5.

ADDRESSING THE VISION'S GOALS AND OBJECTIVES

The purpose of this chapter is to describe the expected performance of the future transportation system in relation to the Vision's policy goals and objectives. The first section presents the plan's anticipated overall performance based on travel demand forecasts. The second section assesses how the plan is expected to perform in relation to the Vision's policy goals and objectives. The last section summarizes the policy goal assessment and identifies challenges for updating the plan.

THE EXPECTED PERFORMANCE OF THE PLAN

Regional transportation demand projections for the plan, developed from the COG/TPB travel forecasting process, provide background information on the overall expected performance of the plan. The COG/TPB travel forecasting process utilizes forecasts of households and jobs together with a simulation of the expected transportation system in future years to predict the amounts and types of travel by persons and vehicles, and the resulting system performance. This section contains information on changes in demographics and travel characteristics, such as vehicle miles of travel (VMT), vehicle trips, transit trips, transit mode share, and accessibility measures.

The travel demand data provided in this chapter are based on the Washington, DC-MD-VA Metropolitan Statistical Area (MSA), which also serves as the area for air quality planning for the region[1] and is shown in Figure 5-1 along with the TPB planning area.

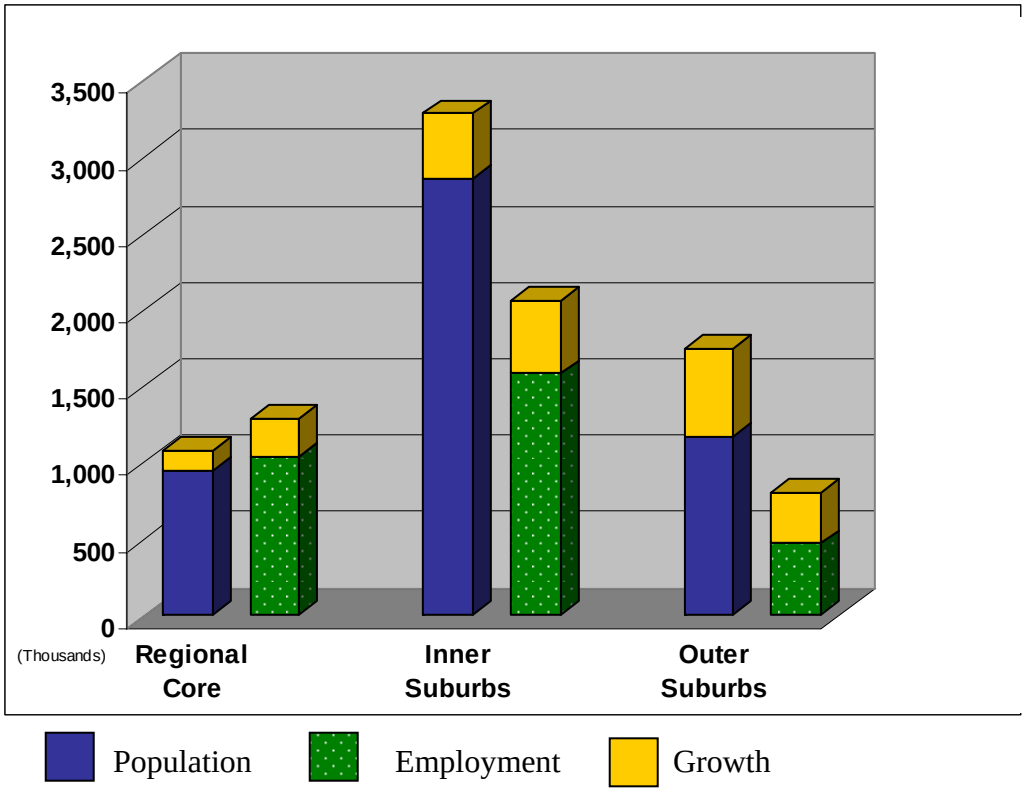
[1] Previous CLRP Updates and the Air Quality Conformity document provide travel demand data for the TPB modeled area or the TPB planning area.

Figure 5-1: The TPB Planning Area and
the Washington DC-MD-VA Metropolitan Statistical Area (MSA)

Population and Employment Growth

Land use changes expected over the next 25 years were discussed in Chapter 3 (see Metropolitan Growth and Development). As an introduction to forecast conditions and the plan's performance, information on how the region is expected to develop is helpful because metropolitan growth greatly impacts the transportation challenges this region is facing. The region is forecast to grow by more than one million people and one million jobs over the next 25 years—a 23 percent increase in population and a 34 percent increase in employment.

Figure 5-2: Change in Population and Employment
in the Regional Core, Inner Suburbs, and Outer Suburbs 2005 - 2030



Regional Core:

District of Columbia; Arlington County and the City of Alexandria in Virginia.

Inner Suburbs:

Montgomery and Prince George's counties in Maryland; Fairfax County, the City of Fairfax and the City of Falls Church in Virginia.

Outer Suburbs:

Loudoun, Prince William, and Stafford counties in Virginia; Frederick, Calvert and Charles counties in Maryland.

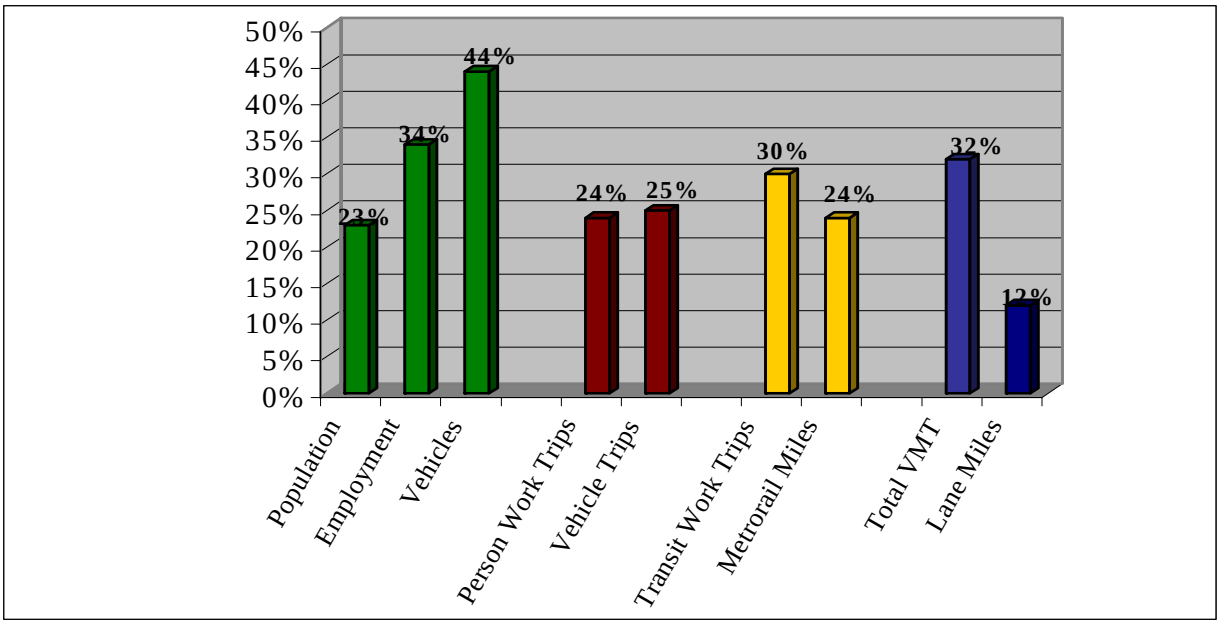
Figure 5-2 shows that the regional core will grow at a slower rate than the outer suburbs, which will see dramatic increases in population and employment. Despite the dramatic growth in the outer suburbs, the inner parts of the region (the regional core and inner suburbs) are still expected to have the highest concentrations of jobs and people in 2030. However, while most of the employment is in the regional core and inner suburbs, most of the population is located in inner and outer suburbs.

Travel Demand Forecasts and Resulting Conditions

The significant increase in population and jobs creates additional vehicles, trips, and congestion on the region's transportation system. Regional transportation demand projections for the plan predict the amounts and types of travel by persons and vehicles and the resulting system performance levels.

Figure 5-3 presents a summary of the change in regional demographic and transportation forecasts over the next 25 years. The figure illustrates that while population will increase 23 percent, employment and total daily vehicle miles of travel (VMT) will grow at even higher rates.

Figure 5-3: Percent Changes in Demographics and Travel Characteristics 2005 - 2030



Source: Air Quality Conformity Determination of the Year 2003 Constrained Long-Range Plan and the FY2004-2009 Transportation Improvement Plan for the Washington Metropolitan Region. National Capital Region Transportation Planning Board. December 31, 2003.

Tables 5-1 and 5-2 provide the year 2005 and 2030 data for regional travel that support Figure 5-3. Significant increases in travel are expected over the next 25 years. Total VMT is increasing faster than population. The transit system is expected to be under greater strain due to the demand for transit ridership.

Table 5-1: Summary of Regional Travel Forecasts 2005 - 2030
(in Thousands)

	2005	*2015*	*2025*	*2030*	*Absolute Change 2005-2030*	*Percent Change 2005-2030*
Demographics						
Population	4,970	5,600	5,980	6,100	1,130	23%
Employment	3,080	3,590	4,000	4,140	1,060	34%
Vehicles	3,670	4,320	4,970	5,290	1,620	44%
Estimated Daily Travel						
Truck Trips	360	420	480	500	140	39%
Total Vehicle Trips	15,520	17,530	19,010	19,460	3,940	25%
Total Daily VMT	126,450	146,520	160,390	166,400	39,950	32%
Total Daily VMT Per Capita*	25	26	27	27	2	7%
Lane-Miles of Roadway	15,700	17,162	17,580	17,600	1,900	12%

*Figures are shown in total and are not in thousands.
Source: Air Quality Conformity Determination of the Year 2003 Constrained Long-Range Plan and the FY2004-2009 Transportation Improvement Plan for the Washington Metropolitan Region. National Capital Region Transportation Planning Board. December 31, 2003. Figures are for the Washington, DC-MD-VA Metropolitan Statistical Area, as shown in Figure 5-1.

