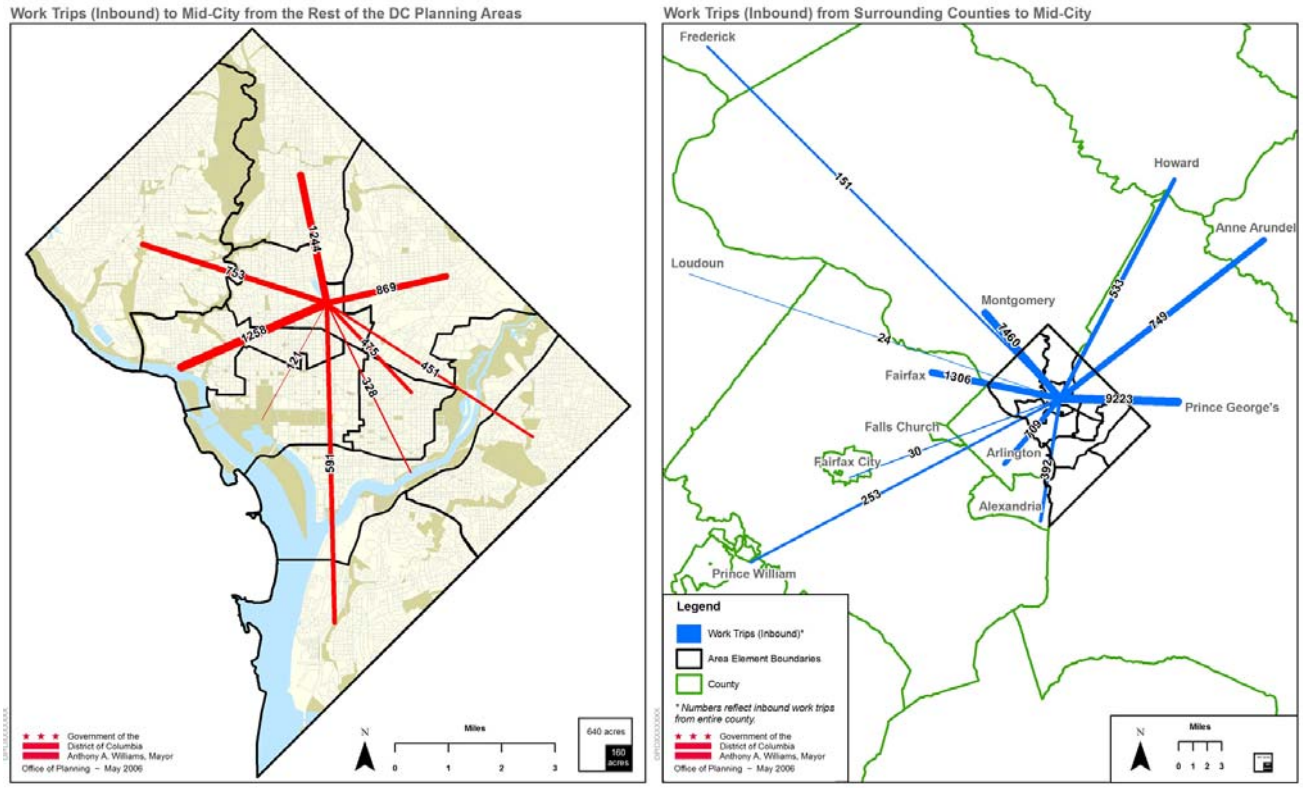


Figure 2.33 Inbound Work Trip Patterns for Mid-City



How They Get There: Mode Split

As shown in Figure 2.34, approximately 29 percent of workers from this area drive alone to work, well below the average of 40 percent for city workers as a whole. Work trips originating in Mid City have the highest transit use of any D.C. Planning Area, at 42 percent. Mid City has the third highest percentage of persons using "other" means to get to work, primarily walking and bicycling.

Of the District residents coming into this area to work, or living and working within the area, one-third drive alone. A full 66 percent, or almost two-thirds of the workers coming into this area from outside the District drive alone. Because the majority of workers coming into this area are from outside the District, Mid City has a worse mode split than average for the City as shown in Figure 2.35.

Figure 2.34 Mode for Work Trips Originating in Mid-City

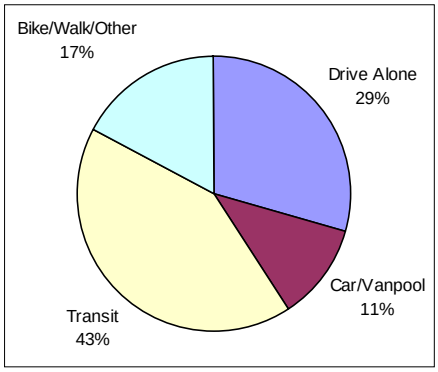
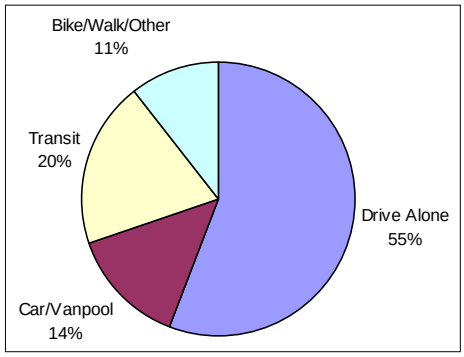


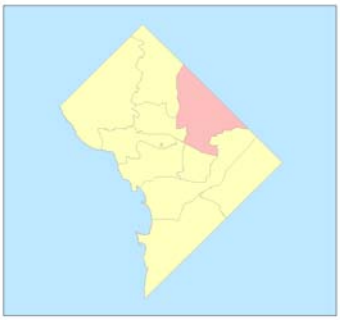
Figure 2.35 Mode for Work Trips Into Mid-City



2.3.4 Upper Northeast (D.C. Planning Area D)

Upper Northeast is one of the four areas in the District that have more jobs coming into the area than leaving the area (the other three being Central DC, Near Northwest, and Anacostia Waterfront.) The following section discusses the origin and destination of work trips for the Upper Northeast area. Figure 2.36 shows Upper Northeast's geographic placement within the District.

