Chapter 4 Transportation Element

Transportation Element

Overview 400

The Transportation Element provides policies and actions to maintain and improve the District's transportation system and enhance the travel choices of current and future residents, visitors and workers. These policies are complemented by policies in the Land Use, Urban Design, and Environmental Protection elements on related topics such as air quality and the management of public space. Recognizing the interplay between transportation and these related topics is critical to improving mobility and accessibility in the city. 400.1

The critical transportation issues facing the District of Columbia are addressed in this element. These include:

- Expanding the city's transit system to provide alternatives to the use of single-occupant autos
- Enhancing the city's corridors for all modes of transportation
- Increasing bicycle and pedestrian connections, routes and facilities
- Improving the efficiency of the existing transportation system
- Investing in bridge and roadway maintenance and repair
- Promoting transportation demand management. 400.2

A well-balanced and multi-modal transportation system is integral to the city's efforts to sustain and enhance the quality of life and key to its future economic growth and its role as the nation's capital. Achieving such a system requires integrating land use and transportation, and implementing a range of improvements that enhance connectivity, livability, and vitality. 400.3

As the nation's capital and the center of one of the country's fastest growing metropolitan areas, the District faces increasingly complex mobility challenges as it plans for its future. While the city still retains a large share of the region's jobs, the region itself continues to decentralize, creating longer commutes, increased peak period congestion, and poor air quality. Within the District, the major surface transportation arteries are highly congested during morning and evening commuting periods and the Metrorail system in Central Washington is expected to reach capacity in the near future. Funding to maintain the existing transportation system, let alone expand the system to meet increased demand, is severely constrained. 400.4

However, these challenges also present opportunities. The District has one of the most extensive mass transit systems in the country, densities that support and promote transit use, a growing network of bicycle and pedestrian trails, and a unique system of radial boulevards that distinguish it from all other American cities. Washington's gracious avenues, bridges, and parkways are part of its history and a defining element of its urban form and character. With appropriate strategies in place, these transportation

assets can enhance the quality of life in the city and increase the District's attractiveness while still performing their essential function to move people and goods in and around the city. 400.5

The city is also taking steps to augment and sustain its existing transportation network. It is expanding transit via bus rapid transit and light rail to areas not served by Metrorail. It is replacing the Anacostia River bridges, including the South Capitol and 11th Street bridges, to improve mobility and roadway operations and to support economic development and urban beautification goals. It is improving sidewalks and bicycle routes across the District. Table 4.1 summarizes the transportation assets of the District. 400.6

Table 4.1:

Transportation Assets of the District 400.7

Transportation Asset	Description
Roadway System	1,153 miles
Rail Mass Transit (Metrorail)	38 miles (total for region=106 miles) 40 stations (total for region = 86)
Bus Mass Transit (Metrobus)	Service on 298 miles of road (total for region=1,442 miles)
Sidewalks	1,647 miles of sidewalks
Bicycle Routes *On-road bicycle lanes* *Signed routes* *Off-road trails*	 8 miles 64 miles 34 miles
Airports*	Two international airports (Washington Dulles International and Baltimore-Washington International) and one domestic (Reagan National)
Railroads	27.2 miles of rail line (serving Amtrak passenger rail, MARC, and Virginia Railway Express commuter rail, and CSX and Norfolk Southern freight rail). Union Station, within walking distance of the Capitol, provides connections to bus and rail transit along with shared cars, rental cars and sightseeing services.

* *These serve the District but are located outside its boundaries.*

The District's Department of Transportation (DDOT) manages and maintains the city's transportation infrastructure. In 2006, DDOT will complete its federally mandated state transportation plan, known as the 2030 Transportation Vision Plan. The Plan directs transportation policies and investments for the District and will serve as a guiding document for DDOT in the coming years. This Element incorporates planning and policy guidance from the Transportation Vision Plan. 400.8

The 2030 Transportation Vision Plan includes an Action Plan, which identifies a number of transportation investments across the District. Many of the action items described in the plan are already in the project development process and many have been studied at least through the preliminary feasibility study stage. Table 4.2 summarizes some of the major transportation investments envisioned in the Transportation Vision Plan. These and other ongoing and planned transportation investments are discussed in more detail later in this Element. 400.9

Table 4.2:

Summary of Major Action Projects in the 2030 Transportation Vision Plan 400.10

Action	Description
Transit Investments	The District is currently working to expand transit alternatives by enhancing local bus service and introducing premium services such as bus rapid transit and streetcar. The new services will provide key connections to District neighborhoods, commercial areas, employment areas, and the overall Metro system.
Great Streets Initiative	The Great Streets Initiative is a multidisciplinary approach to corridor improvement, comprised of public realm investments, strategic land use plans, public safety strategies, and economic development assistance, and is a partnership of the District Department of Transportation (DDOT), the Deputy Mayor for Planning and Economic Development (DMPED), the Office of Planning (OP), the Department of Parks and Recreation (DPR), and Neighborhood Services Coordinators (NSC), among many others.
Multimodal Centers	The District is currently looking at three potential intermodal centers located at Union Station, Kennedy Center, and Banneker Overlook. These centers would provide a "park-once" service where travelers can park their vehicles and then travel efficiently and safely around the District by other modes.
DC Circulator Phase II	Phase II will continue to link major points of interest in Central Washington and will be designed to provide fast, efficient service for people visiting, working, and living in the District.
Pedestrian Node Improvements	Pedestrian node improvements include improvements at high-volume nodes such as Metrorail stations. The improvements could include better crosswalks and pedestrian signal treatments, curb extensions that shorten crossing distances, and upgraded waiting areas, including bus shelters.
Bicycle Network Expansion	The District is working to develop a comprehensive network of bicycle facilities for recreational and non-recreational users. The recently completed Bicycle Master Plan calls for 150 signed miles of bicycle routes, 60 miles of bicycle lanes, and building or improving 90 miles of off-road trails.
Tiered Truck Route System	The District is planning a series of preferred truck routes; a zone in the heavily congested and security-sensitive downtown area, from which large trucks would be prohibited during the business day; and truck prohibitions on all other roads unless travel on the street is necessary for the truck to reach its destination. The truck system will be planned in consultation with federal agencies.
Water Taxi	A waterway transportation system is proposed to extend from Rock Creek, on the Potomac River, and from Children's Island, on the Anacostia River, to the Ronald Reagan Washington National Airport and Old Town Alexandria, Virginia.

The overarching goal for transportation in the District is:
Create a safe, sustainable, efficient, multi-modal transportation system that meets the access and mobility needs of District residents, the regional workforce, and visitors; supports local and regional economic prosperity; and enhances the quality of life for District residents.

Transportation Goal 401

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Policies and Actions

T-1 Linking Land Use and Transportation 402

Transportation and land use are the fundamental components of development, and are inextricably linked to each other and to the form of our cities. The construction of a new transportation facility, such as a Metrorail station or a light rail or streetcar line, influences the nature and location of new development in that area. The nature and location of development in turn, influences patterns of travel for residents. Transportation facilities themselves are a significant element of the built environment, creating connections but at times also creating barriers. They can spur economic development and help attract private investment, but they can also create land use conflicts and environmental problems. 402.1

T-1.1 Land Use—Transportation Coordination 403

As laid out in the Framework Element of this Plan, the city and region are expected to gain jobs and households over the next 20 years. Coordinating transportation and land use decisions is critical to making the best use of infrastructure and finite land resources as these gains occur. The balance between housing and jobs plays a clear role in travel patterns. In general, the demands on our transportation system are reduced when homes are located close to places of employment and shopping. People spend less time traveling and overall quality of life may be improved. The transportation system as a whole benefits when more compact residential and employment areas are situated along major transit routes. Travel times are reduced and there is better use of public transportation investments. 403.1

Although the District has already developed walkable, transit-oriented neighborhoods, future opportunities will arise to strengthen the linkage between land use and transportation as new development takes place. Design features play an important role in this equation. Residential communities should be developed so that services such as shopping are accessible on foot, transit, or bicycle and not just by car. The design of transportation infrastructure can also have a major impact on travel

behavior and system performance. For example, the re-design of the Anacostia River crossings to be implemented in the coming years will provide for pedestrian and bicycle access across the river, while the current bridge crossings discourage or prohibit it. 403.2

The space needs of transportation support facilities—including bus garages, service yards, and motor vehicle inspection facilities—also call for stronger coordination between land use and transportation planning. The Washington Metropolitan Area Transit Authority already reports a need for additional bus storage and service yards. As new transit lines are developed, additional land will be needed for new support facilities. 403.3

Closer coordination between transportation and land use planning can result in better congestion management, more efficient use of transit and parking, and transportation infrastructure that is sensitive and complementary to its surrounding context. 403.4

Assessing and measuring the transportation impacts of land use decisions is also an important part of integrated land use and transportation planning. New development generates new trips—be they auto trips, transit trips, or pedestrian and bicycle trips. Major land use changes such as the development of large housing complexes or office buildings must be evaluated for their impacts on existing and planned transportation infrastructure to ensure that the network can function adequately when the projects are completed. New methods of managing transportation impacts, such as transportation demand management (discussed later in Section 4.3 of this chapter) must be pursued in lieu of simply building more roads. 403.5

In the past, the traditional way of measuring traffic impacts was to use a series of lettered grades (A through F) based on factors such as vehicle speed, the volume of cars that pass along a street compared to the street's capacity, or the length of time for a car to pass through an intersection. These Level of Service (LOS) standards continue to be widely used in the suburbs, where most trips are made by car. But traditional LOS measures are not appropriate in a built out city, where widening streets to increase capacity is rarely an option (or a desired outcome). In the District, level of service measures must integrate vehicular, bicycle, pedestrian and transit travel. The benchmark should be the number of people that can pass along a corridor or through an intersection rather than just the number of cars. 403.6

Policy T-1.1.1: Transportation Impact Assessment

Require full environmental impact statements for major transportation projects, including new roadways, bridges, transit systems, road design changes, and rerouting of traffic from roads classified as principal arterials or higher onto minor arterials or neighborhood streets with lesser volumes. 403.7

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In the District, level of service measures must integrate vehicular, bicycle, pedestrian and transit travel. The benchmark should be the number of people that can pass along a corridor or through an intersection rather than just the number of cars.

Policy T-1.1.2: Land Use Impact Assessment

Assess the transportation impacts of development projects using multi-modal standards rather than traditional vehicle standards to more accurately measure and more effectively mitigate development impacts on the transportation network. 403.8

Policy T-1.1.3: Context-Sensitive Transportation

Design transportation infrastructure to support current land uses as well as land use goals for compact, accessible neighborhoods. Make the design and scale of transportation facilities compatible with planned land uses. 403.9

Policy T-1.1.4: Transit-Oriented Development

Support transit-oriented development by investing in pedestrian-oriented transportation improvements at or around transit stations, major bus corridors, and transfer points. 403.10

See also Section LU-1.3 of the Land Use Element for transit-oriented development policies.