Table 5-2: Summary of Regional Work Travel Forecasts 2005-2030
(in Thousands)

	2005	2015	2025	2030	Absolute Change 2005-2030	Percent Change 2005-2030
All Person Work Trips	3,390	3,820	4,130	4,210	820	24%
Auto Person Trips	2,820	3,130	3,390	3,470	650	23%
Auto Driver Trips	2,510	2,770	3,000	3,080	570	23%
Auto Passenger Trips	310	360	390	390	80	26%
Vehicle Trips on HOV Facilities	29	34	35	33	4	14%
Average Auto Occupancy*	1.12	1.13	1.13	1.13	0.01	1%
Transit Work Trips	570	690	740	740	170	30%
Transit Share of Work Trips	17%	18%	18%	18%	1	--
Transit Share in District Core	46%	50%	51%	51%	5	--

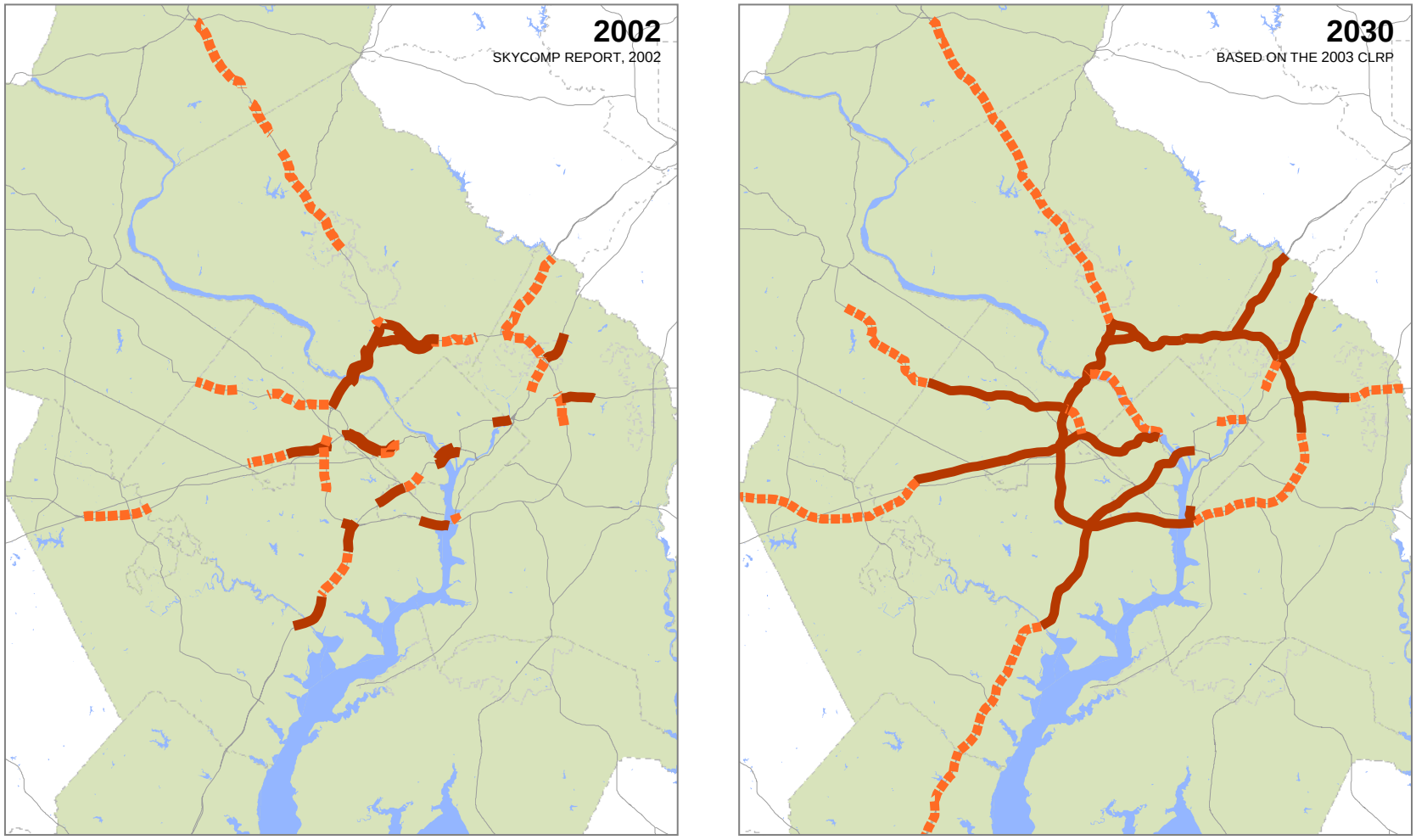
*Figures are shown in total and are not in thousands.
Source: Air Quality Conformity Determination of the Year 2003 Constrained Long-Range Plan and the FY2004-2009 Transportation Improvement Plan for the Washington Metropolitan Region. National Capital Region Transportation Planning Board. December 31, 2003. Figures are for the Washington, DC-MD-VA Metropolitan Statistical Area, as shown in Figure 5-1.

Levels of Highway Congestion

Figure 5-4 displays the expected changes in evening peak-hour highway congestion by 2030 based on the improvements in the CLRP. An analysis of forecast levels of congestion without the CLRP improvements is not available. The 2002 levels are based on aerial photo-surveys of highway traffic. The expected congestion levels for 2030 are based on travel demand forecasts. Severe stop and go congestion is expected to be prevalent throughout the entire region in 2030, not just in isolated areas.

While travel forecasts and simulations of the transportation system predict more congestion in the future, it is less clear how people during the next 25 years will adjust to those conditions. As the durations of the daily peak congestion periods spread, increasing numbers of commuters and others may change their times of departure, seeking less congested travel times. Employees may be more likely to try telecommuting. Automobile users may be more likely to carpool or ride transit. As congestion becomes more pervasive, people may be more likely to combine trips with different purposes and take shorter trips in order to avoid frustrating delays. People also might be more likely to seek jobs closer to where they live, or conversely, to seek housing closer to where they work.

Figure 5-4: Changes in Evening Highway Congestion 2002 - 2030



SUMMARY OF THE EXPECTED PERFORMANCE OF THE PLAN

The financially constrained plan's predicted performance between 2005 and 2030 can be summarized in the following points:

- Vehicle ownership will increase at a faster rate than population, employment and vehicle miles of travel (VMT);
- VMT will increase 32 percent, whereas capacity is planned to expand only 12 percent (as measured in roadway lane-miles);
- Over 80 percent of commuters are forecast to travel by single-occupancy vehicle in both 2005 and 2030, and this mode share increases for the more frequent non-work related trips;
- Stop-and-go conditions will be prevalent on most of the region's highways by 2030;
- Average auto occupancy will remain relatively steady—1.12 in 2005 and 1.13 in 2030;
- Both transit trips for work and non-work purposes will increase by approximately 30 percent, and Metrorail miles will expand by 24 percent; and
- In 2030, transit trips will account for about 17 percent of all work trips, and over half of the work trips in the District of Columbia.

THE PLAN'S PERFORMANCE IN RELATION TO THE VISION POLICY GOALS AND OBJECTIVES

The TPB Vision is a useful reference point and measuring stick. In contrast to the financially limited CLRP, the Vision considered creative approaches to the region's transportation future without being limited to projects and programs that can be paid for with existing funds. Looking at the Vision's policy goals and objectives can provide the region with important information on shortcomings of the CLRP in relation to regional goals. What are the shortcomings of the financially constrained plan? What areas need specific attention the next time the CLRP is updated?

The TPB Vision is also a symbol of regional consensus. The TPB consists of multiple levels of agencies and officials within varying political, institutional, and geographic entities. The TPB Vision reflects the views, ideas, and goals of the region as a whole and reflects the collective sense of how the region wants the transportation system to develop and perform. Along with providing a framework for the development of the transportation system, the Vision also sets goals for the environment, metropolitan development patterns, and the economy. Because the Vision extends beyond transportation, not all of the TPB Vision's policy goals can be assessed with travel demand forecasts.

The following assessments of each Vision goal provides information on where we are today, what the plan does by 2030, and challenges to be addressed in future plan updates. Travel demand and land use activity forecasts are the main sources of information used to describe the plan's performance. The Regional Mobility and Accessibility Study is still underway and will provide supplemental information on the 2003 CLRP's performance in relation to the Vision[2].

[2] For information on the study and preliminary results, please contact TPB staff at (202) 962-3311.

Policy Goal #1

The Washington metropolitan region's transportation system will provide reasonable access at reasonable cost to everyone in the region.

Objectives:

(1) A comprehensive range of choices for users of the region's transportation system.

(2) Accurate, up-to-date and understandable transportation system information that is available to everyone in real time, and is user-friendly for first-time visitor and residents, regardless of mode of travel or language of the traveler.

(3) Fair and reasonable opportunities for access and mobility for persons with special accessibility needs.

(4) Convenient bicycle and pedestrian access.

Where We Are Today

The region currently has a comprehensive transportation system primarily focused on access to the regional core. Many highways and roads are radially orientated; the Capital Beltway is the major highway providing circumferential access. Currently, there are approximately 15,700 miles of roadway and 190 miles of high-occupancy vehicle (HOV) lanes. The transit system, comprised of local bus, Metro bus, Metrorail, and commuter rail, is also designed to serve the regional core and exists primarily in radial corridors. The 103-mile Metro system was recently completed with the opening of the Green line extension to Branch Avenue. Today, 17 percent of work trips are made by transit and 80 percent by low-occupancy vehicle auto. There are approximately 700 miles of trails and on-street bikeways in the region. From the 1994 Household Travel Survey, we know that over one million pedestrian trips are made everyday, accounting for 8 percent of all trips. The region's 77,000 average daily bicycle trips account for 0.7 percent of all trips.

Freeway Congestion

The TPB conducts a study of freeway congestion every three years. The 2002 study offered hope that major bottlenecks can be relieved with relatively modest road improvements. Using aerial photography the study showed that since 1999, traffic flow increased at several congestion points after improvements occurred. However, in a number of other locations, the study supported the pervasive view that the region's highways are getting more congested.[3]

[2]Traffic Quality in the Metropolitan Washington D.C. Planning Region (Spring 1996, 1999, 2002). Prepared for the Metropolitan Washington Council of Governments by Skycomp.

"Access for All"

The TPB established the Access for All Advisory (AFA) Committee in 2001 to create an on-going dialogue with communities not typically included in the transportation planning process, including low-income populations, minority communities, and people with disabilities. The committee's name comes from the first policy goal in the Vision and advises the TPB on projects, programs, and issues that impact these population groups. The committee's first report to the TPB recommended improvements in transit information for people with limited English proficiency and urged transportation decision makers to provide adequate funding for bus services. The committee also requested improvements and expansions in existing transportation programs, including MetroAccess service for persons with disabilities, WMATA's Access to Jobs program, and pedestrian safety programs throughout the region. As a result of the committee's efforts, improved transit information is now available in languages other than English. The committee continues to call attention to the need for improved transit and pedestrian access for people with disabilities. The AFA provided comments on the 2003 CLRP which can be found in Appendix B.

Real-Time Traveler Information

Several current activities relate to Objective 2: *Accurate, up-to-date and understandable transportation system information that is available to everyone in real time, and is user-friendly for first-time visitors and residents, regardless of mode of travel or language of the traveler*. The Internet has made transportation information more available to people in real-time. A variety of websites provide real-time travel conditions and incident information including the websites for the Washington Post and transportation agencies such as VDOT, MDOT, DDOT and WMATA. Each Metrobus schedule can be viewed online. Transit information from WMATA by telephone is available in several different languages. Metrorail has electronic messaging signs in most stations that provide real-time information on train arrivals. "E-Alerts", e-mails on the status of the Metrorail sytem, are provided to riders who sign up for the service. Some bus shelters in Montgomery County and the City of Fairfax offer the same type of real-time information with electronic signs. Interactive kiosks are available at malls and other public places throughout the region that provide online traffic, transit, and weather information.

There are other recent good examples of improved and effective communication of travel information. The Downtown D.C. Business Improvement District (BID), with assistance from the District Department of Transportation (DDOT) and WMATA, developed large bus route maps that have been posted in approximately 300 bus shelters in downtown D.C. The maps are customized for each stop with "You are here" markers, and highlight routes that serve the specific bus stop. Another example of improved transit information is the free distribution of Metrobus route maps from WMATA, which previously charged for the maps.