Figure 2.36 Upper Northeast



Work Trips Originating In This Area

The Census data records 21,086 work trips originating from this D.C. Planning Area, with 14,637 of these trips remaining within the District. As summarized in Figure 2.37 the predominant movement is into Central Washington. There is also substantial work flow into other DC Planning Areas, and into the suburbs. Approximately 10 percent of workers both live and work in Upper Northeast.

As shown in Figure 2.38, most of the workers from Upper Northeast within the District are commuting to Central Washington, with the next highest volume going to Near Northwest (eight percent of all outbound trips). The heaviest volume to the Regional Activity Centers is to Beltway East, followed closely by the Pentagon. Each represents approximately two percent of all outbound trips.

Figure 2.37 Destination of Work Trips Originating in Upper Northeast

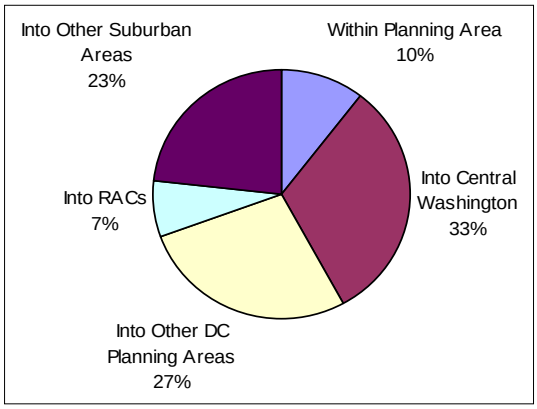
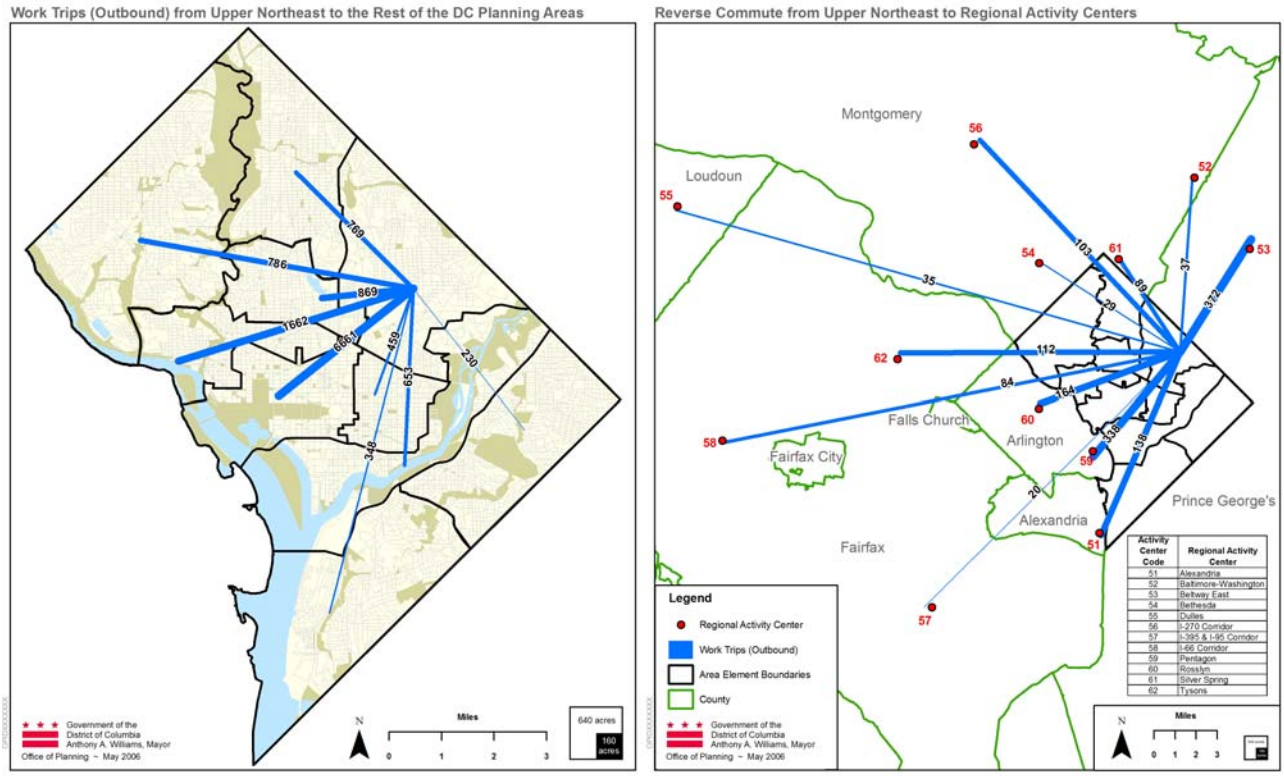


Figure 2.38 Outbound Work Trip Patterns for Upper Northeast



Work Trips With Destinations In This Area

The Census data records 27,809 work trips into this D.C. Planning Area. As shown in Figure 2.39 almost half of these trips are coming from nearby Maryland counties. Almost one-quarter are coming to this area from other areas within DC. Another 12 percent are coming from nearby Virginia jurisdictions.