Policy T-1.1.5: Joint Development

Attract new riders to the transit system by fostering transit-supportive commercial and residential joint development projects on Washington Metropolitan Area Transit Authority (WMATA) owned or controlled land and on private properties adjacent to Metrorail stations. 403.11

Policy T-1.1.6: Transportation Support Facilities

Preserve existing transportation infrastructure support facilities where feasible and locate new, efficient support facility locations for storage and/or maintenance for Metrobus, commuter bus, tour bus, Metrorail, streetcar, commuter rail, and intercity rail. 403.12

Action T-1.1.A: Transportation Measures of Effectiveness

Develop new measures of effectiveness such as a multi-modal level of service standard to quantify transportation service and assess land use impacts on the transportation system. 403.13

Action T-1.1.B: Transportation Improvements

Require transportation demand management measures and transportation support facilities such as crosswalks, bus shelters, and bicycle facilities in large development projects and major trip generators, including projects that go through the Planned Unit Development (PUD) Process. 403.14

Please consult the Land Use and Economic Development Elements for additional policies and actions on transit-oriented development. Policies on parking are included in Section 3.2 of this Element and in the Land Use Element. Please see Section T-3.1 for additional policies on transportation demand management.

T-1.2 Transforming Corridors 404

Our avenues and boulevards are much more than simple transportation routes. They are a legacy of the 1791 L'Enfant Plan and are still one of the city's most distinctive features. They were designed to be beautiful corridors lined with distinctive buildings affording dramatic vistas for those passing by. Today, these corridors handle hundreds of thousands of private vehicles each day as well as bicycles, trucks, and buses. 404.1

Different corridors in the city serve different functions. Some, like New York Avenue, carry heavy truck and commuter traffic. Others have wide sidewalks that provide a safe and pleasant environment for pedestrians. Still others were once vital shopping streets or streetcar lines that today have lost their neighborhood-serving activities and are checkered by drive-through and auto-oriented uses. As the gateways to our communities, the District's corridors should once again become the centers of civic and economic life for surrounding neighborhoods and serve as vital transportation corridors. The challenge facing the District as it plans for and reinvests in its corridors is to balance the various transportation modes, tailor its transportation strategies to recognize the function of each major street, and foster economic growth. 404.2

Improvement of the city's corridors—particularly public space along city streets—is an important part of the ongoing "Great Streets" initiative. Great Streets applies a multidisciplinary approach to corridor improvement, comprised of public realm investments, land use plans, public safety strategies, and economic development assistance. Among other things, the initiative includes the construction of new sidewalks, lighting, signage and crosswalks. Such improvements are being used to leverage further investment in landscaping and public space by the private sector. 404.3

The Great Streets Initiative is a partnership of the District Department of Transportation (DDOT), the Deputy Mayor for Planning and Economic Development (DMPED), the Office of Planning (OP), the Department of Parks and Recreation (DPR), and Neighborhood Services Coordinators (NSC), among many others. In its first phase the program concentrates on six designated corridors. These corridors are identified in the Land Use Element and include:

- Georgia Avenue NW and 7th Street NW from Eastern Avenue to Mt. Vernon Square
- H Street NE and Benning Road NE from North Capitol Street to Southern Avenue
- Nannie Helen Burroughs Avenue NE from Kenilworth Avenue to Eastern Avenue
- Minnesota Avenue NE/SE from Sheriff Road NE to Good Hope Road SE

As the gateways to our communities, the District's corridors should once again become the centers of civic and economic life for surrounding neighborhoods and serve as vital transportation corridors.

Through the Great Streets Initiative, the District will seek private and non-profit developers for key parcels like the historic Howard Theater. Sites like these could serve as catalysts for transforming the District's corridors.

- Pennsylvania Avenue SE from the Capitol complex to Southern Avenue
- Martin Luther King Jr. Avenue SE and South Capitol Street from Good Hope Road to Southern Avenue. 404.4

New corridors may be added to the Great Streets program in the future. 404.5

Policy T-1.2.1: Boulevard Improvements

Continue to work across District agencies to beautify and stabilize selected boulevards by implementing coordinated transportation, economic development, and urban design improvements. 404.6

Policy T-1.2.2: Targeted Investment

Target planning and public investment toward the specific corridors with the greatest potential to foster neighborhood improvements and enhance connectivity across the city. 404.7

Policy T-1.2.3: Discouraging Auto-Oriented Uses

Discourage certain uses, like "drive-through" businesses or stores with large surface parking lots, along key boulevards and pedestrian streets, and minimize the number of curb cuts in new developments. Curb cuts and multiple vehicle access points break-up the sidewalk, reduce pedestrian safety, and detract from pedestrian-oriented retail and residential areas. 404.8

Action T-1.2.A: Cross-Town Boulevards

Evaluate the cross-town boulevards that link the east and west sides of the city including Florida Avenue, Michigan Avenue, and Military Road/Missouri Avenue, to determine improvements that will facilitate cross-town movement. 404.9

Please consult the Urban Design Element for additional policies and actions on streetscape and design standards for corridors.

T-1.3 Regional Smart Growth Solutions 405

While this Transportation Element is focused on the District, transportation issues do not stop at jurisdictional boundaries. As the core of the region, the District has a high level of interest in transportation issues being addressed at a regional level. Consistently ranked among the top three most congested areas in the nation, and one with very high levels of auto-related air pollution, the Washington region must work cooperatively to promote more environmentally responsible transportation. Continued strong regional action on expanding transit, and smart growth land use policies, are critical for both our transportation system and the environment. 405.1

In 2006, COG released its Regional Mobility and Accessibility Study, examining the impacts of projected regional growth between 2000 and 2030

on the metropolitan transportation system—and exploring alternatives to reduce future congestion. The study found that daily vehicle miles traveled in the region are projected to grow by 37 percent by 2030, while freeway and arterial lane miles are projected to grow by only 16 percent. As a result, most of the beltway will reach "stop and go" conditions (with average speeds less than 30 MPH) and metro trains and platforms will be packed. The key finding of the COG study is that long-term increases in congestion can be reduced by adjusting local land use plans to better match the transportation system, shifting jobs to the east side of the region, and encouraging housing closer to the region's job centers. 405.2

A regional strategy of promoting infill, mixed-use and transit-oriented development in urbanized areas is needed to ensure transportation efficiency both in the District and the region. A robust and meaningful dialogue that involves federal, state, and local leaders is absolutely essential. This dialogue should focus on improving the jobs/housing balance, investing in transit, and limiting urban sprawl on the region's frontier. Among other things, the District should establish direct avenues of communication with the planning, zoning, transportation, and economic development agencies of immediately surrounding jurisdictions. 405.3

Existing trip patterns reflect the District's role as the region's major employment destination. In 2000, approximately 70 percent of persons working in the District commuted in from the suburbs. Of these, some 39 percent drove alone, 21 percent carpooled or vanpooled, and 40 percent used transit. Moreover, a recent Council of Governments study found that approximately 25 percent of the traffic entering the District at key points from Maryland and Virginia is using the District as "short cut" and does not have a destination within District boundaries. 405.4

The Technical Report on Transportation developed as part of the revision of the Comprehensive Plan includes an analysis of the origins and destinations of work trips between each of the District's ten planning areas and the region's major employment centers, including Downtown Washington. Figure 4.1 compares the percentages of work trips from each of the city's 10 planning areas that stay within that planning area, go to Central Washington, go to other areas within the District, or leave the District each day. 405.5

Approximately 29 percent of the District's residents commute to suburban destinations, with about 10 percent of these trips going to large "regional activity centers" such as Tysons Corner, Silver Spring, Bethesda, and Rosslyn. Near Northwest had the highest percentage of resident work trips remaining within the District, at 77 percent. However, this was not markedly different from other planning areas; Far Southeast/Southwest had the lowest percentage of resident work trips that remained within the District, at 66 percent. 405.6

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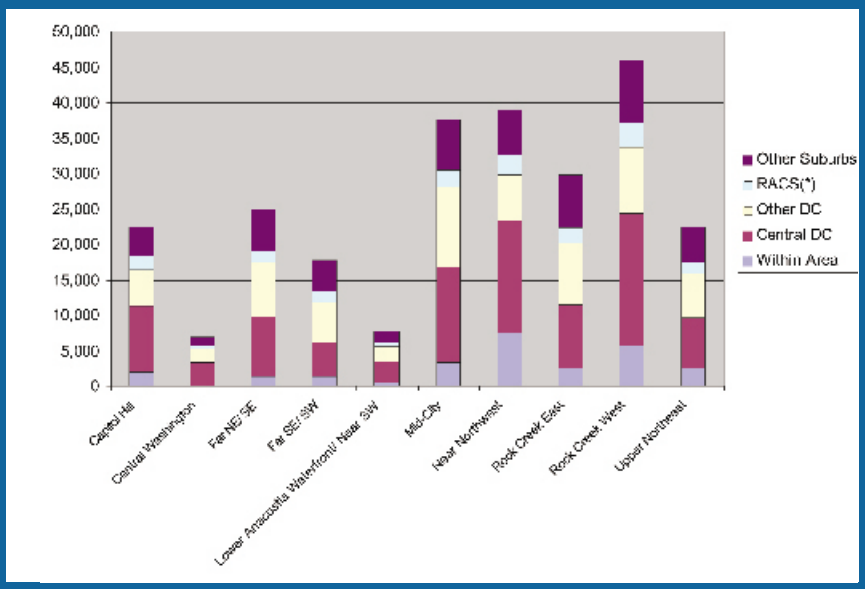
Figure 4.1:

Destination of Work Trips Originating in Each of the District's 10 Planning Areas 405.7



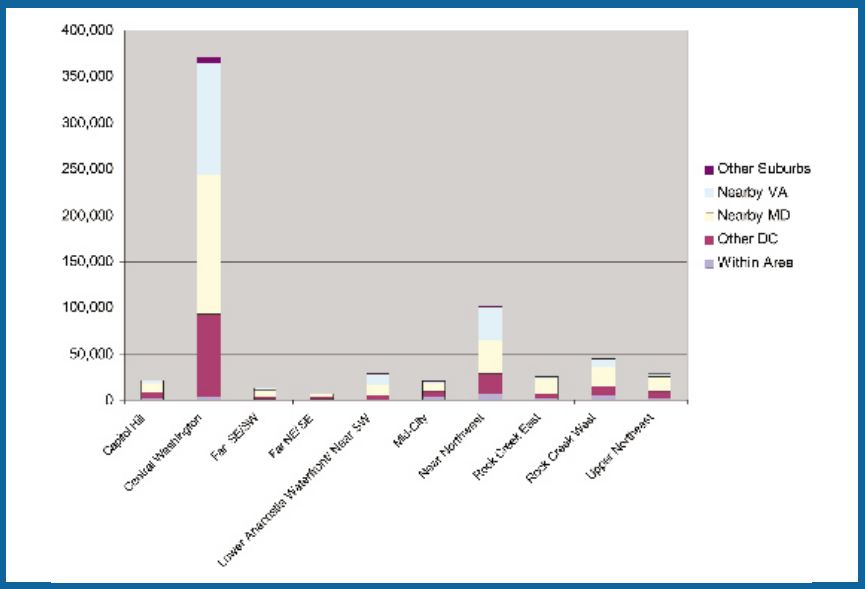
The height of each bar indicates the number of employed residents in each of the city's 10 Planning Areas. The shading shows where residents in each area actually worked. Nearly 40 percent of the city's employed residents work in Central Washington. 405.7

* RACS= Regional activity centers (outside DC)

Source: DC Office of Planning 2006

Figure 4.2:

Origin of Work Trips in Each of the District's 10 Planning Areas 405.8



The height of each bar indicates the total number of jobs in each Planning Area. The shading indicates where the people who occupy those jobs actually live. 405.9

Source: DC Office of Planning 2006

Figure 4.2 illustrates the origins of daily work trips to each Planning Area of the District, comparing trips by District workers with trips from outlying jurisdictions. The figure indicates that the vast majority of both resident and non-resident commuters are traveling to Central Washington. In fact, Central Washington is the destination for approximately 61 percent of the work trips that come from outside the District. Table 4.3 reflects the existing levels of demand for each mode of transportation for commuters working in the District. More than 50 percent of the commuters to Central Washington use transit or carpool. 405.9

Transit-oriented and transit-accessible employment maximizes the use of major transportation investments such as Metrorail.