Pedestrian and Bicycle Safety

Regional leaders launched a public education and outreach campaign in October 2002 to reduce pedestrian deaths and injuries throughout the Washington region. With pedestrian fatalities outnumbering homicides in many jurisdictions, leaders vowed to work together on a multi-year effort to heighten awareness about pedestrian safety and change the behavior of drivers. The campaign, titled "Street Smart," was aimed at young drivers who are involved in the majority of pedestrian collisions. The campaign featured Metrorail and Metrobus ads, radio ads, television public service announcements, and posters. Campaign materials urged

drivers to “Imagine the Impact” of traffic accidents on the lives and families of both pedestrians and drivers. A special task force of the TPB’s Bicycle and Pedestrian Subcommittee developed the regional concept for the campaign and launched it at a news conference. An evaluation of the campaign’s effectiveness reported an increased awareness of messages featured in the campaign. One message reported to be particularly memorable was “Every seven minutes a pedestrian is injured or killed.” [4]

What the CLRP Does by 2030

Transportation system users already have a *comprehensive range of choices* (Objective 1) including highways, arterial roads, Metrorail, Metrobus, local bus, commuter rail, and an extensive HOV system. The 2003 CLRP further expands these options. The Metrorail system will expand by 24 percent, from 106 to 131 miles by 2030. The District of Columbia plans to add a light rail demonstration line in Anacostia running 2.7 miles between Pennsylvania Avenue SE and Bolling Air Force Base by 2005 as part of a first step in a wider light rail system. New Metrorail stations are under development for New York Avenue in the District of Columbia and Potomac Yards in Alexandria. The most significant transit improvement is a 23.1 mile Metrorail extension from East Falls Church to Dulles airport, with four stations in Tysons Corner. Other transit improvements include the Corridor Cities Transitway from the Shady Grove Metro station to COMSAT, new Metrorail stations at Potomac Yards and New York Avenue, the Bi-County Transitway between Bethesda and Silver Spring, and the Anacostia Light Rail line. One hundred and ninety more miles of high-occupancy vehicle (HOV) lanes will be added to the region. Road miles are planned to increase 12 percent from 15,700 miles to 17,600 miles by 2030.[5] Bike and pedestrian accommodations are included in 41 percent of the projects in the plan and 7 percent are primarily bike and pedestrian projects.

*Accurate, up-to-date and understandable transportation system information (*Objective 2) can be expected to improve over the life of the plan. Technological improvements will make readily available real-time information on transportation even more accessible.

Objective 3 states *fair and reasonable opportunities for access and mobility for persons with special accessibility needs.* In support of this objective, the Access for All Advisory Committee has advocated for improvements to the fixed transit and paratransit systems.[6] As the current population ages, demand will increase for improved transit and pedestrian access and improvements that meet and exceed the American with Disabilities Act (ADA) requirements. It should be noted that congestion of the region's roadways would limit access and mobility for everyone, including bus users and those with special accessibility needs.

Convenient bicycle and pedestrian access (Objective 4) will be improved in the plan. Seven percent of the transportation improvements in the plan are primarily bicycle and/or pedestrian projects—or 58 of the 782 projects in the plan. Although the travel demand model does not provide forecasts on travel by bicycle and walking if it is not connected to transit access, bicycling and walking will likely increase in certain areas due to the implementation of specific projects and through the inclusion of bicycle and pedestrian

[4] The Street Smart 2002 Pedestrian Safety Awareness Campaign report can be found online at <http://www.mwcog.org/transportation>.
[5] Lane miles include arterials and freeways.
[6] To view the AFA recommendations, go to <http://www.mwcog.org/transportation>, and search for “2003 AFA Report.”

facilities in other transportation improvements. However, as roads and intersections are expanded for motor vehicles, bicycle and pedestrian access often decreases. The challenge is to design transportation improvements that improve, or at least maintain, bicycle and pedestrian access. Another major factor affecting pedestrian and bicycle access is land use and urban design. More compact areas with a mix of land uses have higher levels of bicycling and walking than areas with destinations far apart and separated by busy highways.

Most of the greenway and circulation projects identified in the TPB's *Priorities 2000*[7] reports (see page 4-27) under the federal Transportation and Community and System Preservation (TCSP) Pilot Program are bicycle and pedestrian oriented. Through the distribution of these reports, the TPB hopes to encourage implementation of these projects and others like them.

Challenges to Be Addressed in Future Plan Updates

The review of the 2003 CLRP against Policy Goal 1 indicates that while the region is making progress towards this goal, there are remaining challenges that need to be addressed.

The high levels of congestion on both the transit and highway system are being examined in more detail under the Regional Mobility and Accessibility Study. The need for additional funding to accommodate the demand for transit ridership is expected to be a priority in 2005, along with funding for other critical transportation needs.

Providing "access to all" at a "reasonable cost" is a remaining challenge for future plan updates. A particular challenge is maintaining and expanding transit services for people with disabilities given WMATA's short-term budget problems. Transit information should be widely available to transit-dependant populations and limited English speakers who do not have convenient Internet access. Effective written materials should use simple language and many visuals, and rely more on universal symbols and images rather than words. The effects of transit fare policies on transit-dependant populations, who tend to be low-income, also needs to be considered in future plan updates.

In reviewing draft 2003 CLRP, the AFA Committee observed that the transit improvements appear to be serving more suburban areas, rather than low-income communities that may be more transit dependant and concentrated in the inner part of the region.[8] In addition, the AFA raised concerns about the lack of planned transit improvements or studies in Southern Prince George's County. Finally, although the expansion of the Metrorail system is very important, the AFA stressed that bus service levels should be maintained for current transit-dependant customers.

Finally, investing in bicycle and pedestrian facilities and improvements to encourage more non-motorized travel, increase safety conditions, and provide better access to transit by people with disabilities is a continuing challenge for the region.

[7] To view the reports, go to <http://www.mwcog.org/transportation/>, and then "Featured Publications".
[8] The AFA comments on the 2003 CLRP are included in Appendix B.

Policy Goal #2

The Washington metropolitan region will develop, implement, and maintain an interconnected transportation system that enhances quality of life and promotes a strong and growing economy throughout the entire region, including a healthy regional core and dynamic regional activity centers with a mix of jobs, housing, and services in a walkable environment.

Objectives:

(1) Economically strong regional core.

(2) Economically strong regional activity centers with a mix of jobs, housing, services, and recreation in a walkable environment.

(3) A web of multi-modal transportation connections that provide convenient access (including improved mobility with reduced reliance on the automobile) between the regional core and regional activity centers, reinforcing existing transportation connections and creating new connections where appropriate.

(4) Improved internal mobility with reduced reliance on the automobile within the regional core and within regional activity centers.

(5) Efficient and safe movement of people, goods, and information, with minimal adverse impacts on residents and the environment.

Where We Are Today

The Washington metropolitan region has a well-developed transportation system that is radially oriented towards moving people and goods to and from the core. Both the transit and highway systems tend to connect activity centers along radial corridors with the exception of the circumferential connections that the Beltway provides.

The region is economically prosperous and has experienced significant increases in population and employment in the last two decades. The regional core, which includes the District of Columbia, the City of Alexandria, and Arlington County, continues to have large concentrations of employment and residents. The District of Columbia continues to gain employment and is thriving in many respects, but has decreased in population in the last decade.

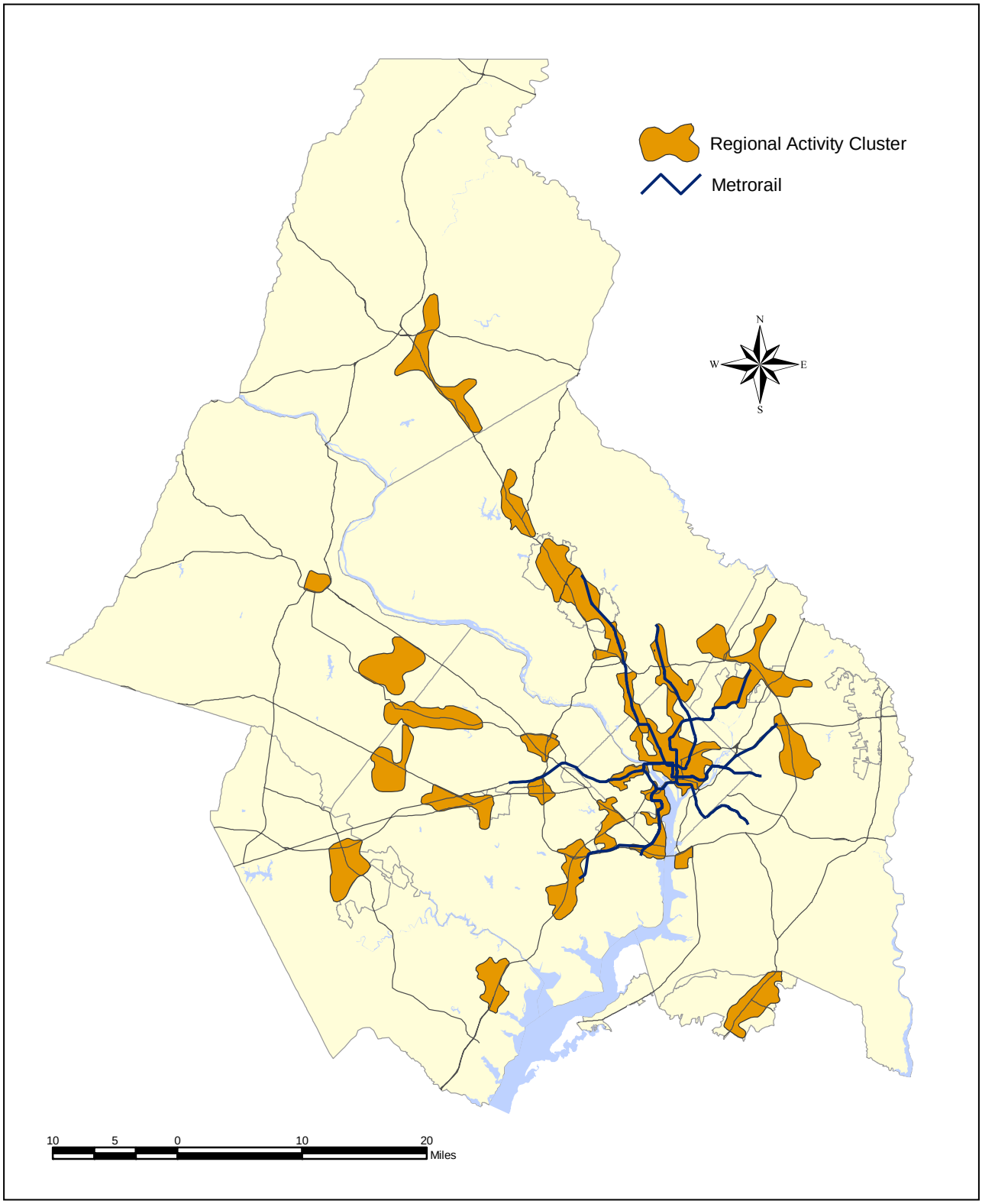
Multi-modal connections are greatest in the regional core and within regional activity centers. Transit use is highest in these areas, although regional activity centers in suburban locations tend to have a higher reliance on the automobile.

Fifty-eight regional activity centers were defined in a joint effort by the COG Board of Directors and the TPB based on current local government growth forecasts and categorized according to similar employment, residential, and growth pattern characteristics. Recognizing that significant concentrations of residential and commercial development exist

immediately adjacent to the tightly defined activity centers along the region's transportation facilities, 24 "activity center corridors" of development were created. Each corridor, referred to as a "cluster," contains several activity centers. The locations of regional activity clusters are shown in Figure 5-5. A map of the regional activity centers and other maps and information can be found in the Regional Activity Centers publication on-line at <http://www.mwcog.org/planning/planning/activitycenters>.