As shown in Figure 2.40 the highest volume of trips into this area is from Prince George's County, with 33 percent of all trips into the area, followed by Montgomery County with 12 percent of trips. From within the District, Upper Northwest North and Mid-City each contribute approximately four percent of all work trips, while Near Northwest, Capitol Hill and Anacostia Upper Southeast each contribute three percent.

Figure 2.39 Origins of Work Trips with Destinations in Upper Northeast

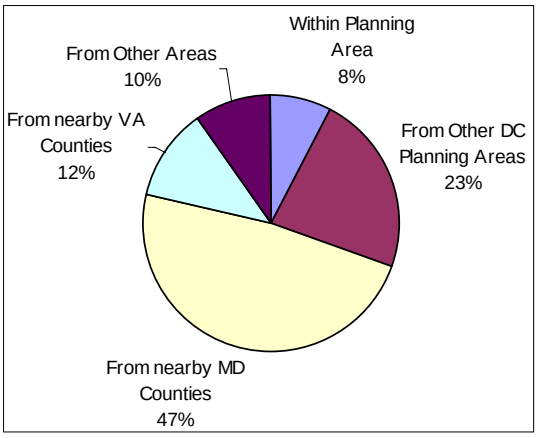
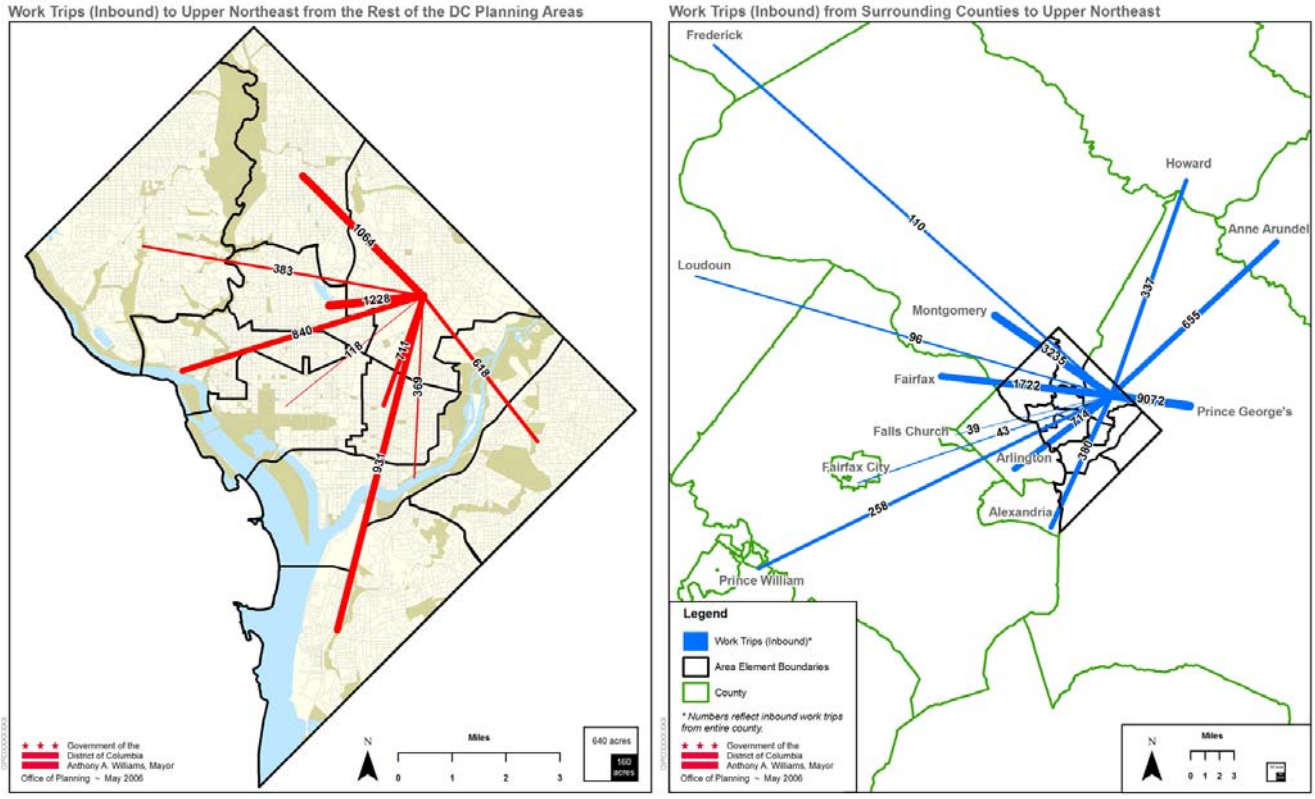


Figure 2.40 Inbound Work Trip Patterns for Upper Northeast



How They Get There: Mode Split

As shown in Figure 2.41, approximately 49 percent of workers from this area drive alone to work (compared with 40 percent for city workers as a whole). This area has the second-highest proportion of workers driving alone of any DC area. Although vanpool/car pool utilization is about average for the City, transit use and "other" modes are well below average. Improved transit services, such as proposed rapid bus routes along Rhode Island Avenue and Michigan Avenue should lead to increased transit use, while improved pedestrian and bicycle facilities should lead to increased use of these modes.

As is the case in most areas of the city, the mode split for workers coming into an area is worse (more SOV) than for trips leaving the area. For example, compare the mode split for Figure 2.41 to Figure 2.42. In all cases, the mode split for DC residents coming into an area is better than that of non-residents. The mode split for trips inbound to this area from within the District of Columbia is 46 percent SOV, 14 percent carpool/vanpool, 22 percent transit, and 18 percent other. The mode split inbound from outside the District is 71 percent SOV, 18 percent carpool/van pool, 14 percent transit, and seven percent other. Improved transit, and improved connectivity from major transit hubs to jobs in the area is a priority for this area.