Table 4.3:

Mode Choice for Inbound Trips to the District's 10 Planning Areas* 405.10

	Drive Alone	Carpool/ Vanpool	Transit	Other	Total
Capitol Hill	48%	17%	28%	7%	100%
Central Washington	39%	18%	38%	5%	100%
Far NE/SE	64%	16%	11%	9%	100%
Far SE/SW	71%	15%	8%	6%	100%
Lower Anacostia Waterfront/Near SW	60%	20%	15%	5%	100%
Mid-City	53%	14%	19%	14%	100%
Near Northwest	48%	14%	28%	11%	100%
Rock Creek East	68%	15%	12%	5%	100%
Rock Creek West	64%	13%	16%	7%	100%
Upper Northeast	63%	16%	14%	7%	100%
Total	47%	17%	30%	7%	100%

Source: DC Office of Planning, 2006

**includes trips originating in the suburbs as well as in the District.*

Policy T-1.3.1: Transit-Accessible Employment

Work closely with the federal government and suburban jurisdictions to support transit-oriented and transit-accessible employment throughout the region. This would maximize the use of major transit investments such as Metrorail, and enhance the efficiency of the regional transportation system. 405.11

Policy T-1.3.2: Reverse Commuting

Utilize data on the travel patterns of District workers as the basis for programs to improve transit service, particularly programs that increase reverse commuting options for District workers employed in major suburban employment centers. 405.12

Providing transportation choices that are more efficient and environmentally friendly than driving such as walking, bicycling, and public transit is a key goal of the Comprehensive Plan.

Policy T-1.3.3: Regional Transportation Planning Initiatives

Advocate for large-scale regional transportation planning initiatives that involve local, regional, state, and federal governments. Such initiatives are essential given the long lead-times and high expense of increasing regional transportation capacity. 405.13

Action T-1.3.A: Regional Jobs/Housing Balance

Continue the efforts to ensure that the concepts of infill, mixed-use and transit-oriented development are promoted at the regional level; to design transportation systems that connect District residents to local jobs; and to provide opportunities for non-resident workers to also live in DC. 405.14

Action T-1.3.B: Regional Transportation Infrastructure Study

Actively participate in efforts by the Metropolitan Washington Council of Governments and other regional organizations that address long-term transportation infrastructure needs in Greater Washington. Advocate for—and take a leadership role in—the preparation of a 50-year Regional Transportation Infrastructure Study that takes a broad-based look at these needs, taking into account expected growth patterns and emerging technologies. 405.15

T-2 Multi-Modal Transportation Choices 406

The District has one of the most balanced transportation systems in the country. It is ranked second only to New York in terms of the percentage of residents who take public transportation, and second only to Boston in the percentage who walk to work. Thirty-seven percent of the District's households have no automobile. Providing transportation choices that are more efficient and environmentally friendly than driving such as walking, bicycling, and public transit is a key goal of the Comprehensive Plan. 406.1

T-2.1 Transit Accessibility 407

The District and its region are served by the second largest rail transit system and the fifth largest bus network in the United States. The bus and rail systems are operated by the Washington Metropolitan Area Transit Authority (WMATA), which provides service throughout the Washington region. 407.1

WMATA was created in 1967 by an Interstate Compact to plan, develop, build, finance and operate a balanced regional transportation system in the National Capital area. Construction of the planned 103-mile Metrorail system began in 1969 and was largely funded by the federal government. The first phase of Metrorail began operation in 1976 and was completed in early 2001. In 2004, three new stations opened—two extended the Blue Line east of the Beltway and the first infill station (New York Avenue) opened on the Red Line. The system now totals 106 miles, 38.3 miles of which are located within

the District itself. Close to half of the stations on the system—40 of 86—are located in the District. The Metrorail system is shown in Map 4.1. While much of the city is within ½ mile of a station, some areas such as Georgetown, the New York Avenue corridor, and Bolling Air Force Base, are not. 407.2

As the core of the region and the hub of the Metrorail system, much of WMATA's transit usage centers on the District. In May 2005, the total average weekday boardings at all Metrorail stations was 687,000. Nearly 60 percent of these boardings occurred at District stations. 407.3

Metrorail trains often fill to capacity in the suburbs in peak periods, leaving little space for District residents by the time trains arrive in the city. Downtown station platforms are congested. The District and WMATA are studying the feasibility of underground pedestrian connections between Gallery Place/Metro Center and Farragut North/Farragut West to relieve overcrowding. 407.4

The WMATA Core Capacity Study investigated options to increase capacity of the system, but there are several obstacles to making long-term, large-scale improvements. For instance, the Orange and Blue Lines share a track through downtown Washington, greatly limiting the capacity of both lines. Likewise, the interlinking of the Green and Yellow Lines between L'Enfant Plaza and the Convention Center discourages capacity increases on either of those lines. Adding tracks in these areas would require extraordinary costs and service disruption. 407.5

Because of the very high cost of building entirely new Metrorail subway lines within the District, the city is instead proposing better connections to and among the various spokes of the Metrorail system with investments in surface transit. These improvements include bus rapid transit, streetcar, and improvements to local bus service through the use of new technologies. In addition the city is working with WMATA to make more efficient use of existing infrastructure through measures such as increasing train lengths from six cars to eight cars. The increased train length would add about one-third more capacity to each train, greatly helping to alleviate short-term congestion problems in the system. This technique would not require any changes to railroad or station infrastructure, although power delivery infrastructure would need to be upgraded and new rail cars would need to be acquired. 407.6

WMATA also operates the Metrobus regional bus service. The buses run approximately 163,500 miles on an average weekday carrying about 431,000 trips. Approximately 55 percent of these trips are within the District. Metrobus operates 157 major routes on 1,442 miles of roadway throughout the metropolitan area. Within the District, Metrobus operates 58 major bus lines on 298 miles of roadway or 27 percent of the roadway system. Average weekday ridership on these lines ranges from about 200 persons to over 22,000 persons. Some of the high volume bus routes include

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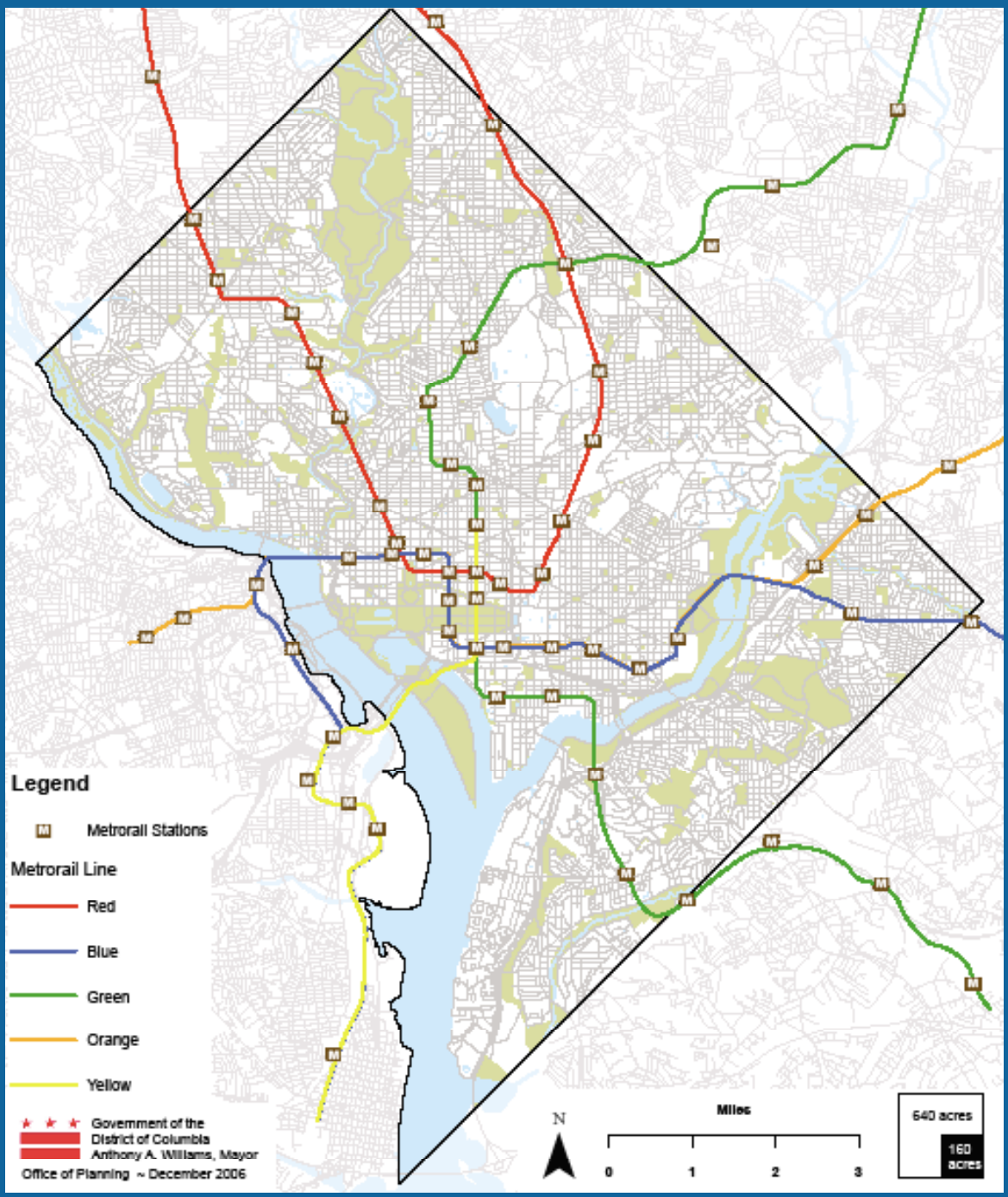
Map 4.1:

Metrorail System 407.7



Source: Washington Metropolitan Area Transit Authority 2006

Pennsylvania Avenue (routes 30, 32, 34, 36), 14th Street NW (routes 52, 53, 54), and Georgia Avenue—7th Street (routes 70, 71). 407.8

WMATA faces complex and unique funding and budgetary challenges to maintain and operate the transit system. Research shows that over half of the total capital spending for other transit systems in other cities comes from dedicated sources of one kind or another. However, WMATA receives no funding from such sources. For operations spending, other transit systems obtain about one-third of their total funding from dedicated sources. For WMATA, it is less than two percent. Most of WMATA's operating budget comes from direct subsidy payments from cities and counties in the region, including the District. The amounts vary from year to year. 407.9

WMATA needs a stable, reliable, and dedicated revenue source to take the pressure off passenger fares and the local governments' annual subsidy. The District will continue to actively collaborate with jurisdictions throughout the region and with the federal government to pursue a dedicated and more stable revenue stream, such as a sales tax. 407.10

The District is served by a number of regional bus carriers in addition to Metrobus. In Maryland, these include MTA Commuter Bus, Dillon, Eyre, and Keller Transportation. In Virginia, these include Lee Coaches, National Coach, Quick's, Loudoun County Commuter Bus, and PRTC OmniRide. A number of private bus services also provide circulation within the District for schools, hospitals, universities, and other areas or attractions. The District is also served by regional commuter rail (discussed in the next section). 407.11