Another activity that supported Policy Goal 2 was the development of a multimedia CD-ROM and Web site by COG to inform and educate elected officials, civic groups, the development community, and citizens about the land use and transportation challenges currently facing the region. The accepted principles of "Smart Growth" are candidly introduced and discussed in the context of the varied and distinct communities across the region. The CD-ROM highlights the responsibilities and successes of local government policies while acknowledging the common concerns which elected officials and citizens encounter (e.g., neighborhood opposition, traffic, loss of open space, increased density, etc.). The CD and accompanying Web site contain numerous examples of local best management or best development practices that exemplify the ideas of "choices, connections, and collaboration." In addition, the discussion focuses on developing partnerships that engage all stakeholders, aim to minimize conflicts, and result in the highest quality growth. For more information see <http://www.mwcog.org/planning/planning/smartgrowth>.

Figure 5-5: Regional Activity Clusters



What the CLRP Does by 2030

The plan addresses Policy Goal 2 in several ways. First, the plan will support local planning efforts that promote concentrated development along existing transportation corridors and within regional activity centers. Highway improvements in the plan are almost exclusively widenings of existing highways. Second, the projects and programs in the plan emphasize maintaining existing transit and highway corridors as opposed to new construction in new corridors, which is one way of using transportation investment to encourage an economically strong regional core and regional activity centers. Third, numerous improvements in the plan contribute to a web of multi-modal connections between the core and activity centers. These improvements include Dulles Rail, High-Occupancy Vehicle (HOV) lanes on the Virginia portion of the Capital Beltway, the Bi-County Transitway between Bethesda and Silver Spring, the Anacostia Light Rail, and improvements to circumferential corridors such as US 301 and the Tri-County Parkway.[9] All of these projects reinforce existing transportation connections between activity centers.

Assessment of the Objectives

Employment and population growth forecasts are indicators of a strong economy, which is part of Objective 1 (*Economically strong regional core)* and Objective 2 (*Economically strong regional activity centers).* Employment is expected to increase by 34 percent by 2030 and population is expected to increase 23 percent. The regional core is expected to remain economically strong, and is forecast to account for 31 percent of the region's employment and 18 percent of the region's population.

Objective 2 refers to a mix of uses in the regional activity centers (*activity centers with a mix of jobs, housing, services, and recreation in a walkable environment).*

The 24 regional activity clusters comprise about 455 square miles (13 percent) of the region's total land area and contain 71 percent of the region's jobs and 38 percent of the region's households. The clusters include 60 out of the 83 total current Metrorail stations in the region. Fourteen activity clusters currently have no Metrorail station.

Figures 5-6 and 5-7 show the percent of regional growth in employment and households that will occur within regional activity clusters between 2005 and 2030. For some jurisdictions, such as the District of Columbia, Arlington County in Virginia, and Montgomery County in Maryland, a large majority of the growth will occur within regional activity clusters. For other jurisdictions, such as Prince William County in Virginia and Prince George's County in Maryland, much of the growth will occur outside regional activity clusters. Across the whole region, activity clusters will capture 70 percent of the region's employment growth and 36 percent of the region's household growth by 2030. This means that the percent of jobs and households contained within regional activity clusters will remain constant over the next 25 years.

It should be noted that the regional activity *clusters* contain significant concentrations of residential and commercial development, but the 58 activity *centers* include less residential development, and therefore the percentage of household growth captured by the regional activity *centers* would be less than the *clusters*.

[9] See Chapter 4 for more information about these and other 2003 CLRP projects.

Figure 5-6: Percent of Employment Growth between 2005 and 2030 Occurring in Activity Clusters

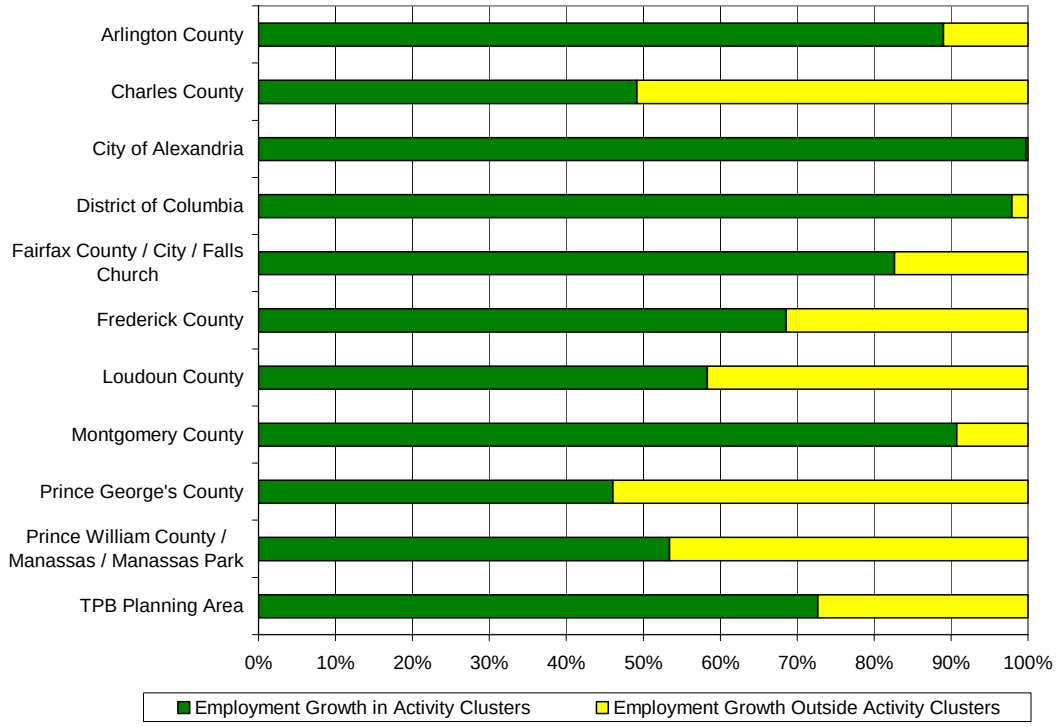
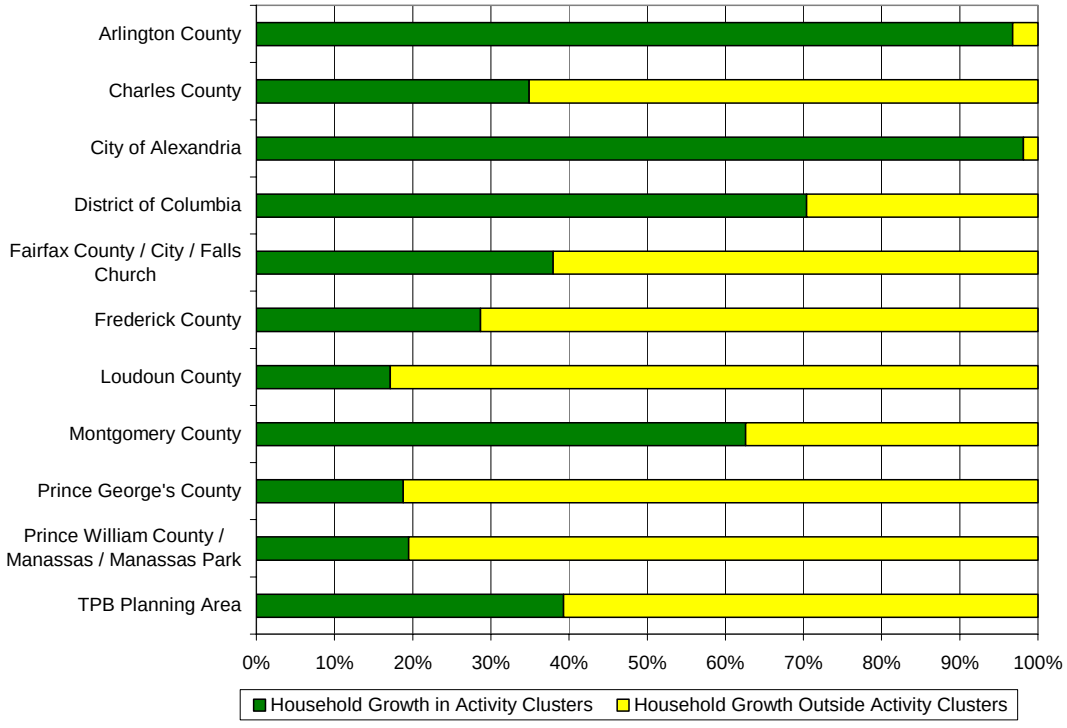


Figure 5-7: Percent of Household Growth between 2005 and 2030 Occurring in Activity Clusters



Round 6.3 of the Cooperative Forecasts[10] provide some information on the mix between jobs and households in the clusters over the next 25 years. As shown in Table 5-3, the 2030 jobs-to-households ratio in the activity clusters range from 1.2 to 7.8. All clusters have a higher concentration of employment than housing.

Table 5-3: Jobs to Households Ratio in Activity Clusters, 2030

Activity Cluster	Jobs 2030	Households 2030	2030 Jobs to Households Ratio
Bailey's Crossroads Area	66,876	57,666	1.2
Bethesda / Friendship Heights	112,867	32,536	3.5
Downtown Washington	733,482	186,488	4.0
Dulles Corridor	157,984	30,243	5.2
Dulles North Area	82,027	15,620	5.3
Dulles South Area	76,085	9,813	7.8
Fairfax Center / City of Fairfax / GMU	93,646	36,331	2.6
Frederick Area	112,247	38,228	3.0
Gaithersburg / Life Sciences Center	102,630	36,675	2.8
Germantown / Clarksburg	49,754	26,018	1.9
Greenbelt / College Park / White Oak Area	151,682	49,086	3.1
I-95/Springfield Area	74,457	20,021	3.7
Leesburg Area	29,088	19,360	1.5
Manassas Area	65,102	25,433	2.6
Merrifield / Dunn Loring	60,285	19,844	3.0
National Harbor	18,498	4,926	3.8
New Carrollton / Largo Area	62,243	23,164	2.7
Pentagon / Reagan Airport / Alexandria Area	232,714	56,978	4.1
Potomac Mills Area	40,879	21,058	1.9
Rockville / North Bethesda	209,884	38,201	5.5
Rosslyn / Ballston Corridor	127,143	41,407	3.1
Silver Spring / Takoma Park / Wheaton	87,825	47,651	1.8
Tysons Corner	140,405	24,401	5.8
Waldorf Commercial	33,939	28,403	1.2
All Clusters	**2,921,742**	**889,551**	**3.3**
Washington, DC-MD-VA MSA	**4,138,300**	**2,352,300**	**1.8**

[10] The Cooperative Forecasts are produced by each local jurisdiction and approved by the COG Board. The forecasts are updated annually.

A web of multi-modal transportation connections that provide convenient access (including improved mobility with reduced reliance on the automobile) between the regional core and regional activity centers, reinforcing existing transportation connections and creating new connections where appropriate is Objective 3. The majority of the projects in the plan reinforce existing transportation connections by upgrading, improving, extending, or widening routes. The region's transportation system was built to serve demand to and from the core with radial corridors. Travel patterns are changing with less radial-oriented travel and more travel between suburbs.

Objective 4 calls for *Improved internal mobility with reduced reliance on the automobile within the regional core and within regional activity centers.* In both 2005 and 2030, approximately 17 percent of commuters are expected to use transit. The transit mode share for the regional core and within some activity centers is much higher. For example, in D.C. transit is forecast to account for over 50 percent of all work trips in 2030. The Regional Mobility and Accessibility study will evaluate in more detail the jobs-housing mix, multi-modal connections, and travel mode shares within the regional activity centers.

A TPB Advisory Committee was established in 2000 under the Transportation and Community and System Preservation (TCSP) grant to assist in the implementation of circulation systems within the regional core and regional activity centers. This committee recommended nine circulation system projects, such as the Downtown DC circulator, a pedestrian plaza over Rockville Pike, and improving pedestrian access in Tysons Corner.