Figure 2.42 Mode for Work Trips Into Upper Northeast

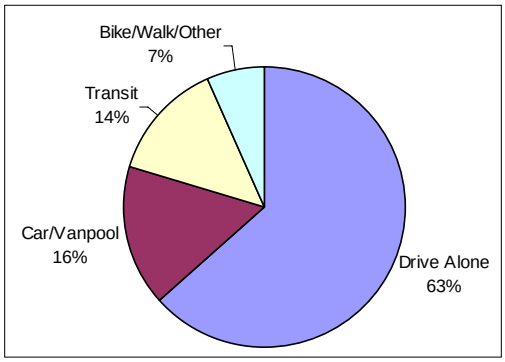
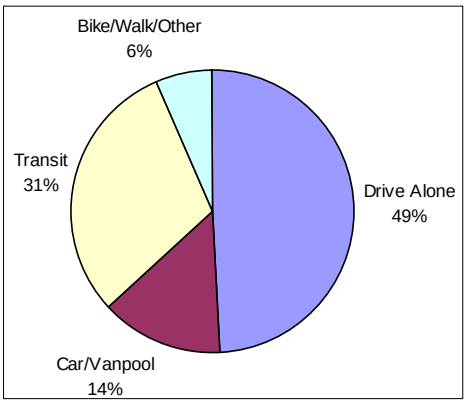
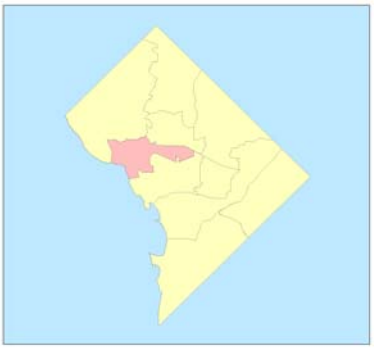


Figure 2.41 Mode for Work Trips Originating in Upper Northeast



2.3.5 Near Northwest (D.C. Planning Area E)

Figure 2.43 Near Northwest

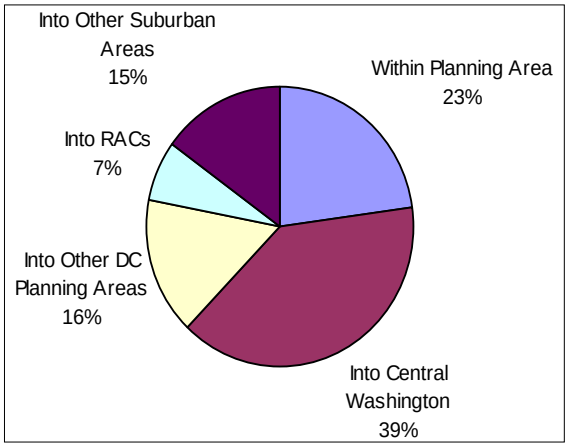


Near Northwest has far more work trips coming into the area than leaving the area, 62 percent versus 24 percent. By a small margin it also has the highest proportion of people both living and working within the area. Figure 2.43 shows Near Northwest's central location bordering Central Washington.

Work Trips Originating In This Area

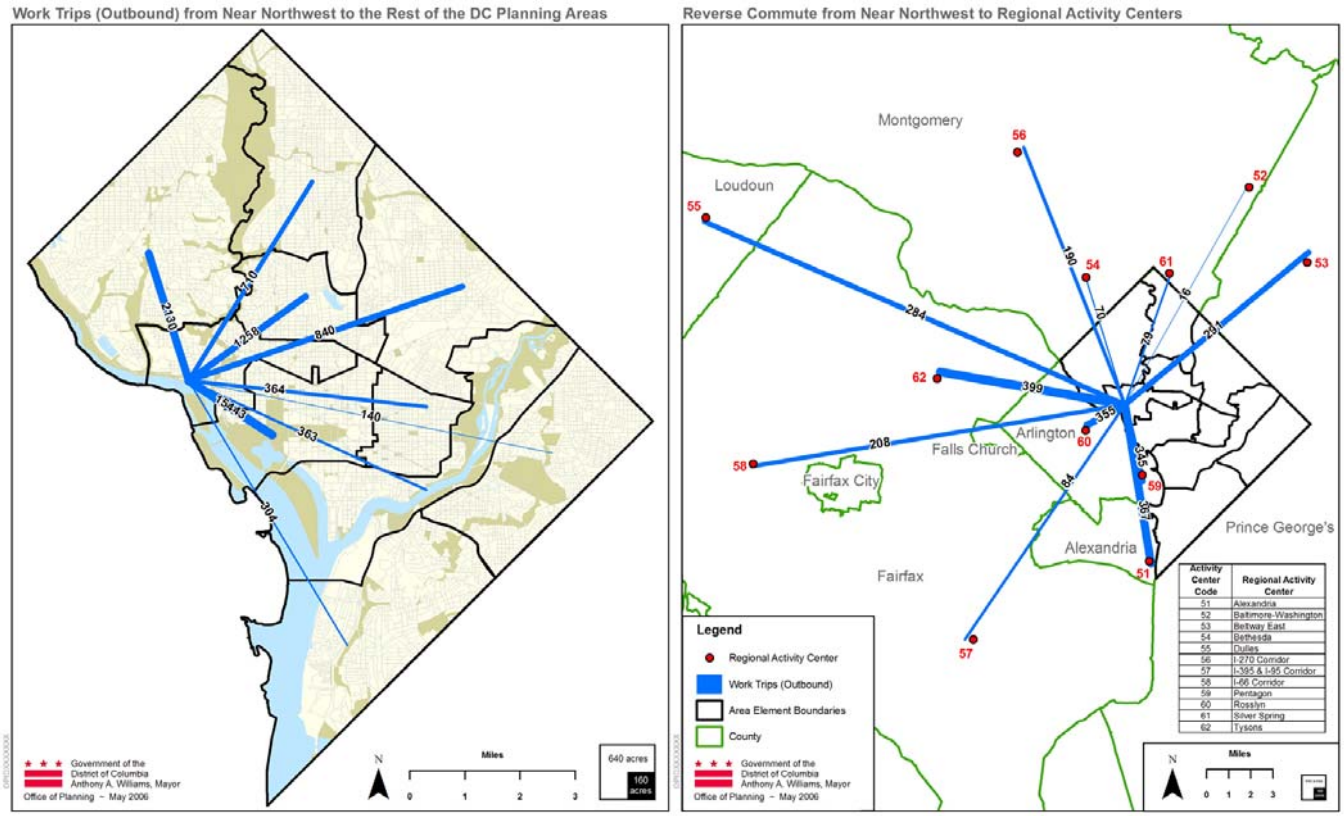
The Census data records 38,941 work trips originating from this D.C. Planning Area, with 30,392 of these trips remaining within the District. As summarized in Figure 2.44 a full 62 percent of Near Northwest work trips are either within the area or to adjoining Central Washington. This confluence of extensive work opportunities balanced with extensive residential land use, linked with sidewalks, bikeways, and extensive transit, is the key to the above average mode split statistics that will be discussed below.