In addition to the regional WMATA bus service, the District began the DC Circulator service in July 2005 with 29 new buses on two routes linking Union Station with the Washington Convention Center and Georgetown via K Street, as well as connecting the Convention Center to the Southwest Waterfront through Downtown and the National Mall. A third route was added in March 2006 to expand circulator service around the National Mall. 407.12

Ongoing and Planned Transit Improvements

The District is working to increase transit options for intra-District trips. These options will include a variety of transit technologies including neighborhood circulators, streetcars, bus rapid transit, and rapid bus. The intra-District system will be designed to be cohesive, supplement and complement existing Metro services, and support District land use objectives. 407.13

Map 4.2 illustrates the corridors recommended in the 2005 District of Columbia Alternatives Analysis (DCAA). The DCAA examined the major travel corridors in the District and provided analysis of their propensity to support premium transit service. Recommended transit technologies were also provided. As the DCAA is refined, a system plan will be developed that reflects a timeline for its implementation. 407.14

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Some aspects of the DCAA are already being implemented. Planning for "Phase 1 DC Streetcar" has begun and service is expected to begin in Summer 2007. Plans for integrating the rail construction with the streetscape project on H Street NE are also underway. Bus Rapid Transit (BRT) is currently being planned for the K Street corridor and rapid bus service is scheduled to be implemented on Georgia and Pennsylvania Avenues in 2007. 407.15

Other ongoing transit improvement initiatives include:

a. K Street Busway: The busway would provide two travel lanes for exclusive use by buses between Washington Circle and Mount Vernon Square, with further extensions to Georgetown in the west and Union Station in the east. The busway is scheduled to open in 2008.

b. Circulator: There are two to three additional planned Circulator routes. One route would likely provide service to major points of interest along the western portion of the National Mall, such as the Lincoln Memorial, Washington Monument, and Jefferson Memorial. A second, larger loop route would likely connect Union Station with the US Capitol Building, the White House, Metro Center, and Foggy Bottom.

c. Water Taxis: Water taxis are proposed to extend from the mouth of Rock Creek on the Potomac River to Children's Island on the Anacostia River, and to Ronald Reagan Washington National Airport and Old Town Alexandria, Virginia. Privately owned and operated, water taxis would load and unload passengers at docks built with public-private funding. 407.16

Policy T-2.1.1: Transit Accessibility

Work with transit providers to develop transit service that is fast, frequent, and reliable and that is accessible to the city's residences and businesses. Pursue strategies that make transit safe, secure, comfortable, and affordable. 407.17

Policy T-2.1.2: Bus Transit Improvements

Enhance bus transit service by improving scheduling and reliability, reducing travel time, providing relief for overcrowding, increasing frequency and service hours, and improving both local access and cross-town connections. 407.18

Policy T-2.1.3: WMATA Funding

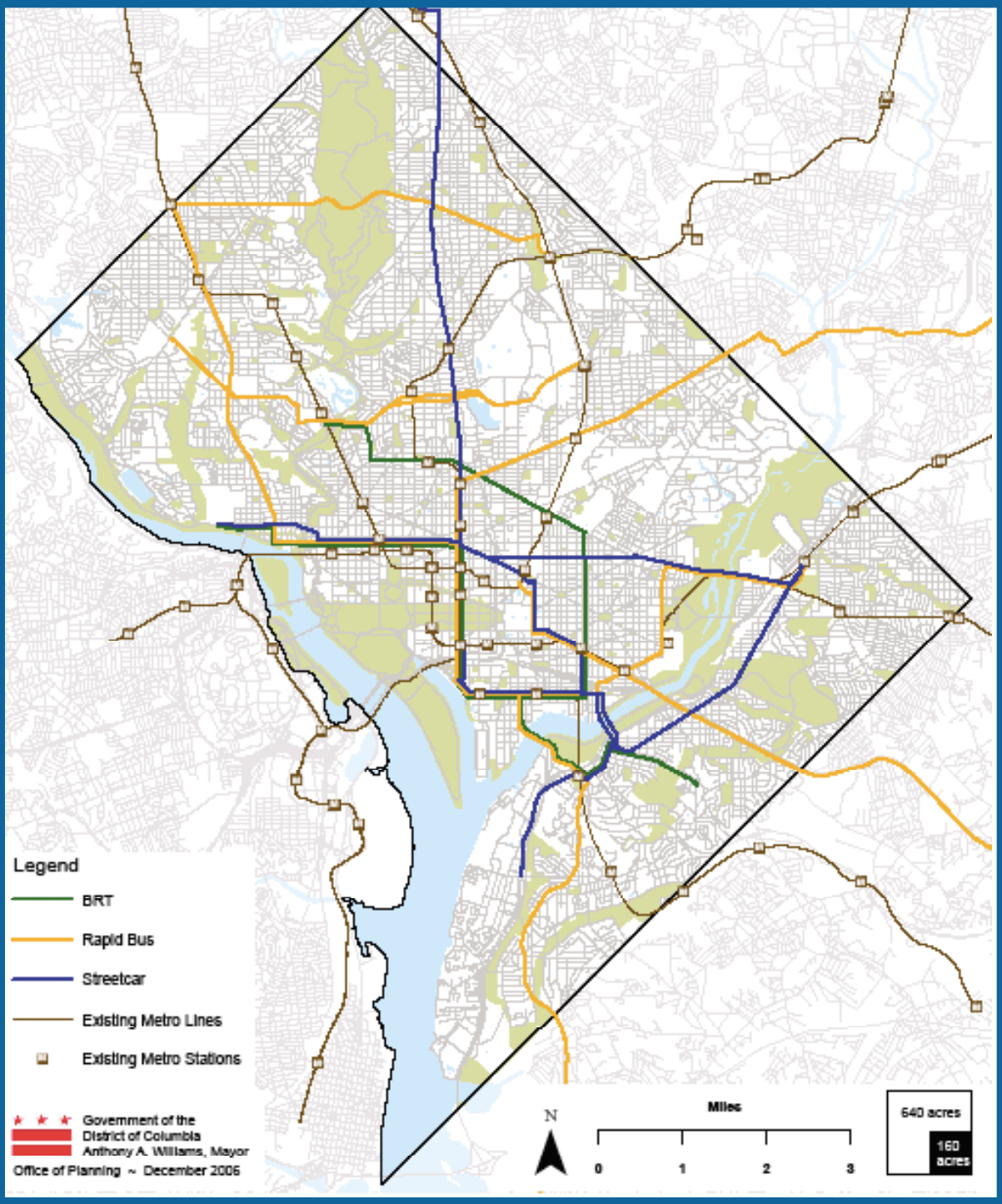
Support the creation of dedicated, reliable funding sources for Metro, generated through the equitable participation of all jurisdictions in the region that benefit from the system. 407.19

Policy T-2.1.4: Maintenance of Transit Facilities

Work with the WMATA Board to ensure that necessary investments to the transit system are made to keep it operating safely and to maximize its useful life. 407.20

Map 4.2:

Proposed BRT/LRT Corridors 407.21



Source: 2005 District of Columbia Alternatives Analysis

4

Figure 4.3:

Mass Transit Under Consideration

Streetcar

BRT Vehicle

Rapid Bus Vehicle

These photos illustrate three types of mass transit now under consideration in the District.

Streetcars are wheeled vehicles that run on rails and operate on electricity.

Bus Rapid Transit, or BRT, attempts to combine the reliability and service quality of a rail system (like streetcars) using bus vehicles. BRT systems often include dedicated bus lanes, allowing them to travel more quickly than conventional buses.

Rapid Bus is similar to BRT in many ways. Like BRT, Rapid Bus is faster than conventional buses because the vehicles stop only at the busiest locations. Rapid Bus systems also have distinctive vehicles, stops, and color schemes to make them instantly recognizable and easy to use. They also typically feature enhanced shelters at stops, real-time passenger information, and signal prioritization. Rapid Bus vehicles, however, are often smaller than BRT vehicles and tend to look more like conventional buses than the rail-like BRT vehicles.

In 2003, WMATA completed a Regional Bus Study that recommended the development of several Rapid Bus corridors in the city. 407.22

Action T-2.1.A: New Streetcar or Bus Rapid Transit Lines

Construct a network of new premium transit infrastructure, including bus rapid transit and streetcar lines to provide travel options, better connect the city, and improve surface-level public transportation. As needed, replace existing travel and/or parking lanes along selected major thoroughfares with new rapid bus or streetcar lines to improve mobility within the city. 407.23

Action T-2.1.B: Eight-Car Trains

Increase Metrorail train lengths from six cars to eight cars for rush hour commuting and other peak periods. 407.24

Action T-2.1.C: Circulator Buses

In addition to the circulator bus routes planned for Downtown, consider implementing circulator routes in other areas of the city to connect residents and visitors to commercial centers and tourist attractions and to augment existing transit routes. 407.25

Action T-2.1.D: Bus Stop Improvements

Improve key bus stop locations through such actions as:

- Extending bus stop curbs to facilitate reentry into the traffic stream;
- Moving bus stops to the far side of signalized or signed intersections where feasible;
- Adding bus stop amenities such as user-friendly, real-time transit schedule information;
- Improving access to bus stops via well-lit, accessible sidewalks and street crossings; and
- Utilizing GPS and other technologies to inform bus riders who are waiting for buses when the next bus will arrive. 407.26

Action T-2.1.E: Financing

Continue the campaign to establish a regional dedicated funding source to finance the expansion and rehabilitation of the Metrorail and Metrobus systems. 407.27

Action T-2.1.F: College Student Metro Passes

Explore potential partnerships between WMATA and local colleges and universities to provide Metro passes to college students. As part of this program, improve connections between campuses and Metrorail stations during both on- and off-peak hours. 407.28

Action T-2.1.G: Water Taxis

Explore public-private and regional partnership opportunities to provide water taxis on the Potomac and Anacostia Rivers to serve close in areas around the District as well as longer-distance routes from points south such

as Indian Head on the east side of the Potomac and Woodbridge on the west. In addition to improving mobility and access, water taxis and ferries provide a safe alternative for commuters and an alternate mode of transit in the event Metro service or bridge traffic is disrupted. 407.29

T-2.2 Making Multi-Modal Connections 408

Multi-modal connections refer to the links between different modes of travel, such as Metrorail, bus, and private cars. These connections can be improved by expanding Metrorail stations to allow for more effective bus and streetcar transfers, particularly as streetcars, RapidBus, and Bus Rapid Transit services become more common. Similarly, better pedestrian amenities, increased bicycle parking and more visible parking for car-share vehicles at Metrorail stations can enhance connections. 408.1

Intercity and commuter rail and bus connections are also critical to creating an efficient multimodal transportation system. Amtrak regularly runs trains into and out of Union Station, providing service along the northeastern rail corridor as well as points west and south. The District ranks third in Amtrak station passenger volume, after Philadelphia and New York City. The District is currently served by two commuter rail systems—Maryland Commuter Rail (MARC), which provides service from Maryland, and the Virginia Rail Expressway (VRE), which provides service from Virginia. These systems provide up to 30,000 trips in and out of Union Station on a typical weekday on 96 trains per day. Commuter ridership has increased substantially during recent years, and continued growth of both systems is expected. 408.2

The expansion of these two intercity and commuter rail services, coupled with Metrorail and Metrobus service, will increase accessibility and enhance regional transportation options. A number of key facilities on the rail system need improvements to accommodate future ridership and enable intermodal transfers. Increased capacity at Union Station and L'Enfant Plaza is also needed to accommodate commuter rail passenger traffic for MARC and VRE riders respectively. Taxis may also provide enhanced mobility for the disabled and elderly. 408.3

Taxis are another important component of the District's multi-modal transportation system. They provide an alternative and convenient means of travel throughout the District. In October 2005, the District launched the Taxicab Information Project ("TIP") in an effort to move away from a zone-based fare to a meter-based fare. 408.4

Policy T-2.2.1: Multi-Modal Connections

Create more direct connections between the various transit modes consistent with the federal requirement to plan and implement intermodal transportation systems. 408.5

Policy T-2.2.2: Connecting District Neighborhoods

Improve connections between District neighborhoods through upgraded transit, auto, pedestrian and bike connections, and by removing or minimizing existing physical barriers such as railroads and highways. However, no freeway or highway removal shall be undertaken prior to the completion of an adequate and feasible alternative traffic plan that has been approved by the District government. 408.6

Taxis are another important component of the District's multi-modal transportation system. They provide an alternative and convenient means of travel throughout the District.