Efficient and safe movement of people, goods, and information, with minimal adverse impacts on residents and the environment is Objective 5. The growth of e-commerce has led to a boom in the home delivery of goods ordered online—everything from garden tools to groceries. The region must be ready to handle the emerging demands of the freight industry. The efficient movement of information has become a growing issue in the region. The demands of information technology have caused conflicts over adding cable lines in and around streets in the region and cell phone towers within existing rights-of-way. Projects in the plan that upgrade key transportation routes to move both people and goods help address this objective.

Challenges to Be Addressed in Future Plan Updates

While the region has made progress toward developing and maintaining *an interconnected transportation system…including a healthy regional core and dynamic regional activity centers*, (Policy Goal 2) there are significant challenges for future plan updates. A major challenge is securing adequate funding to maintain and develop an interconnected transportation system, which is discussed under Goal 7 in this chapter. Another challenge is developing a consensus regarding how to best develop *a web of multi-modal transportation connections* given the opposing views on new highways, such as the Intercounty Connector.

The Regional Mobility and Accessibility study will review how to provide better connections between the transportation corridors and the regional activity centers, including additional highway and transit circumferential facilities and capacity, such as Potomac River crossings, and ways to increase transit and high-occupancy vehicle (HOV) travel mode shares.

Policy Goal #3

The Washington metropolitan region's transportation system will give priority to management, performance, maintenance, and safety of all modes and facilities.

Objectives:

(1) Adequate maintenance, preservation, rehabilitation, and replacement of existing infrastructure.

(2) Enhanced system safety through effective enforcement of all traffic laws and motor carrier safety regulations, achievement of national targets for seatbelt use, and appropriate safety features in facility design.

Where We Are Today

Throughout the region, various transportation agencies have placed cameras at key intersections to help prevent red-light running, coordinate seatbelt campaigns, operate motorist assistance patrols, implement programs to enforce speed limits, and educate the public on safety issues like drinking and driving. While such programs are effective, safety issues also need to be addressed at the regional level. Addressing safety at the regional level is challenging because three jurisdictions are involved—the District of Columbia, Maryland, and Virginia—which have different safety and traffic regulations and laws.

A TPB effort to enhance pedestrian and bicycle safety was under Goal 1, but is also relevant for Goal 3. The "Street Smart" campaign conducted in Fall of 2002 was aimed at young drivers who are involved in the majority of pedestrian collisions. The campaign featured Metrorail and Metrobus ads, radio ads, television public service announcements, and posters. The campaign materials urged drivers to "Imagine the Impact" of traffic accidents on the lives and families of both pedestrians and drivers.[11]

What the CLRP Does by 2030

Objective 1 calls for *adequate maintenance, preservation, rehabilitation, and replacement of existing infrastructure.* The region will spend approximately $93.3 billion on the plan over the next 25 years. Seventy-seven percent will be spent on operating and preserving the transit and highway system. Why do operations and maintenance claim the lion's share of available resources? In part, this is the price of yesterday's successful construction programs. The major facilities built during the past 40 years are aging and need upkeep. Older transportation systems cost more to maintain, just as older homes and cars do. Highway and transit operating costs are also significant and growing, and transit operations are only partially offset by passenger fares. **Transit rehabilitation and maintenance is a growing unmet need in this region. The CLRP does not currently provide a reliable source of funding for adequate transit, highway and bridge maintenance and rehabilitation.**

[11] The Street Smart 2002 Pedestrian Safety Awareness Campaign report can be found on-line at <http://www.mwcog.org/transportation>.

Objective 2 focuses on safety issues by calling for *enhanced system safety through effective enforcement of all traffic laws and motor carrier safety regulations, achievement of national targets for seatbelt use, and appropriate safety features in facility design.* Transportation agencies in the region have various programs to address safety. Safety is the first priority in all transportation improvements. Technology-related safety enhancements offer opportunities for better highway lighting and visibility, crash avoidance, bicycle and pedestrian safety, railroad grade crossing camera enforcement systems, and safety-related law enforcement.

Challenges to Be Addressed in Future Plan Updates

While the operating agencies within the District of Columbia, Maryland, and Virginia have programs and policies in place that give *priority to management, performance, maintenance, and safety of all modes and facilities*, the region as a whole can do more to address system-wide and inter-jurisdictional safety issues.

Management and operations will be a focus area for the TPB in the immediate future, with an emphasis on safety. Safety performance measures such as traffic fatalities, crashes and injuries by mode will be useful to the region in better understanding trends and influencing safety programs and policies. The TPB can play a role in bringing together the safety data already collected by the operating agencies to look at regional trends. Understanding the trends is the first step towards better *management, performance, maintenance, and safety of all modes and facilities*. Continuing safety efforts, such as the Street Smart campaign to educate pedestrians and drivers, will help improve bicycle and pedestrian safety.

Future technology will likely offer ways to improve both management of the existing system and safety. Intelligent Transportation System (ITS) improvements will help the region better manage the system to enhance system performance, which is the subject of Policy Goal 4. Technological safety improvements to cars, roads, buses, rail, and pedestrian facilities will likely enhance system safety in the future.

A remaining challenge is finding reliable sources of funding to rehabilitate and maintain the region's transportation system adequately. The TPB will continue to discuss funding issues and raise awareness of the funding shortfalls at the federal, state and local levels.

Policy Goal #4

The Washington metropolitan region will use the best available technology to maximize system effectiveness.

Objectives:

(1) Reduction in regional congestion and congestion-related incidents.

(2) A user-friendly, seamless system with on-demand, timely travel information to users, and a simplified method of payment.

(3) Improved management of weather emergencies and major incidents.

(4) Improved reliability and predictability of operating conditions on the region's transportation facilities.

(5) Full utilization of future advancements in transportation technology.

Where We Are Today

Reducing crashes, managing congestion, making transit more user-friendly, and providing timely, accurate information on which to base travel decisions have great potential to improve the overall quality of life in the region. The application of emerging computer, telecommunications, and other electronic technologies to transportation systems is referred to as "Intelligent Transportation Systems," or ITS. These technologies have demonstrated impacts on maximizing transportation system effectiveness, and hold promise in the future for more improvements. The latest technology is being incorporated and utilized by traffic management centers in the Washington region.

More and better information is provided to the public through agency websites (such as MDOT, VDOT, and Montgomery County websites). Variable message signs on the region's freeways provide information to motorists at critical locations. Local bus providers, such as Montgomery County and the City of Fairfax, use Global Positioning System (GPS) technology to tell passengers exactly when their bus will arrive. In addition, WMATA has installed changeable message signs in the Metro system that will alert passengers of the arrival of the next train. WMATA's SmarTrip electronic payment system is now available on several bus lines.

Further examples of how the region's transportation agencies and private sector partners are utilizing the Internet and other technology more effectively than ever include the following:

- WMATA's Internet-based "Ride Guide" is one of the most comprehensive and user-friendly automated transit trip-planning systems in the country. The technology also supports WMATA's telephone information line.

- Traffic cameras on major roadways are now easily accessible to the public on major media outlets' websites.
- Increasing use of text messaging systems now allows transportation customers to receive pager or e-mail alerts regarding, for example, transit service disruptions.
- An increased commitment to optimize the timing of the region's traffic signals through the use of the latest hardware and software technologies aids both congestion reduction and air quality.

In order to maximize the benefits of transportation technology, the TPB has promoted regional coordination of planning and projects through the Management, Operations and Intelligent Transportation Systems (MOITS) Policy & Technical Task Forces. These two task forces—focusing on policy and technical coordination—meet regularly to discuss coordination and to share experiences about ways in which transportation technology can be deployed to improve congestion, safety, maintenance and system efficiency. For more information on the TPB task forces, go to <http://www.mwcog.org/transportation/committee/>.

Management and operations took on a new urgency in the aftermath of the September 11, 2001 attacks. The TPB quickly began working on a transportation emergency management plan for the region. The first step was to implement improvements in inter-jurisdictional communications and coordination. The solution was developing a telephone/radio conference call protocol, supported by e-mail and electronic text messaging systems, for coordinated decision-making. In the event of future emergencies, the lead agency in the area where the incident occurred would initiate a conference call with other key agencies throughout the region.

Local and state officials and agency representatives have worked to enhance transportation components of the Regional Emergency Coordination Plan (RECP).[12] Approved by the COG Board on September 11, 2002, the RECP included a transportation component and a transportation evacuation coordination annex, which were largely developed through the TPB's MOITS Task Forces and an Emergency Transportation Work Group. The Emergency Transportation Work Group conducted workshops to study different potential emergency situations, such as region-wide evacuation, shelter-in-place, or widespread power failure.

What the CLRP Does by 2030

Many expansion projects in the plan are expected to take advantage of the best available technology, and there is currently a significant level of funding for transportation technologies. Because most technologies are scalable (e.g., more cameras could cover more locations for traffic management), additional deployments could have a nearly immediate impact on traffic congestion and pollution in the region.

Objective 1 calls for *Reduction in regional congestion and congestion-related incidents*. However, figure 5-4 indicates that stop-and-go conditions are expected on the majority of the region's highways by 2030. Additional congestion-related incidents can be expected with higher levels of congestion.

[12] The "Partners in Preparedness: The Regional Emergency Coordination Plan at Work" report published in 2004 can be viewed at <www.mwocg.org>.

In an era of quickly advancing technology, the region must ensure that public capabilities are in place to enable travelers to take advantage of the latest technology, as Objectives 2 through 5 indicate. TPB's MOITS Task Forces are providing regional coordination to help take advantage of the best available technology.

Challenges to Be Addressed in Future Plan Updates

The Washington region has been highly successful in deploying transportation technology to maximize system effectiveness. However, congestion is anticipated to worsen over the next 25 years, and alleviating congestion through technology will continue to be a challenge. Other remaining challenges being addressed by the MOITS Task Forces include improving cooperation and coordination between multiple jurisdictions for full utilization of advanced technology.

Another challenge that is central to achieving many of the Vision's policy goals is the need for additional funding. Reliable sources of funding are needed to maintain the technological systems already in place. Additional funding is also needed to further maximize system effectiveness in areas such as safety and incident management systems, traffic detection, management and information systems, Automatic Vehicle Location (AVL) systems for buses, traffic signal systems, and electronic payment systems.

Finally, a critical remaining challenge is to continue to strengthen emergency response, communication, and coordination as the region grapples with increased security threats and other incidences. Public information improvements are essential. Technical and operational improvements are needed to ensure that transportation agencies that monitor roadway and transit systems are ready to initiate and shepherd regional communications and coordination during an incident. These improvements will require additional money. The pending Congressional reauthorization of the federal surface transportation programs is expected to provide new funding and authority for regional incident management improvements.

Policy Goal #5

The Washington metropolitan region will plan and develop a transportation system that enhances and protects the region's natural environmental quality, cultural and historic resources, and communities.

Objectives:

(1) The Washington region becomes a model for protection and enhancement of natural, cultural, and historical resources.

(2) Reduction in reliance on the single-occupant vehicle (SOV) by offering attractive, efficient, and affordable alternatives.

(3) Increased transit, ridesharing, bicycling, and walking mode shares.

(4) Compliance with federal clean air, clean water, and energy conservation requirements, including reductions in 1999 levels of mobile source pollutants.

(5) Reduction of per capita vehicle miles traveled (VMT).

(6) Protection of sensitive environmental, cultural, historical, and neighborhood locations from negative traffic and developmental impacts through focusing of development in selected areas consistent with adopted jurisdictional plans.

Where We Are Today

Transportation dollars have been used effectively throughout the region to *enhance and protect the region's natural environmental quality, cultural and historical resources, and communities.* Examples of this include the Alexandria train station, the George Washington Memorial Parkway, and the Baltimore Washington Parkway.