Figure 2.44 Destination of Work Trips Originating in Near Northwest



As shown in Figure 2.45 (and 2.44), most of the workers from Upper Northwest North within the District are commuting to Central Washington and staying within the area. Approximately five percent go to Upper Northwest West. No single RAC accounts for more than one percent of all outbound trips.

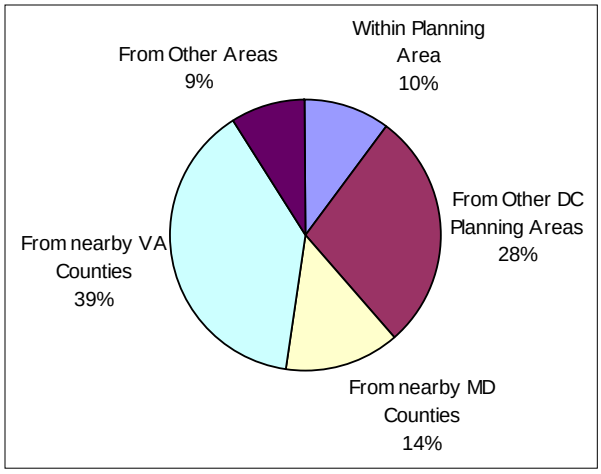
Figure 2.45 Outbound Work Trip Patterns for Near Northwest



Work Trips With Destinations In This Area

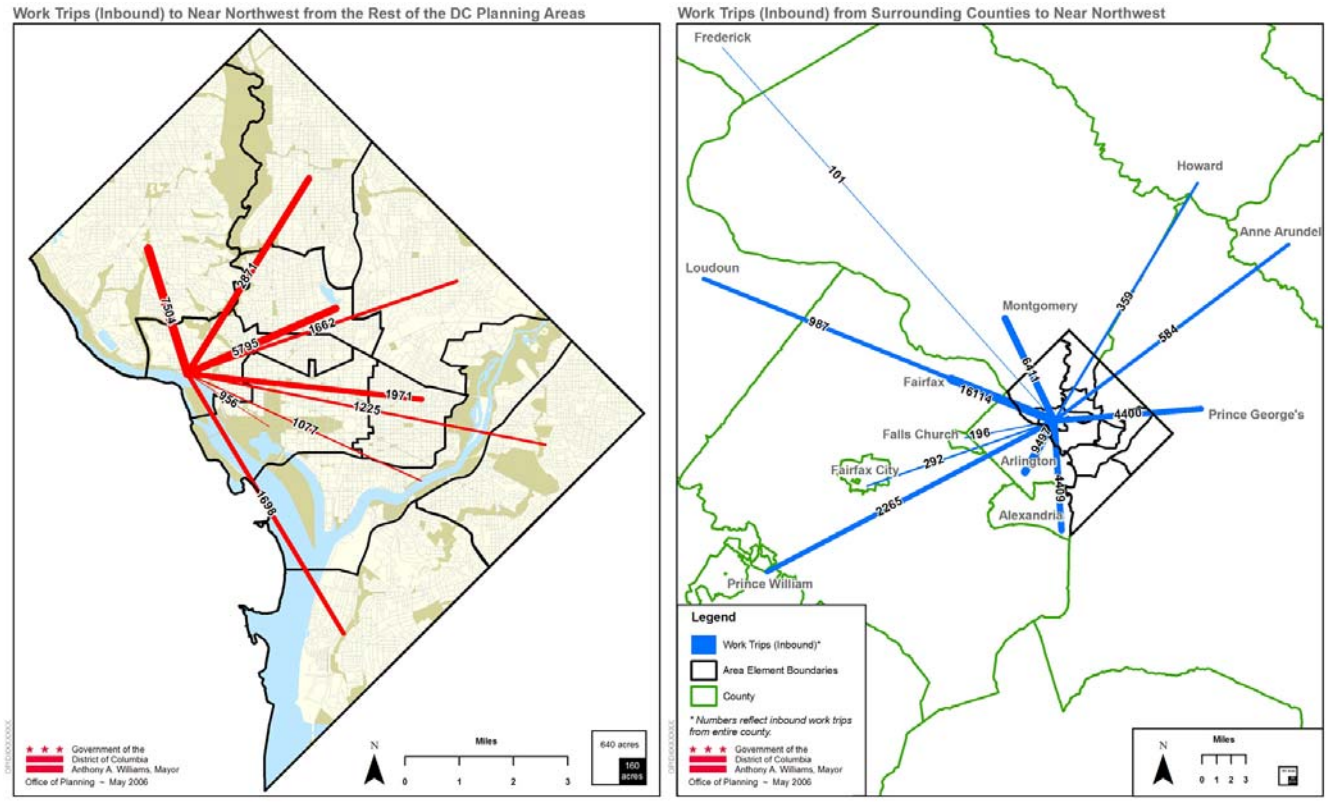
The Census data records 86,956 work trips into this D.C. Planning Area, second only to Central Washington in the number of work trip destinations. As shown in Figure 2.46, the volume of trips from nearby Virginia jurisdictions slightly exceeds the volume from the District, including trips within the area. In contrast to the previous areas, Maryland residents are a clear minority.