Policy T-2.2.3: Airport Connections

Work with other local governments in the Washington metropolitan region to maintain intermodal transportation services that ensure more efficient and convenient connections between the District and the Reagan Washington National, Baltimore/Washington Thurgood Marshall International (BWI), and Washington Dulles International airports. 408.7

Policy T-2.2.4: Commuter and Intercity Rail

Support the expansion of commuter and intercity rail. Intercity rail could include magnetic levitation (MAGLEV) high-speed trains that could provide access to New York in 90 minutes and to Boston in three hours. 408.8

Policy T-2.2.5: Taxi Enhancements

Promote and incentivize upgrades to the city's taxi fleet including conversion to hybrid vehicles, installation of time and distance meters, improvements in tracking and dispatching, and implementation of handicap-accessible vehicles. Particular attention should be given to improving taxi service to neighborhoods east of the Anacostia River. 408.9

Action T-2.2.A: Intermodal Centers

Plan, fund, and implement the development of intermodal activity centers both at the periphery of the city and closer to Downtown. These intermodal centers should provide a "park-once" service where travelers including tour buses, can park their vehicles and then travel efficiently and safely around the District by other modes. The activity centers surrounding the District's Downtown should be located at Union Station, the Kennedy Center, and Banneker Overlook. 408.10

Action T-2.2.B: Pedestrian Connections

Work in concert with WMATA to undertake pedestrian capacity and connection improvements at selected Metrorail stations, streetcar stations, and bus transfer facilities to enhance pedestrian flow, efficiency, and operations. 408.11

Action T-2.2.C: Bicycle and Car-Pool Parking

Increase investment in bicycle parking and provide more visible parking for car-sharing operations at Metrorail stations, key bus stops, and future streetcar stations. 408.12

The use of bicycles for transportation and recreation is increasing within the District. Between 1990 and 2000, bicycle commuting grew by 55 percent, from a 0.75 percent share to a 1.16 percent share of all District-based work trips.

Action T-2.2.D: Commuter Rail and Bus Connections

Increase capacity and connectivity at Union Station and at the L'Enfant Plaza VRE station to accommodate additional commuter rail passenger traffic and direct through-train connections between Maryland and Virginia. In addition, support continued investment in commuter bus service and in Metrorail feeder bus service throughout the region. 408.13

Action T-2.2.E: Bus Connections

Promote cross-town bus services and new bus routes that connect neighborhoods to one another and to transit stations. 408.14

Action T-2.2.F: Regional Intermodal Transportation Plan

Work with the other local governments in the region and the Metropolitan Washington Council of Governments to update a regional intermodal transportation plan. 408.15

T-2.3 Bicycle Access, Facilities, and Safety 409

Bicycling has long been a part of the transportation mix in the District. In the late 19th and early 20th centuries, bicyclists, pedestrians, buggies, and streetcars all shared District streets. The District's interest in bicycling as an alternative to motorized transportation grew in the 1970s in response to the energy crisis and the first District Bicycle Plan was adopted in 1976. 409.1

The use of bicycles for transportation and recreation is increasing within the District. Between 1990 and 2000, bicycle commuting grew by 55 percent, from a 0.75 percent share to a 1.16 percent share of all District-based work trips. Continued increases in bicycling as a percent of work trips is desired. 409.2

Currently, the District has 17 miles of bike lanes, 50 miles of bike paths, and 64 miles of bicycle routes. The city is also working to improve bicycle connections through parks and green spaces. Map 4.3 shows the city's bicycle trail network. 409.3

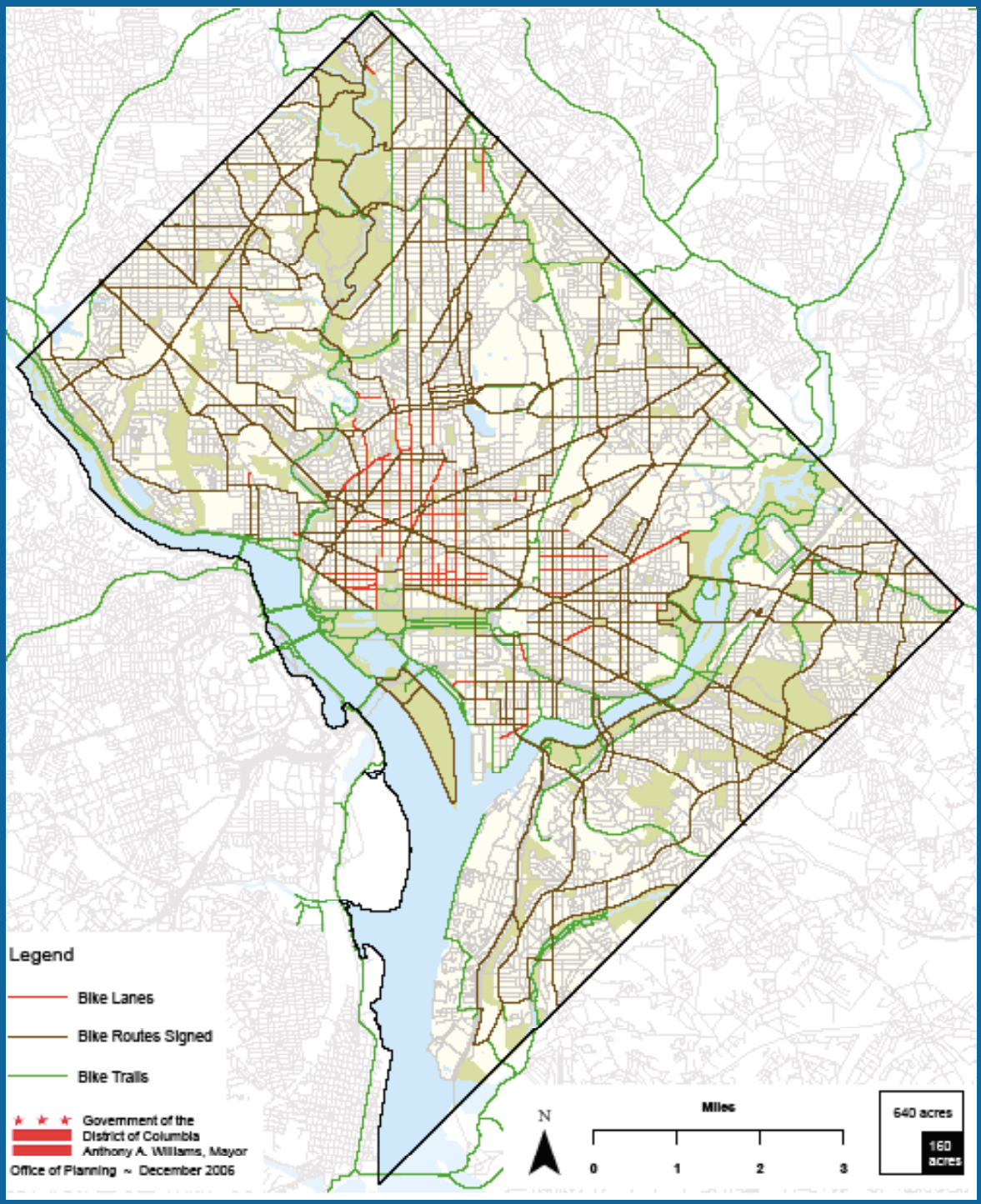
While existing conditions provide a firm foundation for bicycling, many parts of the city are not as bicycle-friendly as they should be. Many parts of the city have no bicycle facilities at all and many workplaces and other destinations have no facilities for storing or locking bicycles. 409.4

Safety is another big concern. On average there are 270 bicycle crashes in the city each year. Between 1992 and 2001, close to one-third of all fatalities from motor vehicle crashes in the District were pedestrians or bicyclists as compared to about 20 percent nationally and 27 percent for large urban areas. 409.5

In 2003, the District Department of Transportation estimated the Bicycle Level of Services (Bicycle LOS) along 400 miles of major collector and arterial streets in the District. The Department of Transportation evaluated

Map 4.3:

Bicycle Routes and Trails 409.6



roadway lane and shoulder width, speed limit, pavement condition, and on-street parking data. The analysis found that about 70 percent of the study network received below average Bicycle LOS grades. The recently completed Bicycle Master Plan includes many recommendations to improve bicycle facilities and infrastructure and should be consulted for more detail. 409.7

Please refer to the Parks, Recreation and Open Space Element for additional policies and actions related to bicycle and pedestrian trails.

Policy T-2.3.1: Better Integration of Bicycle and Pedestrian Planning

Integrate bicycle and pedestrian planning and safety considerations more fully into the planning and design of District roads, transit facilities, public buildings, and parks. 409.8

Policy T-2.3.2: Bicycle Network

Provide and maintain a safe, direct, and comprehensive bicycle network connecting neighborhoods, employment locations, public facilities, transit stations, parks and other key destinations. Eliminate system gaps to provide continuous bicycle facilities. 409.9

Policy T-2.3.3: Bicycle Safety

Increase bicycle safety through traffic calming measures, provision of public bicycle parking, enforcement of regulations requiring private bicycle parking, and improving bicycle access where barriers to bicycle travel now exist. 409.10

Action T-2.3.A: Bicycle Facilities

Wherever feasible, require large new commercial and residential buildings to be designed with features such as secure bicycle parking and lockers, bike racks, shower facilities, and other amenities that accommodate bicycle users. 409.11

Action T-2.3.B: Bicycle Master Plan

Implement the recommendations of the Bicycle Master Plan to:

a. Improve and expand the bike route system and provide functional and distinctive signs for the system;

b. Provide additional bike facilities on roadways;

c. Complete ongoing trail development and improvement projects to close gaps in the system;

d. Improve bridge access for bicyclists;

e. Provide bicycle parking in public space and encourage bicycle parking in private space;

f. Update the District laws, regulations and policy documents to address bicycle accommodation;

g. Review District projects to accommodate bicycles;

h. Educate motorists and bicyclists about safe operating behavior;

i. Enforce traffic laws related to bicycling;

j. Establish a Youth Bicycle and Pedestrian Safety Education Program;

k. Distribute the District Bicycle Map to a wide audience; and

l. Set standards for safe bicycle operation, especially where bikes and pedestrians share the same space. 409.12

Action T-2.3.C: Performance Measures

Develop, apply, and report on walking and bicycle transportation performance measures to identify strengths, deficiencies, and potential improvements and to support the development of new and innovative facilities and programs. 409.13

T-2.4 Pedestrian Access, Facilities, and Safety 410

The District's population density, interconnected grid of streets, wide sidewalks, and renowned park system have long contributed to a favorable environment for walking. In 2000 nearly 31,000 District residents (12 percent of the city's labor force) walked to work. 410.1

The District has more than 1,600 miles of sidewalks. However, there are still streets without sidewalks and a backlog of sidewalks needing repair. Pedestrian safety is also a big challenge. There are roughly 550 collisions between cars and pedestrians in the city each year. 410.2

Improvements to pedestrian facilities can enhance the quality of the walking and public transit environments, and foster greater use of both modes. Improvements should focus on reductions in the number and severity of pedestrian-vehicle conflict points, clarified pedestrian routing, widened sidewalks, and improved aesthetic features such as landscaping. 410.3

Encouraging walking will bring many benefits to the District. It will provide convenient and affordable transportation options, reduce vehicular-travel and related pollution, and improve the health and fitness of District residents. 410.4

Policy T-2.4.1: Pedestrian Network

Develop, maintain, and improve pedestrian facilities. Improve the city's sidewalk system to form a network that links residents across the city. 410.5

Policy T-2.4.2: Pedestrian Safety

Improve safety and security at key pedestrian nodes throughout the city. Use a variety of techniques to improve pedestrian safety, including textured or clearly marked and raised pedestrian crossings, pedestrian-actuated signal push buttons, and pedestrian count-down signals. 410.6

The District's population density, interconnected grid of streets, wide sidewalks, and renowned park system have long contributed to a favorable environment for walking. In 2000 nearly 31,000 District residents (12 percent of the city's labor force) walked to work.