Across the region, both residents and local governments are recognizing the value of integrating green space into communities. Momentum is building as jurisdictions, both small and large, are acquiring lands and opening them to the public. The Washington Metropolitan area has over 75 miles of existing greenways or trails. Significant existing regional greenways and trails include the C&O Canal National Historic Park, Mount Vernon Greenway, Washington and Old Dominion (W&OD) Trail, Rock Creek Greenway, Capital Crescent Trail, Anacostia Tributary Trail System, Appalachian Trail Greenway, Cactoctin-Gambrill Greenway, Bullrun Occoquan Greenway, and the Patuxent River Greenway.

Over the past decade, the region has made tremendous strides in cleaning up the air. The question now is whether the region is making progress fast enough to meet federal requirements. Under the Clean Air Act, the region is classified as a "non-attainment area" for federal standards for ground level ozone. Sometimes called smog, ozone is formed on hot summer days when nitrogen oxides (NOx) and volatile organic compounds (VOCs) are combined in sunlight. Motor vehicles emit VOCs and NOx, but power plants and other sources also emit these pollutants.

The Clean Air Act requires states to develop State Implementation Plans (SIPs) laying out steps to "attain" federal air quality standards. In our multi-state region, the Metropolitan Washington Air Quality Committee (MWAQC) is responsible for developing a regional air quality plan that contributes to the three SIPs produced by the District of Columbia, Virginia and Maryland. Like the TPB, MWAQC is an independent body at the Council of Governments including local and state representatives from across the region. The Washington region must attain these standards by 2005.[13]

One of ways in which the TPB and the plan promote the use of alternative modes to the single-occupancy vehicle is through the Commuter Connections program. Administered through the TPB, the program provides services designed to reduce congestion and improve air quality in the short-term. Services include ridematching, the "Guaranteed Ride Home" program, telework resource centers, and assistance for employers in setting up commuter programs. Commuter assistance programs and advertising are having an impact on how people travel, according to the TPB's 2001 State of the Commute Survey. In the survey, 55 percent of respondents said they had seen, heard, or read advertising for ridesharing, HOV lanes, or telecommuting in the last six months. More than a quarter of respondents said they would consider alternative commuting because of this advertising.

What the CLRP Does by 2030

Environmental enhancement and protection is challenging at the regional level because many of the decisions that affect the environment are made at the local level. Local comprehensive land-use plans and transportation agency plans guide these decisions. Impacts on the environment, natural and cultural resources, and communities are considered when transportation improvements are in the project planning process, as required by the National Environmental Policy Act (NEPA). However, there is no mechanism to examine all the local impacts of a regional plan for an area that covers over 3,000 square miles. System-wide impacts of all the transportation improvements included in the plan are best captured by the air quality conformity analysis for the region (reviewed below).

Federal enhancement and Congestion Mitigation and Air Quality (CMAQ) Improvement Program funding, which made projects such as the C&O Canal and the Alexandria train station possible, are assumed to continue throughout the time period of the plan.

Assessment of Objectives

Objective 1 envisions that *The Washington region becomes a model for protection and enhancement of natural, cultural, and historical resources.* One of the ways that the plan addresses this objective is through a grant awarded to TPB under the Transportation and Community and System Preservation (TCSP) Pilot Program to support a key component of the TPB Vision: Integrating green space into a regional greenways system. In order to provide the level of attention needed to advance regional greenways and to involve key agencies, officials, and stakeholders, the TPB created a Green Space Advisory Committee to help guide the planning and implementation process. Working with these experts and local planners, regional greenway priorities were established along with an implementation

[13] For more information on air quality planning at COG, see <http://www.mwcog.org/environment/air/>.

strategy to help make these proposed greenways a reality. Eight regional priority projects were identified and are described in detail in the report. One hundred and seventy-five miles of additional greenways and trails are proposed—doubling the miles of greenways and trails currently found in the region. These projects range in scale and character, but they all provide inter-jurisdictional connections that are the foundation of the greenway network.

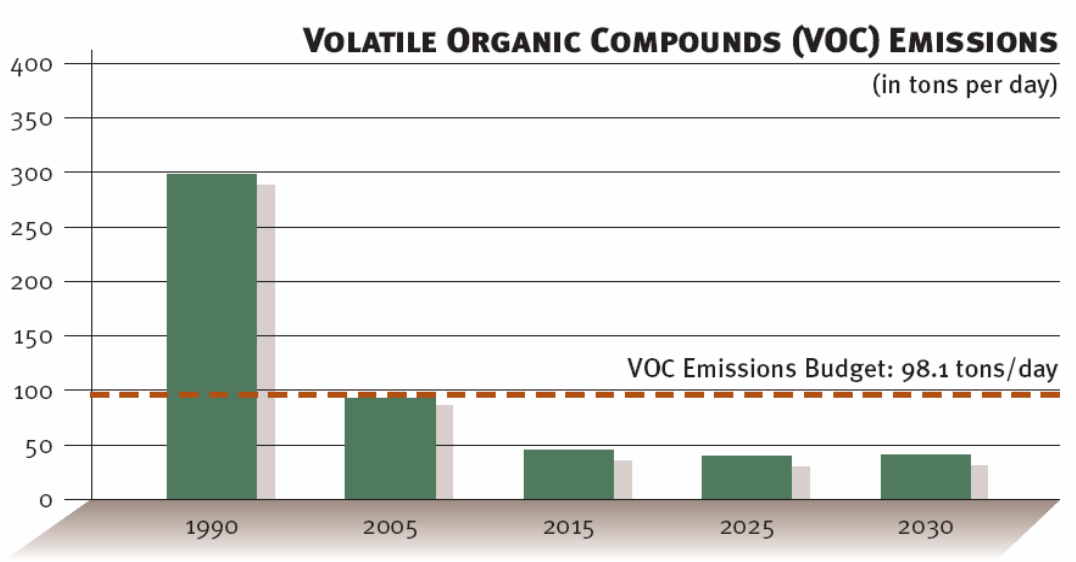
Objective 2, *Reduction in reliance on the single-occupant vehicle (SOV) by offering attractive, efficient, and affordable alternatives*, can be measured in several ways. Attractive, efficient, and affordable alternatives include rail, bus, and high-occupancy vehicle (HOV) lane systems. Over 60 percent of the funding for the plan is committed to transit projects, including rail transit to Dulles Airport by 2010, the Corridor Cities Transitway from the Shady the Bi-County Transitway, and the Anacostia Light Rail line. Although, the number or transit work trips are expected to increase 30 percent over the next 25 years, the percentage of work trips taken by transit remains relatively steady – 17 percent in 2005 and 18 percent in 2030. However, average auto occupancy is expected to remain steady—1.12 in 2005 and 1.13 in 2030. TPB's Commuter Connection program will continue to encourage the region to reduce reliance on the SOV and market the many other alternatives to commuters.

Objective 3 calls for *Increased transit, ridesharing, bicycling, and walking mode shares*. The travel demand forecasts show that transit mode share remains at about 17 percent for work trips, and about 5 percent for all trips, in both 2005 and 2030. Transit mode share is forecast to grow in the regional core—over half of all work trips in the District of Columbia are forecast to be made on transit.

Compliance with federal clean air, clean water, and energy conservation requirements, including reductions in 1999 levels of mobile source pollutants is Objective 4. Under the Clean Air Act, the CLRP is required to conform to regional air quality improvement goals. The Washington region currently does not meet national air quality standards for ground-level ozone. Before the CLRP update could be approved, the TPB was first required to approve a "conformity determination" showing that anticipated vehicle emissions will conform to emissions ceilings (called "mobile emissions budgets") contained in the region's air quality improvement plan. As mentioned earlier, the Metropolitan Washington Air Quality Committee (MWAQC) is the body responsible for developing the regional air quality plan. MWAQC developed a new air quality plan in 2003, which was closely coordinated with the CLRP development.

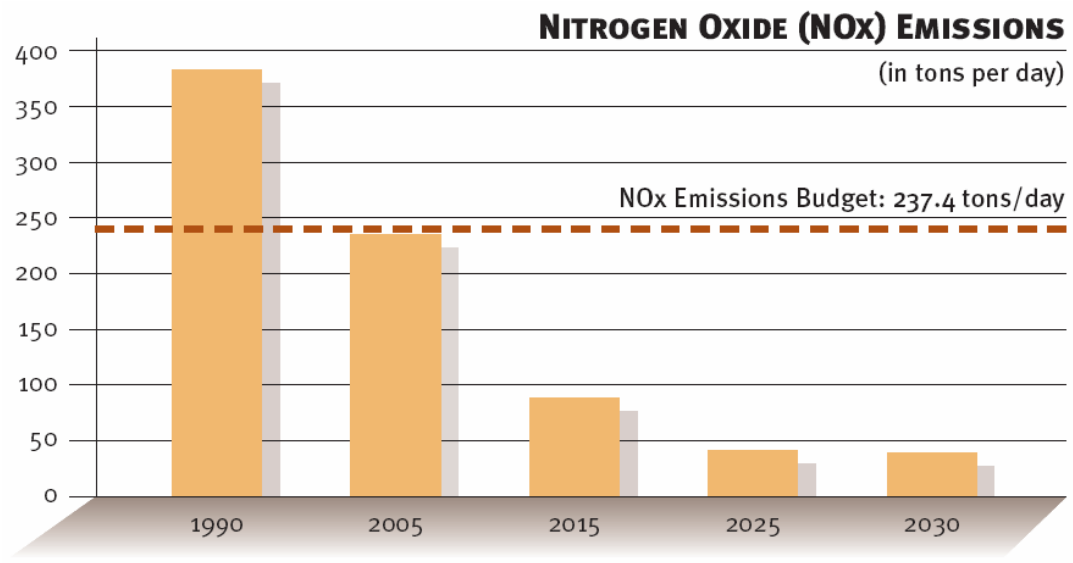
Figures 5-8 and 5-9 below show the emissions budgets in the 2003 air quality plan, which were 98.1 tons per day for VOC and 237.4 tons per day for NOx. The air quality analysis for the 2003 CLRP predicted the emissions levels shown in the charts. The emissions forecasts for 2005 were under the emissions budgets, although they were close. The long-term trend shows significant emissions reductions since 1990, which will help meet the requirements in 2015 and beyond.

Figure 5-8: Volatile Organic Compounds (VOC) Emissions 1990 -2030



Graphic Design by Carla Badaracco

Figure 5-9: Nitrogen Oxides (NOx) Emissions 1990 -2030



Graphic Design by Carla Badaracco

Objective 5 contains the most specific quantitative measure listed in the Vision, which is the *Reduction of per capita vehicle miles traveled (VMT)*. Daily VMT per capita increases 7 percent from 25 miles per person in 2005 to 27 miles per person in 2030, as shown in Table 5-4.

Table 5-4: Daily Vehicle Miles of Travel (VMT) Per Capita 2005 - 2030

	2005	2015	2030	Change 2005-2030
VMT Per Capita	**25**	**26**	**27**	**7%**
Population (Thousands)	4,970	5,600	6,100	23%
Total Daily VMT (Thousands)	126,450	146,520	166,400	32%

Total daily VMT is forecast to increase 32 percent between 2005 and 2030. This means that more people will be driving and traveling longer distances. The growth in VMT reflects the location of increases in population and employment, which is greatest in the inner and outer suburbs, as shown in Figure 5-2. VMT tends to be higher in suburban areas than in central cities because there is greater spatial separation between housing, jobs, and shopping centers. The development occurring in the outer jurisdictions increases the length of trips, which causes VMT to increase.