Figure 2.46 Origins of Work Trips with Destinations in Near Northwest



As shown in Figure 2.47 work trips into the area from other areas of DC were mainly from the adjoining areas such as Upper Northwest West (Area B) at nine percent of all trips and Mid-City (Area C) at seven percent of trips. Approximately 19 percent of all workers to this area come from Fairfax County, 11 percent from Arlington, seven percent from Montgomery County, and five percent each from Prince George's County and the City of Alexandria.

Figure 2.47 Inbound Work Trip Patterns for Near Northwest



How They Get There: Mode Split

As shown in Figure 2.48, approximately 25 percent of workers from this area drive alone to work (compared with 40 percent for city workers as a whole), while six percent car/vanpool, 28 percent use transit, and 41 percent use other modes. This area has the highest proportion of use of other modes of any DC area. According to the Census, almost 16,000 work trips per day are made using other modes, which include bicycle, pedestrian, taxi and motorcycle. This represents almost 41 percent of all the "other mode" outbound work trips in the District, and is the main contributor to the overall 15 percent "other mode" usage for the District as a whole. As noted above, this is largely attributable to the close proximity of jobs and housing. Detail on mode split to each area is provided in Technical Appendix D.

The mode split for trips coming into the area is not as impressive as for trips leaving the area (see Figure 2.49), however, it is slightly below the average for the city as a whole, and Near Northwest ranks second only to Central Washington in terms of the lowest percentage of SOV. Workers from within the District, including those within the area, have a fairly even division of mode split between SOV (28 percent), transit (34 percent) and other (29 percent), with only nine percent using carpools/ vanpools. From outside the District, 57 percent drive alone, while 23 percent use transit and 17 percent carpool or vanpool.

Figure 2.48 Mode for Work Trips Originating in Northwest

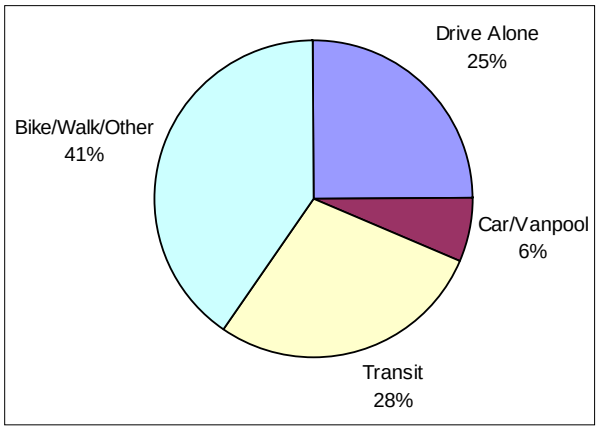
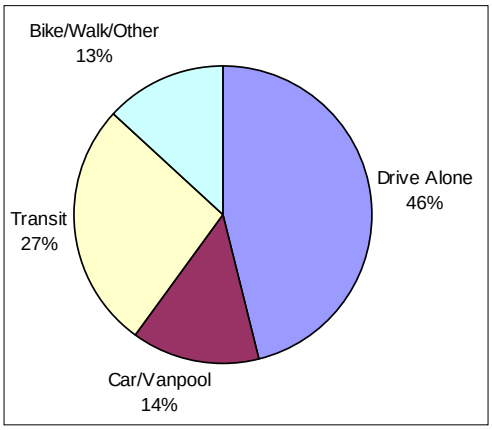


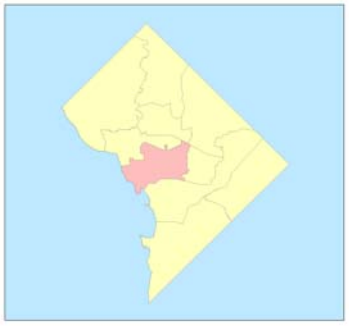
Figure 2.49 Mode for Work Trips Into Near Northwest



2.3.6 Central Washington (D.C. Planning Area F)

Central Washington is the largest and most concentrated area for employment in the District and in the region. With almost 400,000 daily trips inbound (393,927 according to the Census) and only 7,018 outbound, Central Washington has the least balance of any area in terms of the mix of workplaces and residences. It also has the most concentrated transit system infrastructure and service levels, plus programs and parking incentives to encourage ridesharing, and thus enjoys the best mode split of any area in the city. Figure 2.50 shows the location.