Encouraging walking will bring many benefits to the District. It will provide convenient and affordable transportation options, reduce vehicular travel and related pollution, and improve the health and fitness of District residents.

See also Action T-1.1.A on developing multi-modal transportation measures of effectiveness, and the Educational Facilities Element for recommendations on the Safe Routes to School program.

Policy T-2.4.3: Traffic Calming

Continue to address traffic-related safety issues through carefully considered traffic calming measures. 410.7

Policy T-2.4.4: Sidewalk Obstructions

Locate sidewalk cafes and other intrusions into the sidewalk so that they do not present impediments to safe and efficient pedestrian passage. Maintain sidewalk surfaces and elevations so that disabled or elderly pedestrians can safely use them. 410.8

Action T-2.4.A: Pedestrian Signal Timings

Review timing on pedestrian signals to ensure that adequate time is provided for crossing, in particular for locations with a large elderly population. 410.9

Action T-2.4.B: Sidewalks

Install sidewalks on all major streets throughout the District where there are missing links. Continue to monitor the sidewalk network for needed improvements. Consult with ANCs and community organizations as plans for sidewalk construction are developed. 410.10

Action T-2.4.C: Innovative Technologies for Pedestrian Movement

Explore the use of innovative technology to improve pedestrian movement, such as personal transportation systems and enhanced sidewalk materials. 410.11

Action T-2.4.D: Pedestrian Access on Bridges

Ensure that the redesign and/or reconstruction of bridges, particularly those crossing the Anacostia River, includes improved provisions for pedestrians, including wider sidewalks, adequate separation between vehicle traffic and sidewalks, guard rails, pedestrian-scaled lighting, and easy grade transitions. 410.12

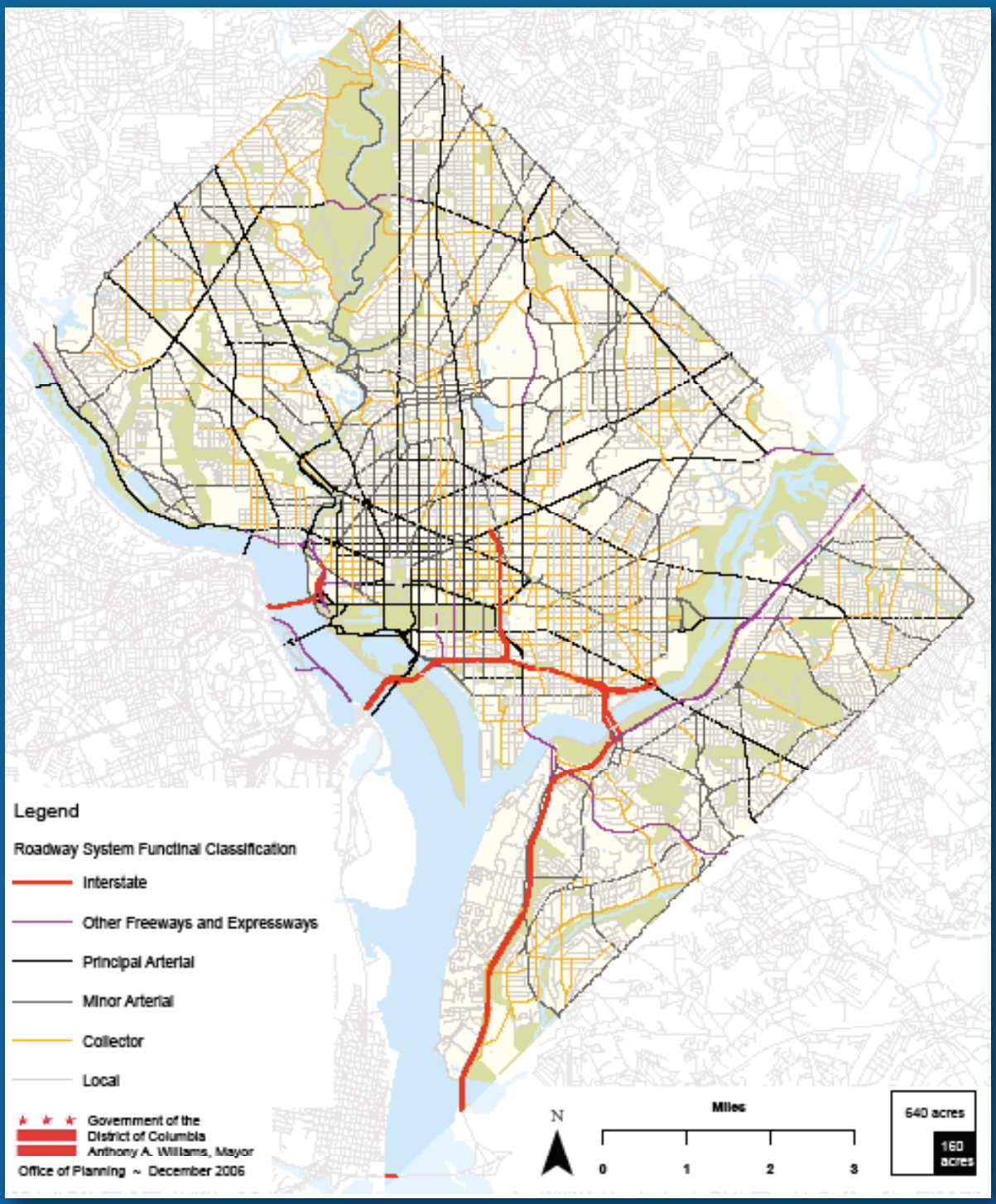
T-2.5 Roadway System and Auto Movement 411

The District's roadway system consists of 1,153 miles of roadway, 229 vehicular and pedestrian bridges, and approximately 7,700 intersections. Approximately 17 percent of these intersections are signalized, with about one in three signalized intersections located within the downtown area. 411.1

The roadways in the District are categorized by function, ranging from interstates and other freeways, which provide the highest degree of travel mobility, to local streets, which provide the highest level of access to land uses. Map 4.4 shows the existing roadway system based on a functional classification system described in Table 4.4. 411.2

Map 4.4:

Roadway System by Functional Classification 411.3



Increases in funding for street maintenance since the mid-1990s have allowed the District to continually improve the condition of its roadway pavement. The District continually monitors and rates the condition of its roadways and bridges. 411.4

Table 4.4:

Existing Roadway System Functional Classification* 411.5

Road Type	Description
Freeways and Expressways	These roadways, which comprise 54 miles or approximately five percent of the total roadway miles in the District, are controlled access facilities. Access is via interchange ramps and these roadways typically do not provide direct access to adjacent land uses.
Principal Arterials	These roadways, comprising 92 miles or approximately eight percent of the District's roadway system, typically serve major activity centers and serve longer trip lengths than the roadway types listed below. The freeways and principal arterials function as the primary commuter routes and form the backbone of the overall roadway system. Freeways and principal arterials typically carry between 40 and 60 percent of a city's total traffic volumes.
Minor Arterials	Minor arterials account for 173 miles, or approximately 15 percent of the total roadway system. These roadways serve short to medium length trips, with a greater emphasis on mobility than direct access. In a typical network, minor arterials make up 15 to 25 percent of the mileage and carry 15 to 40 percent of the total traffic.
Collectors	The role of collectors is to move traffic from local streets to the arterials. Collectors will often intersect arterials at signalized intersections. Local roads will intersect collectors at stop signs. Collectors make up 152 miles, or 13 percent, of the District's roadway system.
Local Roads	These roads typically make up the majority of the transportation network as measured by road miles. They carry between 10 and 30 percent of all traffic. The primary role of local roads is to provide access to adjacent land uses, with ideally a very limited role in terms of traffic mobility. Approximately 60 percent, or 682 miles, of the District's roadway system is classified as local.

* *The District has 202 roadway bridges that are located on roads classified as collector and above, 12 bridges on the local roadway system, and 15 pedestrian bridges. Because of their relatively high construction and maintenance cost, bridges represent a substantial portion of the total roadway system investment.*

Traffic congestion on the District's roadway network occurs primarily on the radial principal arterial roadways. Figure 4.3 illustrates traffic volumes on major streets and highways. The flow of traffic is greatly influenced by north-south movements along the I-95 corridor feeding into I-295 and I-395. These highways carry the heaviest daily traffic volumes in the District with an average of approximately 193,000 daily trips on I-395 and 80,000 on I-295. In addition, the limited number of crossings over the Potomac and Anacostia rivers generates higher volumes of traffic at these gateways than their counterparts in the northern portion of the District. 411.6

Examples of heavy volumes from the south include 93,000 daily trips across the Anacostia River on the Pennsylvania Avenue Bridge, 64,000 trips across the Potomac on the Key Bridge, and 100,000 trips across the Theodore Roosevelt Bridge, also over the Potomac. These volumes can be contrasted with volumes coming into the city from the north and northeast, which include 41,000 daily trips on Connecticut Avenue, 18,000 daily trips on Georgia Avenue, 37,000 daily trips on North Capitol Street, and more than 100,000 daily trips on New York Avenue. 411.7

Since the District is a densely developed city with an historic built environment, the city does not foresee making significant investments in road widening to accommodate more autos. Instead, the District will continue to manage existing roadway resources and provide for viable transportation choices throughout the city. Some of the roadway and bridge investments the city is planning to make within the next five to eight years include:

a. Rehabilitating the existing Frederick Douglass Memorial Bridge through structural steel repairs, lighting improvements, and preventive maintenance;

b. Constructing a tunnel between I-295 east of the Anacostia River and the existing I-395 Third Street tunnel to carry regional through traffic beneath the South Capitol Street corridor and to replace the Southeast Freeway;

c. Creating a traffic circle at the intersection of Potomac Avenue and South Capitol Street;

d. Extending Potomac Avenue to 2nd Street SE on the east and to Fort McNair on the west;

e. Reconfiguring the underpass arrangement at the intersection of M and South Capitol Streets;