Other factors that influence VMT and VMT per capita include auto ownership, trip lengths, income, the number of workers in a family, access to transit, and the location of housing and jobs. Household income is a key factor affecting driving choices, not only because income closely correlates with auto ownership levels, but also because higher-income households have more housing choices, including large suburban homes that have limited transit service and few walkable destinations. Transit use tends to be highest and vehicle use lowest in communities with a high proportion of low-income households.[14]

The rate of growth in VMT per capita could be reduced by improved transit, more ridesharing, telecommuting incentives, and increased bicycle and pedestrian facility options. Compact, mixed-use development tends to be more pedestrian- and bike-friendly, which can encourage less driving. The Vision's objectives regarding regional activity centers (Policy Goal 2) call for a mix of uses in a walkable environment. Opportunities exist within the centers to improve the mix of uses and the walkability of these areas.

Objective 6 emphasizes *Protection of sensitive environmental, cultural, historical, and neighborhood locations from negative traffic and developmental impacts through focusing of development in selected areas consistent with adopted jurisdictional plans.* Parts of this objective are addressed at the project planning level, where negative traffic and development impacts are identified in an Environmental Impact Statement (EIS) for major investments. Impacts on the environment, cultural, and historic resources also have to be identified in the EIS. In creating the Regional Activity Centers, COG and TPB encouraged local jurisdictions and other agencies to promote mixed-use development and to further concentrate jobs and households in the regional activity centers and clusters.[15]

[14] *The Region*. National Capital Region Transportation Planning Board. Volume 37 1997, page 9.
[15] Figure 5-1 shows the locations of regional activity clusters. More information on the Regional Activity Centers can be found at http://www.mwcog.org/planning.

Challenges to Be Addressed in Future Plan Updates

The TPB continues to *plan and develop a transportation system that enhances and protects the region's natural environmental quality, cultural and historic resources, and communities* and the Washington region is working towards many of the objectives in Policy Goal 5. However, significant challenges remain in achieving this goal.

As our prosperous metropolitan area continues to grow, people have to travel longer distances to reach jobs and services. In addition, the nature and location of new development presents a challenge to the objective *increased transit, ridesharing, bicycling, and walking mode shares*. Vehicle Miles of Travel per capita will continue to be difficult to reduce, or even maintain in the region. More VMT means increased VOC and NOx emissions, and meeting the new air quality tests—such as the "8-Hour standard."[16] will be a key challenge for future plans. The TPB will continue work to ensure that mobile source emissions conform to budget levels established in the air quality plan.

Protecting neighborhoods from negative traffic and development impacts as the region promotes transit-oriented development (TOD) is a continuing challenge. More development around transit stations, especially on the eastern side of the region, has been called for. However, states and localities need to ensure that provisions to mitigate potentially negative impacts from such development in the short- and long-term, such as the increased housing costs and displacement, are in place.

Many of these challenges will be examined under the Regional Mobility and Accessibility Study through transportation and land use scenarios, including air quality impacts, ways to reduce the reliance on the single-occupant vehicle, and changes in per capita VMT. A land-use scenario that focuses development in selected areas, such as the regional activity centers and transit stations, will also be examined in the study.

[16] For more information on the 8-Hour Standard, go to <http://www.mwcog.org/environment/air/>.

Policy Goal #6

The Washington metropolitan region will achieve better inter-jurisdictional coordination of transportation and land use planning.

Objectives:

(1) A composite general land use and transportation map of the region that identifies the key elements needed for regional transportation planning—regional activity centers, principal transportation corridors and facilities, and designated "green space."

(2) Region-wide coordination of land-use and transportation planning in accordance with the recommendations of the Partnership for Regional Excellence report approved by the COG Board of Directors in 1993.

Where We Are Today

The coordination of land-use and transportation planning within one jurisdiction is challenging. The coordination of land-use and transportation planning within 20 jurisdictions with different land-use controls and laws is considerably more challenging. County and state offices of planning, elected officials, and planning commissions are responsible for implementing and creating laws, regulations, and policies that guide land use and development. Land-use planning is done locally and there is no regional body responsible for long-range land-use plans. Land-use laws and philosophies vary in each of the three major jurisdictions (Maryland, Virginia, and the District of Columbia). Even though transportation planning is also done by transportation agencies in the states and counties, the TPB is a forum to weave the plans together and to discuss emerging issues and challenges for the region.

A composite map of adopted land-use plans was produced in 1996 that provides information on local comprehensive plans. The TPB and COG strengthened the linkage between land-use and transportation planning in 2002 with the development of maps depicting regional activity centers. According to a resolution passed by the TPB, “the maps and accompanying information have been developed for use by local jurisdictions, the TPB, and other regional bodies to encourage mixed-use development and to increase significantly the percentage of jobs and households found in regional activity centers.” The COG Planning Directors Technical Advisory Committee developed the maps, with review by a joint task force including members of the TPB and the COG Board of Directors. The data source for the activity centers maps was COG’s Cooperative Forecasts, which are based on the local jurisdictions’ projections of population, households, and employment. The maps identify 58 regional Activity Centers that are organized into six categories: downtown core, mixed-use centers, employment centers, suburban employment centers, emerging employment centers and regional airports.[17]

[17] Figure 5-5 shows the locations of regional activity clusters. Maps of the regional activity centers and clusters can be found at <http://www.mwcog.org/planning>.

The activity centers maps are integral to the development of the TPB's Regional Mobility and Accessibility Study, which is another important analytical effort to improve regional coordination between land use and transportation. The study is a multi-year initiative looking at the effects of alternative long-term scenarios for transportation and land use development. For example, the study will consider the effects of a greater concentration of jobs and/or housing in regional activity centers and clusters, and examine the impacts of a high-occupancy toll (HOT) lane network. The study will also examine a "congestion management system," featuring a package of improvements to manage demand for the region's highway and transit systems.

Another way that the TPB addresses Policy Goal 6 is through COG's Cooperative Forecasting program. Each year the local jurisdictions provide employment and household forecasts for the TPB to use in planning the transportation system and testing the long-range transportation plan for conformity with air quality standards. The Cooperative Forecasting program enables local and regional planning to be coordinated by using common assumptions about future growth and development. The program combines regional data, which are based upon national economic trends and regional demographics, with local projections of population, households, and employment. These local projections are based on data about real estate development, market conditions, adopted land-use plans, and planned transportation improvements.

What the CLRP Does by 2030

The regional activity clusters will capture 70 percent of the region's growth in employment and 36 percent of the region's household growth by 2030. This means that the percent of jobs and households contained within regional activity clusters will remain constant over the next 25 years. It should be noted that the regional activity *clusters* contain significant concentrations of residential and commercial development, but the 58 activity *centers* include less residential development, and therefore the percentage of household growth captured by the regional activity *centers* would be less than the *clusters*.

Objective 2 calls for *region-wide coordination of land-use and transportation planning in accordance with the recommendations of the Partnership for Regional Excellence report approved by the COG Board of Directors in 1993*. The report's recommendations included reconstituting COG's Metropolitan Development Policy Committee (MDPC) by adding representation from TPB, the Metropolitan Washington Air Quality Committee (MWAQC), business and environmental communities, and the federal government.[18] The MDPC initiated a series of local land-use planning and development dialogues to promote the exchange of information that will help educate local officials on planning challenges in the region. This activity led to the development of a multimedia CD-ROM and website by COG to inform and educate elected officials, civic groups, the development community, and citizens about the land use and transportation challenges currently facing the region. The accepted principles of "Smart Growth" are candidly introduced and discussed in the context of the varied and distinct communities across the region. The CD-ROM highlights the responsibilities and successes of local government policies while acknowledging the common concerns which elected officials and citizens encounter. For more information see <http://www.mwcog.org/planning/planning/smartgrowth/>.

[18] MWCOG. The Report of the Partnership for Regional Excellence. July 14, 1993.

Challenges to Be Addressed in Future Plan Updates

Positive steps have been taken to work towards *better inter-jurisdictional coordination of transportation and land-use planning*. A challenge for future updates of the CLRP will be increasing the percentage of regional jobs and people in the regional activity clusters.

"Green space" needs to be designated and integrated into the composite land-use and transportation map. Efforts have been made to define and map the region's "green space." However, because definitions and the levels of protection from future development vary from jurisdiction to jurisdiction, this task is not an easy undertaking.

The Regional Mobility and Accessibility Study will look at the impacts of concentrating residential and commercial development in regional activity centers along transportation corridors.

Policy Goal #7

The Washington metropolitan region will achieve an enhanced funding mechanism(s) for regional and local transportation system priorities that cannot be implemented with current and forecasted federal, state, and local funding.

Objectives:

(1) Consensus on a set of critical transportation projects and a funding mechanism(s) to address the region's growing mobility and accessibility needs.

(2) A fiscally sustainable transportation system.

(3) Users of all modes pay an equitable share of costs.

Where We Are Today

An analysis of revenues and expenditures through 2030 was conducted and used to financially constrain the 2003 CLRP. The plan was adopted with the full awareness that the funding is inadequate to maintain and operate the existing transportation system, let alone expand the system. There is a continuing public dialogue on transportation funding challenges and ways to address the shortfalls.

Transportation funding is an issue for several reasons. First, much of the transportation infrastructure in the region is aging and, just like a house, more rehabilitation and maintenance is required keep the system operating. Second, fuel taxes have not maintained the revenue levels they did in the past because of more fuel-efficient cars and tax rates not keeping pace with inflation. For these reasons, future revenues are projected to be inadequate to keep pace with growth and development.

In a February 2001 report titled "A System in Crisis," the TPB reviewed the regional unfunded transit and highway needs and found a $1.74 billion per year revenue gap. In the introduction to this report, Kathy Porter, chair of the TPB in 2000, stated:

> *"The Washington region is facing a crisis in transportation funding. This is a crisis that even now is affecting our economy and quality of life. And unless we take action, the situation will just get worse."*

Three years later, with growing maintenance, rehabilitation, and preservation needs, the situation has not improved. In fact, the state and local revenue outlook appears to have worsened since the 2001 TPB report, compounding the regional financial crisis. The region has made several serious attempts to increase revenues for transportation, but to date has not succeeded in securing the funding needed.

TPB Reauthorization Principles

Every six years, Congress reauthorizes the multi-billion dollar federal surface transportation programs that fund highway and transit systems across the country. The last reauthorization occurred in 1998, with the Transportation Equity Act for the 21st Century, known as "TEA-21." The TPB brought attention to regional transportation priorities with the brochure "Principles for Reauthorization of the Federal Surface Transportation Programs," released at a press conference in November 2002.[19] The TPB's policy positions support regional "must-do" transportation priorities, including emergency preparedness, system rehabilitation and maintenance, and air quality improvement measures. The TPB reauthorization principles stressed the region's unique relationship with the federal government. With state and local governments facing growing financial shortfalls, regional leaders emphasized that federal transportation funding has become more vital than ever.

Value Pricing for Transportation

The TPB and transportation agencies are beginning to discuss a concept which until recently was considered politically nonviable: the use of tolls and other pricing mechanisms to influence travel behavior, cut congestion, and raise revenue. In June 2003, the TPB convened more than 200 elected officials, community leaders, planners, and academics for a one-day conference that explored innovative transportation pricing strategies.[20] It was the first major public event to discuss "value pricing," which, in the terminology of transportation planning, means giving drivers and transit riders the option of paying an extra fee for the value of reduced congestion. The TPB organized the conference in conjunction with the Federal Highway Administration and the departments of transportation in the District of Columbia, Maryland, and Virginia. The most commonly discussed value pricing mechanism is high-occupancy toll (HOT) lanes, which permit travelers to either ride for free in a carpool or pay a toll if they are driving alone. Tolls are typically paid through electronic transponders attached to car windshields. More sophisticated HOT lanes automatically adjust tolls based on congestion levels—an approach called "dynamic pricing." In addition to expanding travel options, pricing strategies aim to reduce congestion by influencing travel behavior.