Figure 2.50 Central Washington



Work Trips Originating In This Area

As noted above, the Census data records only 7,018 work trips originating from this D.C. Planning Area, including 3,295 that remain within the area. Figure 2.51 illustrates the distribution of these trips. As shown in Figure 2.52, most of the workers originating from Central Washington that are not staying within the area are thinly dispersed throughout the city and the region. Near Northwest, with almost 1,000 work trips, represents the only significant destination pair for Central Washington outbound work trips.

Figure 2.51 Destination of Work Trips Originating in Central Washington

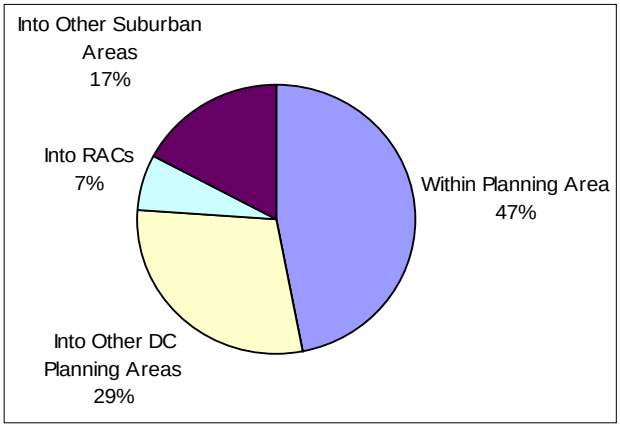
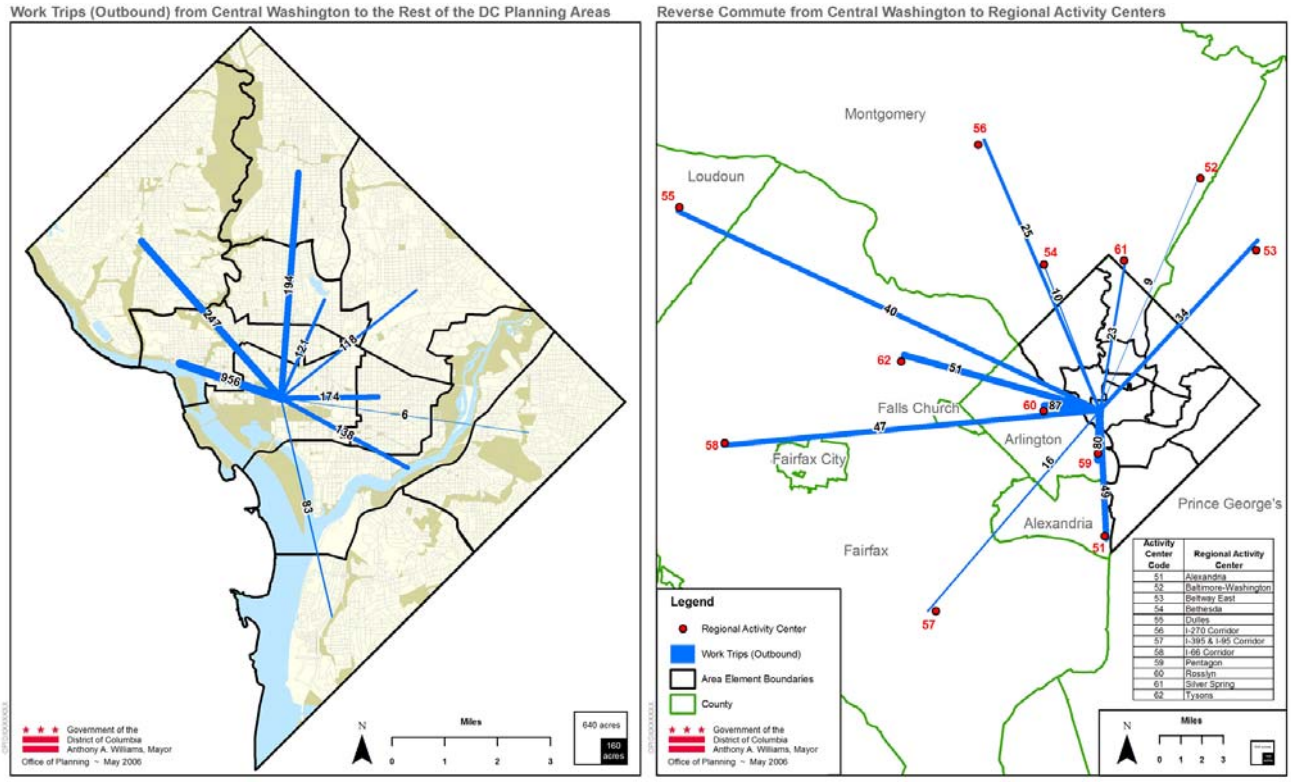


Figure 2.52 Outbound Work Trip Pattern for Central Washington



Work Trips With Destinations In This Area

The Census data records 26,375 work trips into this D.C. Planning Area. As shown in Figure 2.53 the majority of these trips are coming from nearby Maryland counties (defined as Anne Arundel, Frederick, Howard, Montgomery and Prince George's Counties). Approximately 28 percent are coming to this area from within DC. Another 10 percent are coming from nearby Virginia jurisdictions, defined as Arlington, Fairfax, Loudoun, and Prince William Counties, and the Cities of Alexandria, Fairfax and Falls Church.

As noted above, Central Washington is the major work destination from every area of the District, as well as most of the region, as illustrated in Figure 2.52 above. A full 91 percent of work trips associated with Downtown are inbound, compared with two percent outbound, and 7 percent within the area. As summarized in Figure 2.53 the District is the source for less than one-quarter of the trips into Central Washington, while nearby Maryland counties account for almost 40 percent.