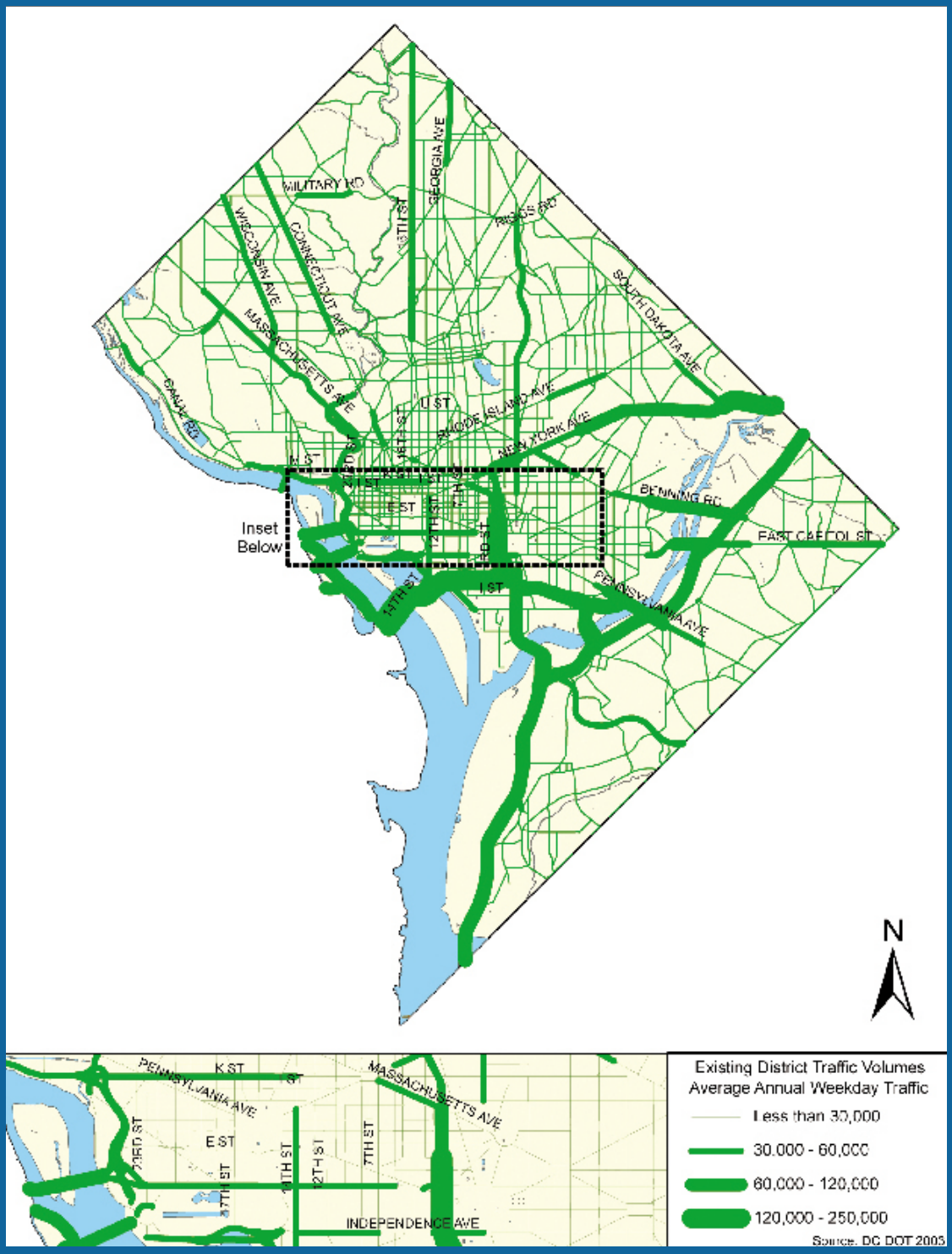
f. Redesigning South Capitol Street for a continuous, at-grade 130-foot street section as originally specified in the L'Enfant Plan, with a narrow median;

g. Constructing an island to channelize traffic onto and off of Fairlawn Avenue at Pennsylvania Avenue;

4

Figure 4.4:

Existing District Traffic Volumes, 2003 411.8



h. Placing a directional ramp on the northwestern quadrant of the Pennsylvania Avenue, SE/Anacostia Freeway (I-295) interchange; and

i. Placing a single point diamond interchange at Pennsylvania Avenue, SE/Anacostia Freeway (I-295). 411.9

As part of the Comprehensive Plan revision, an analysis of the transportation impacts of anticipated 20-year land use and transportation changes was conducted. The analysis projected a 20 to 25 percent increase in the total number of transit trips by 2025, and about an 11 percent increase in the total number of vehicle trips. Much of the increase is associated with off-peak travel and a "spreading" of the commute period over additional hours of the day. Vehicle congestion will increase on several corridors. The analysis concluded that new transportation demand management measures and transit improvements will be needed, both in the city and in the region, to keep the system functioning adequately. 411.10

An analysis of the transportation impacts of anticipated 20-year land use and transportation changes concluded that new transportation demand management measures and transit improvements will be needed, both in the city and in the region, to keep the system functioning adequately.

Policy T-2.5.1: Creating Multi-Modal Corridors

Transform key District arterials into multi-modal corridors that incorporate and balance a variety of mode choices including bus or streetcar, bicycle, pedestrian and auto. 411.11

Policy T-2.5.2: Managing Roadway Capacity

Manage the capacity of principal arterials within existing limits rather than increasing roadway capacity to meet induced demand for travel by car (See text box on page 32). Increase auto capacity on roadways only if needed to improve the safety of all travelers, improve connectivity of the multi-modal transportation network, or improve targeted connections to regional roadways. 411.12

Policy T-2.5.3: Road and Bridge Maintenance

Maintain the road and bridge system to keep it operating safely and efficiently and to maximize its useful life. 411.13

Policy T-2.5.4: Traffic Management

Establish traffic management strategies that separate local traffic from commuter or through-traffic and reduce the intrusion of trucks, commuter traffic, and "cut-through" traffic on residential streets. 411.14

Action T-2.5.A: Maintenance Funds

Provide sufficient funding sources to maintain, and repair the District's system of streets and alleys, including its street lights and traffic control systems, bridges, street trees, and other streetscape improvements. 411.15

Action T-2.5.B: Signal Timing Adjustments

Regularly evaluate the need for adjustments to traffic signal timing to minimize unnecessary automobile idling. 411.16

The Concept of Induced Demand 411.18

Research shows that urban traffic congestion tends to maintain a self-limiting equilibrium: vehicle traffic volumes increase to fill available capacity until congestion limits further growth. Any time a consumer makes a travel decision based on congestion ("Should I run that errand now? No, I'll wait until later when traffic will be lighter") they contribute to this self-limiting equilibrium. Travel that would not occur if roads are congested, but will occur if roads become less congested, is called induced travel demand. Increasing road capacity, or reducing vehicle use by a small group, creates additional road space that is filled with induced demand.

Action T-2.5.C: Update the Functional Classification System

Update the functional classification of the city's roadways to reflect a multi-modal approach that better integrates pedestrians, bicyclists, and transit vehicles. Ensure that the updated system complies with federal laws and that changes will not reduce available funding. 411.17

T-2.6 Addressing Special Needs 412

Multi-modal transportation options are critical for special needs populations who cannot drive or do not have access to a car. Special needs transportation can be a lifeline for a senior citizen who needs to go to a medical appointment, for a person with a disability who needs to go to work, or a low-income worker who needs to get his or her children to childcare or go grocery shopping. Without alternatives to cars, a significant portion of the population may be unable to lead independent lives. 412.1

Policy T-2.6.1: Special Needs

Address the transportation needs of all District residents, including those with special physical requirements and trip needs, such as access to medical centers or senior centers. 412.2

Policy T-2.6.2: Transit Needs

Establish, expand, or continue assistance for transit-dependent groups in the District, including the elderly, students, school age children, and persons whose situations require special services, including the homeless. 412.3

Action T-2.6.A: Public Improvements

Invest in public improvements, such as curb inclines aimed at increasing pedestrian mobility, particularly for the elderly and people with disabilities. 412.4

Action T-2.6.B: Shuttle Services

Supplement basic public transit services with shuttle and minibuses to provide service for transit-dependent groups, including the elderly, people with disabilities, school age children, and residents in areas that cannot viably be served by conventional buses. 412.5

T-3 Transportation System Efficiency and Management 413

With the costs of providing new transportation facilities on the rise, the District must constantly look for ways to reduce travel demand as well as to more effectively use its existing and future transportation systems. This section of the Element addresses Transportation Demand Management (TDM), curbside management and parking, truck and tour bus movement, and travel information. 413.1

T-3.1 Transportation Demand Management 414

Transportation Demand Management (TDM) refers to a series of transportation strategies that are designed to maximize the people-moving capability of the transportation system by increasing the number of persons in a vehicle, increasing transit ridership, or influencing the time of (or need to) travel. To accomplish such changes, TDM programs rely on incentives or disincentives to make shifts in travel behavior more attractive. 414.1

The primary purpose of TDM is to reduce the number of vehicles using the road system while providing a variety of mobility options to those who wish to travel. Typical TDM programs include:

- Carpooling and vanpooling, employee shuttles, and improvements which encourage bicycling and walking
- Financial incentives, such as preferential parking for ride sharers and transit subsidies
- Congestion avoidance strategies, such as compressed work weeks, flexible work schedules, and telecommuting. 414.2

TDM strategies are particularly useful during peak period travel times when demand is the greatest. The Washington, DC metropolitan region is a leader in developing and implementing such strategies. Some of the regional TDM strategies already in place include telework centers, vanpool programs, guaranteed ride home programs, and transit incentive programs. 414.3

The federal government employs approximately 370,000 people in the National Capital Region. As the region's largest employer, the federal government has a strong interest in improving the quality of transportation services and infrastructure. It is in a unique position to provide leadership in TDM programs that can accommodate the travel needs of its workforce while simultaneously setting the standard for the region as a whole. Through its mandatory regional transit subsidy program, the federal government provided more than $72 million in transit subsidies for federal employees in 2001. 414.4

The District supports all these initiatives and also has a number of its own TDM measures in place. For instance, it is helping to educate the public about

The Washington, DC metropolitan region is a leader in developing and implementing Transportation Demand Management strategies. Some of the regional TDM strategies already in place include telework centers, vanpool programs, guaranteed ride home programs, and transit incentive programs.