The state departments of transportation (DOTs) in the Washington region are seriously considering the implementation of variably-priced lanes on several existing and proposed new facilities. One project that has gained attention is a proposal from the Fluor Daniel Company to build HOT lanes on the Capitol Beltway between Springfield and Route 193. Maryland is considering Express Toll Lanes, special highway lanes that could be used by paying a fee, on I-270, the Capital Beltway, and portions of I-95 north of Baltimore. The District of Columbia is looking at variable pricing for parking and WMATA is currently implementing smart card technologies which might accommodate new pricing strategies in the future.

The TPB has identified value pricing as a concept worth pursuing and has appointed a task force to examine how value pricing could benefit the Washington region. The task force will guide the development of a regional HOV/HOT lane scenario for the TPB's Regional Mobility and Accessibility Study.

[19] The TPB's reauthorization principles can be found at <http://www.mwcog.org/transportation/>.
[20] For more information on the TPB's value pricing efforts see <http://www.mwcog.org/transportation/>.

What the CLRP Does by 2030

The financial analysis of the 2003 CLRP reviews and updates projected transportation revenues and costs for operating, maintaining, and expanding the transportation system through 2030. The analysis is financially constrained to revenues reasonably expected to be available, and does not include estimates for needed levels of expenditures. The region will spend approximately $93.3 billion on the plan over the next 25 years. The region's transportation funds come primarily from federal and state fuel taxes, vehicle fees, transit fares, tolls, and local property and sales taxes. It was estimated that 77 percent of available funding will be needed to maintain and operate the regional transportation system, leaving only 23 percent for expansion of the existing system.[21]

The financial analysis presents aggregate expenditures and revenues over a 27-year period, from 2004 to 2030, but does not address year-by-year expenditure requirements relative to year-by-year availability of revenues. The financial analysis notes that within the aggregate 27-year totals "are critical short-term funding needs such as the ramp-up requirements in WMATA's rehabilitative program, which call for substantially increased funding over the next six to ten years."

Assessment of Objectives

Objective 1 is *Consensus on a set of critical transportation projects and a funding mechanism(s) to address the region's growing mobility and accessibility needs.* A TPB study on short-term critical transportation needs represents this consensus. **The study found that the region must double its anticipated transportation revenues in the next six years in order to fund key transportation priorities**. This analysis of six-year funding streams estimated that transportation revenues between 2005 and 2010 will be 12.2 billion, while total needs are forecast at $25.4 billion, meaning a shortfall of $13.2 billion over the next six years. This analysis was compiled in a brochure called "Time to Act," which was released by the TPB in February 2004. This brochure was used to inform Federal, state and local funding partners on critical regional transportation needs.

Objective 2 calls for *A fiscally sustainable transportation system.* This objective stresses the importance of funding the maintenance, rehabilitation, and operating costs that recur on an annual basis before funding system expansion. The former requires a reliable, predictable stream of current revenues; the latter requires large injections of capital funds over relatively short periods. In effect, the region must enact strategies that both increase available funds from current sources, as well as expand the authority to leverage those funds through new financing techniques.

Users of all modes pay an equitable share of costs is Objective 3. This objective involves raising awareness about the subsidies for automobile use—such as free or reduced parking, construction and maintenance of roads and highways, the interest on debt assumed for earlier construction, some police costs, street lighting costs, and sewer and sidewalk costs. One way in which this objective is addressed is by the Metrochek program, which provides transit benefits to employees and attempts to "level the playing field" between automobiles and transit.

[21] See Chapter 2 for more information on the financial analysis for the 2003 CLRP.

The region has begun to consider land value capture methods as a way to fund or finance transportation improvements. For example, public facilities that are or will be financed by special assessment districts or similar devices include the New York Avenue Metrorail station and the Dulles Rail project.

Challenges to Be Addressed in Future Plan Updates

The region has been struggling with inadequate financial resources for transportation for many years. Estimates in 2000[22] predicted that the region needed an increase of more than 50 percent in funding to maintain the current transportation system and accommodate the forecast growth in travel over a 25 year period. The situation has worsened because of continued growth in the needs and stagnating funding levels. It is clear that a regional approach to addressing these problems is an appropriate and necessary response. The 2001 "System in Crisis" report[23] made a concluding statement regarding unfunded transportation needs that is perhaps even more pertinent today:

> *"Solving the problem will require an unprecedented level of cooperation among the numerous jurisdictions across the region. Only with a concerted effort can the region begin to tackle the critical rehabilitation and capacity needs of the region's transit and highway networks."*

[22] A summary of the TPB "System in Crisis" brochure and analysis is included in he 2001 *Region* magazine and can be found at http://www.mwcog.org/store/item.asp?PUBLICATION_ID=192.
[23] Ibid.

Policy Goal #8

The Washington metropolitan region will support options for international and inter-regional travel and commerce.

Objectives:

(1) The Washington region will be among the most accessible in the nation for international and inter-regional passenger and goods movements.

(2) Continued growth in passenger and goods movements between the Washington region and other nearby regions in the mid-Atlantic area.

(3) Connectivity to and between Washington Dulles International, National, and Baltimore/Washington International airports.

Where We Are Today

In the past few years, the region has seen rapid growth in air cargo and passenger travel as well as increased freight and goods movement. The Washington-Baltimore Region Airport System Plan includes components on Commercial Airports, Ground Access, and Air Cargo that support the planning, development, and operation of airport facilities and other transportation facilities that serve the airports in a systematic framework for the Washington-Baltimore region.[24]

According to a TPB survey, Baltimore/Washington International (BWI) Airport is now the most popular airport for local passengers. Most passengers reported that "closest airport" was their primary reason for choosing an airport. However, 32 percent of BWI users and 16 percent of Dulles users said their primary reason was "lowest fare." In 1992 only 3 percent of passengers at each of those airports reported that "lowest fare" was their primary reason.[25] The TPB survey was the fifth in a series of air passenger surveys conducted at the region's three major airports—BWI, Dulles, and Reagan National. The surveys provide data for air systems and master planning processes at the airports. The data are also incorporated into the regional travel demand model, which is used to forecast vehicle emissions, among other things.

Since 1992, air travel in the region has increased 55 percent. In 2000, BWI had 38 percent of trips originating in the Washington-Baltimore region, up from 25 percent in 1992. Reagan National had 34 percent of the region's trips, down from 43 percent in 1992, and Dulles had 28 percent, down from 32 percent in 1992. The most common way of getting to the airport

[24] Washington-Baltimore Regional Airport System Plan. Metropolitan Washington Council of Governments. National Capital Region Transportation Planning Board. Volume I—Commercial Airports. 1988. Volume II—Ground Access 1993. Volume III—Air Cargo 1997.

[25] 2000 Washington-Baltimore Regional Air Passenger Survey. Summary of Findings. National Capital Region Transportation Planning Board. July 19, 2002.

continued to be the private car—accounting for 63 percent (up from 60 percent in 1992) of all arriving passengers. In 2000, 12 percent of passengers leaving from National Airport used Metrorail, which continued to be one of the highest proportions of public transit usage at any airport in the country. Approximately 1 percent of trips at BWI were made using Amtrak/MARC or light rail.

What the CLRP Does by 2030

Forecast information on goods movement over the next 25 years was unavailable for the 2003 CLRP update, but will be examined in more detail in the Regional Mobility and Accessibility Study. Available travel demand forecasts indicate that daily truck trips in the region will increase 39 percent between 2005 and 2030. A total of 500,000 truck trips per day are forecast for 2030. A challenge for freight movement and planning is increasing congestion levels and travel times, which will seriously affect goods movement.

Assessment of Objectives

Objectives 1 through 3 are addressed in part by transportation improvements in the plan such as rail to Dulles Airport by 2010 and other highway improvements near the airports and in major corridors. The plan also contains a variety of projects relevant to the maintenance of airport access facilities. These objectives are also addressed through the Commercial Airports, Ground Access, and Air Cargo components of the Regional Airport System Plan. The information provided on highway congestion levels in this chapter indicate that the high levels of congestion expected by 2030 will impact access to the airports. Travel time reliability will become much worse in the future, and costly delays can be expected for passenger and goods movement.

Challenges to Be Addressed in Future Plan Updates

The 2003 CLRP moves the region towards achieving the objectives under Policy Goal 8 but challenges for future plan updates remain. A regional plan for freight movement could be useful to the region in understanding trends and planning a regional system that accommodates freight movement with minimal disruption to traffic flow. The Regional Mobility and Accessibility Study will provide more information on regional freight movement, accessibility to the region's airports, and high-quality inter-regional travel for people and goods. Air travel, air cargo, and ground access will be addressed by the TPB's continuous airport system planning process.

SUMMARY OF GOAL ASSESSMENT AND CHALLENGES FOR UPDATING THE PLAN

This section summarizes the main findings of the previous assessment. These conclusions concerning the plan's accomplishments and the challenges that remain are intended to provide guidance for future updates to this plan.

Achievements of the Plan

The long-range plan will move the region toward the goals expressed in the Vision. The plan

- Is financially realistic and includes all projects of regional significance;

- Provides enhanced people-moving capacity along existing transportation corridors using a combination of transit, HOV, and highway approaches;

- Expands the region's transit system by extending Metrorail to Largo, by providing rail transit to Dulles Airport by 2010, by building the Corridor Cities Transitway from the Shady Grove Metro station to COMSAT, by adding a station at Potomac Yards and New York Avenue, and by creating the Bi-County Transitway between Bethesda and Silver Spring, the Anacostia Light Rail line, and the K Street busway;

- Improves the region’s highway system and adds an additional 1,900 highway and arterial lane miles;

- Meets current Clean Air Act requirements, including the reduction of ozone-causing mobile emissions, although air quality issues will continue to be a challenge for this region;

- Encourages ridesharing through informational and incentive programs, new park-and-ride facilities, and the expansion of HOV lanes;

- Encourages telecommuting through the establishment of a regional resource center, telework centers, and promotional activities;

- Was developed with public participation and comment, including input from low-income communities, minority populations, and people with disabilities; and

- Increases the awareness of remaining transportation funding shortfalls.

Challenges for Updating the Plan

Challenges specific to each policy goal were reviewed in the previous section with information on ways the TPB will be addressing the challenges. This summary presents the general categories or themes these challenges fall into:

- Addressing the projected growth in highway and transit congestion with effective, equitable, and feasible strategies,

- Identifying additional transportation revenues to address these challenges, including funds that are needed to adequately maintain and rehabilitate existing facilities;

- Working towards the implementation of value-pricing projects that will ultimately work together as a system;

- Ensuring that the region takes full advantage of new technologies to maximize system performance and enhance the safety of all transportation modes;

- Continuing to strengthen emergency response, communication, and coordination as the region grapples with increased security threats;

- Accounting for the special issues of moving goods and the needs of freight transportation within the regional planning process;

- Improving pedestrian and bicycle facilities and safety for everyone, including people with disabilities;

- Ensuring that transit services continue to serve the needs of low-income and minority communities, as well as disabled persons, through improved transit information and efficient paratransit services;

- Increasing the regional employment and household share in the regional activity centers and clusters;

- Identifying ways in which regional planning can enhance walking, bicycling, and transit use; and

- Designating “green space” in a composite land-use and transportation map.