Figure 2.53 Origin of Work Trips with Destinations in Central Washington

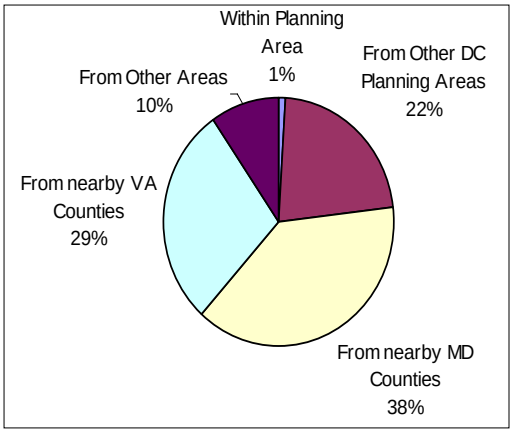
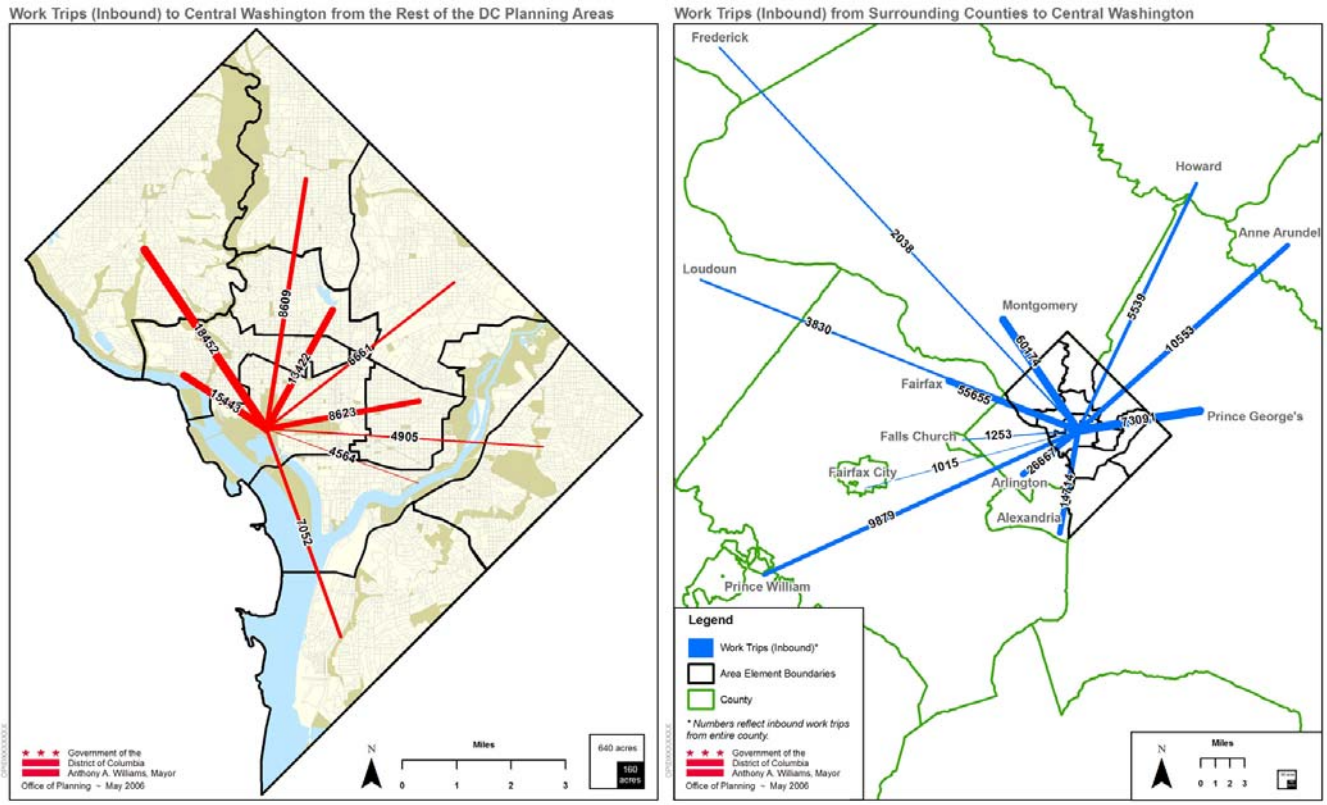


Figure 2.54 provides additional summary detail on the major movements into Central Washington. Regarding the inbound trips within the District,

approximately 5 percent of all work trips are coming from Upper Northwest West followed by Near Northwest at 4 percent and Mid-City at three percent of all trips. From outside the District, approximately 19 percent of workers to this area come from Prince George's County, with another 15 percent from Montgomery County, 14 percent from Fairfax County and seven percent from Arlington. These four jurisdictions comprise 55 percent of all work trips into Central Washington.

Figure 2.54 Inbound Work Trip Patterns for Central Washington



How They Get There: Mode Split

As shown in Figure 2.55, the small number of outbound trips from this area represent a very sustainable balance of modes, similar to Near Northwest's mix of limited drive alone, extensive transit and very high utilization of other modes. This is accomplished because more than half the workers with trips originating in this area work either within the area or in adjacent Near Northwest.

As shown in Figure 2.56, Central Washington has the best and lowest percentage of SOV for inbound trips in the District, as well as the highest volume of trips, by far. As discussed in the introductory section, particularly with regards to Figures 2.12 and 2.13 and Tables 2.9 and 2.10, the mode split for Central Washington is the foundation for the mode split for the entire District. Because of its significance and its volume, Tables 2.11 and 2.12 are included in order to provide the full detail of trip volumes into this area by mode and by DC Planning Area or other jurisdiction. Note that this level of detail is available for each D.C. Planning Area in Appendix D, for both inbound and outbound trips.