Roadway Pricing Approaches 414.7

New technologies are making roadway pricing more feasible and economical. The range of roadway pricing approaches include cordon fees (used most notably in London and Singapore) where motorists are charged for entering the central portion of the city via electronically-read debit cards. Other options include methods to measure miles traveled on particular roads (again using electronic means) and assessing per-mile charges based on such variables as wear-and-tear on the roadway system, air and noise pollution, imposition of congestion, etc. Pricing strategies can also vary depending on the time of day, the level of congestion, and other parameters.

car-sharing—a service that allows members to rent cars at an hourly rate, rather than the traditional daily rate charged by rental companies. Car-sharing vehicles are scattered throughout the city for quick and easy access. In this manner, car-sharing allows people who do not own a vehicle to rent one on an occasional basis. This reduces the need to own and drive vehicles within the District. To incentivize the use of shared cars and encourage the private sector to expand car-sharing programs, the District has designated strategic curbside parking spaces for these vehicles, accompanied with educational brochures to help explain this service to the public. The District is also implementing TDM initiatives through a pilot program that focuses on the District government, public schools, and major employers throughout the city. 414.5

Roadway pricing is another strategy to manage transportation demand. Research indicates that 75 to 80 percent or more of the costs of driving are "external" costs such as noise and air pollution. Over the long term, recovering these costs will serve to level the playing field for all modes of travel. The region's motorists and residents currently pay the full cost of transportation through a variety of indirect means. Distributing these costs among transportation users and making these costs more apparent to motorists will ultimately help to shift travel both in the District and throughout the region to modes that are most efficient in terms of lowest overall costs. The District is investigating how to implement roadway pricing, particularly strategies targeting those drivers who "cut through" the District with neither a starting nor an ending point within District boundaries. 414.6

Policy T-3.1.1: Transportation Demand Management (TDM) Programs

Provide, support, and promote programs and strategies aimed at reducing the number of car trips and miles driven (for work and non-work purposes) to increase the efficiency of the transportation system. 414.8

Policy T-3.1.2: Regional TDM Efforts

Continue to pursue TDM strategies at the regional level and work with regional and federal partners to promote a coordinated, integrated transportation system. 414.9

Policy T-3.1.3: Car-Sharing

Encourage the expansion of car-sharing services as an alternative to private vehicle ownership. 414.10

Action T-3.1.A: TDM Strategies

Develop strategies and requirements that reduce rush hour traffic by promoting flextime, carpooling, transit use; encouraging the formation of Transportation Management Associations; and undertaking other measures that reduce vehicular trips, particularly during peak travel periods. Identify TDM measures and plans as appropriate conditions for large development

approval. Transportation Management Plans should identify quantifiable reductions in vehicle trips and commit to measures to achieve those reductions. Encourage the federal and District governments to explore the creation of a staggered workday for particular departments and agencies in an effort to reduce congestion. 414.11

Action T-3.1.B: Roadway Pricing

Implement roadway pricing between now and the year 2030 in three phases:

Phase 1: Continually monitor direct and external roadway costs to gain a more accurate estimate of the true cost of driving for motorists;

Phase 2: Develop a system to identify those who drive entirely through the District without stopping (i.e., those who are not living in, working in, or visiting the city), as well as a mechanism to charge these motorists for the external costs that they are imposing on the District's transportation system; and

Phase 3: Continually monitor state-of-the-art roadway pricing techniques and technologies, and work cooperatively with neighboring jurisdictions to implement roadway pricing programs that better transfer the full costs of driving to motorists. This could include higher costs for heavier and higher emission vehicles. 414.12

Action T-3.1.C: Private Shuttle Services

Develop a database of private shuttle services and coordinate with shuttle operators to help reduce the number of single-occupant trips. 414.13

Action T-3.1.D: Transit Ridership Programs

Continue to support employer-sponsored transit ridership programs such as the federal Metrocheck program where, pursuant to federal legislation, public and private employers may subsidize employee travel by mass transit each month. 414.14

T-3.2 Curbside Management and Parking 415

Long- or short-term parking is part of almost every car trip, and parking—especially when free—is a key factor in the mode choice for a trip. The availability and price of parking can influence people's choices about how to travel to work, shop, and conduct personal business. The District's challenge, like that of many other major cities, is to manage limited curbside space to accommodate ever increasing parking demand. 415.1

There are approximately 400,000 parking spaces in the District of Columbia. The majority of these parking spaces (260,000) are on-street parallel-parking type spaces. About 6 percent of these on-street spaces (16,000) have parking meters. Another 140,000 parking spaces are located off-street in parking lots

The availability and price of parking can influence people's choices about how to travel to work, shop, and conduct personal business. The District's challenge, like that of many other major cities, is to manage limited curbside space to accommodate ever increasing parking demand.

and garages. The majority of the off-street spaces are located in Downtown parking garages. 415.2

Policy T-3.2.1: Parking Duration in Commercial Areas

Encourage the supply and management of public parking in commercial areas to afford priority to customers and others on business errands, and discourage the use of these spaces by all-day parkers, including establishment employees. 415.3

Policy T-3.2.2: Employing Innovations in Parking

Consider and implement new technologies to increase the efficiency, management, and ease of use of parking. These include consolidated meters, changeable parking meter fees by time of day or day of the week, shared-use parking, vertical/stacked parking, electronic ticketing of parking offenders and other innovations. 415.4

Action T-3.2.A: Short-Term Parking

Continue to work with existing private parking facilities to encourage and provide incentives to convert a portion of the spaces now designated for all-day commuter parking to shorter-term parking. The purpose of this action is to meet the demand for retail, entertainment, and mid-day parking. 415.5

Action T-3.2.B: Car-Share Parking

Continue to provide strategically placed and well-defined curbside parking for car-share vehicles, particularly near Metrorail stations, major transit nodes, and major employment destinations, and in medium and high density neighborhoods. 415.6

Action T-3.2.C: Curbside Management Techniques

Revise curbside management and on-street parking policies to:

a. adjust parking pricing to reflect the demand for and value of curb space;

b. adjust the boundaries for residential parking zones;

c. establish parking policies that respond to the different parking needs of different types of areas;

d. expand the times and days for meter parking enforcement in commercial areas;

e. promote management of parking facilities that serve multiple uses (e.g., commuters, shoppers, recreation, entertainment, churches, special events, etc.);

f. improve the flexibility and management of parking through mid-block meters, provided that such meters are reasonably spaced and located to accommodate disabled and special needs populations;

g. preserve, manage, and increase alley space or similar off-street loading space; and

h. increase enforcement of parking limits, double-parking and other curbside violations, including graduated fines for repeat offenses and towing for violations on key designated arterials. 415.7

Action T-3.2.D: Unbundle Parking Cost

Find ways to "unbundle" the cost of parking from residential units, allowing those purchasing or renting property to opt out of buying or renting parking spaces. "Unbundling" should be required for District-owned or subsidized development, and the amount of parking in such development should not exceed that required by Zoning. Further measures to reduce housing costs associated with off-street parking requirements, including waived or reduced parking requirements in the vicinity of Metrorail stations and along major transit corridors, should be pursued during the revision of the Zoning Regulations. These efforts should be coupled with programs to better manage residential street parking in neighborhoods of high parking demand, including adjustments to the costs of residential parking permits. 415.8

T-3.3 Goods Movement 416

Trucks

In addition to moving customers and employees to the District's businesses, the transportation system moves goods to and from many of these same businesses. Trucks constitute about five percent of total vehicle traffic in the District. This is small compared to the 10 to 15 percent of traffic represented by trucks in most major cities in the United States. Truck traffic bound for the District originates primarily in Maryland east of the District. Many trucks enter the District via New York Avenue, where a majority of industrial activity and goods warehousing is concentrated. 416.1

Mayor's Parking Taskforce Report 415.9

In 2002 a multidisciplinary group made up of District agencies and citizens from across the city, collaborated to create the Mayor's Parking Taskforce. This group was charged with identifying ways to mitigate parking shortages in the District and to balance competing uses for a limited supply of on-street parking. The taskforce reviewed existing District parking policy and legislation, as well as parking policies of various cities across the country, to develop recommendations to improve parking policy.

The key recommendations of the Mayor's Parking Taskforce Report are highlighted below:

- Guiding principles for parking policy in the District should include:
  - Prioritizing parking in residential areas for residents
  - Prioritizing customer parking in commercial areas to promote and facilitate commerce
  - Introducing demand-based pricing strategies
  - Ensuring the safety of pedestrians, motorists and parking enforcement personnel
  - Improving tracking of localized parking demand.
- The residential parking program regulations and enforcement should be based on the type of residential designation. Residential designation is determined by density and proximity to commercial establishments, including Metrorail stations.
- Commercial parking reform should include the introduction of multi-space meters and an adjustment to meter zones and metered parking rates according to market pricing methodologies. This should include improved enforcement, tax incentives to private parking operators, metered loading zones and changes to parking requirements for new construction.

Large tractor trailers constitute approximately 10 percent of the traffic on the corridors with significant truck traffic. They constitute only above five percent of truck traffic in the downtown area.

Small trucks such as courier vans and pickup trucks dominate truck traffic in the District. Almost 90 percent of the truck traffic in the downtown area consists of these smaller trucks. The most significant problem with these vehicles is the lack of parking spaces for loading and unloading. Large tractor-trailers constitute approximately 10 percent of truck traffic on the corridors with significant truck traffic. They constitute only about five percent of truck traffic in the downtown area. 416.2

Construction-related truck traffic has become an increasing concern for city residents. Construction vehicles frequently have to travel through residential neighborhoods to get to and from construction sites, creating air pollution, noise, and vibration on these streets. While there are no officially designated truck routes in the city, there are many de facto truck routes because of roadway geometry, traffic conditions, and location relative to trip origins and destinations. Passenger vehicles are also heavy users of these same routes, leading to congestion for both passenger vehicles and trucks. 416.3

In 2004, DDOT prepared a Motor Carrier Management and Threat Assessment Study to address truck-related concerns, including truck traffic on residential streets, congestion associated with truck loading and unloading, information and services for truck operators, and security issues. Two major recommendations were made: first, to create a single, exclusive DDOT office to coordinate motor-carrier transactions; and second, to develop a set of designated truck routes. 416.4

Freight Rail

There are several freight rail lines traversing the city. CSX Transportation operates about 40 trains daily running north and south using the combination of its Capital and Landover lines to get through the District. Other activity on the Landover line includes several coal trains per day. Approximately 30 freight trains per day operate on the Metropolitan line, as well as 20 MARC trains and two Amtrak trains. There are also approximately 30 freight trains per day on the Capital line. 416.5

The Virginia Avenue railroad tunnel provides freight access into the District and is also owned by CSX Transportation. Although there have been proposals to remove this railroad line from freight usage, no plans have been formally adopted to do so. One recent study, the Mid-Atlantic Rail Operations Study (see text box), assumes its continued use. The study, which was sponsored by a coalition of five states and three railroads, recommended a public-private program that would expand and upgrade the CSX line. The proposed improvements include reconstructing the Virginia Avenue tunnel and adding railroad capacity by either adding additional tracks and/or increasing the height of the tunnel to allow for double-stacked containers. Such plans need to be carefully coordinated with ongoing plans by the District, as they may not be entirely consistent with the city's plans to redesign the I-395 freeway and relocate the CSX line. 416.6

Policy T-3.3.1: Balancing Good Delivery Needs

Balance the need for goods delivery with concerns about roadway congestion, hazardous materials exposure, quality of life, and security. 416.8

Policy T-3.3.2: Freight Safety

Continue to work with the federal government and the rail owners and operators to protect the city's residents and workforce by working to eliminate the rail shipment of hazardous materials through the District of Columbia. 416.9

Policy T-3.3.3: Rail as an Alternative to Trucking

Encourage the use of rail rather than trucks for the movement of goods as a means of reducing the amount of truck traffic and the size of trucks in the district. 416.10

Policy T-3.3.4: Truck Management

Manage truck circulation in the city to avoid negative impacts on residential streets and reduce the volume of truck traffic on major commuter routes during peak travel hours. 416.11

Action T-3.3.A: New Office for Trucking and Goods Movement

Create a single, exclusive office within the Department of Transportation to coordinate motor vehicle transactions, as well as coordination with trucking companies and other stakeholders. This office should also work with other District agencies, to enhance curbside management policies and ensure that delivery regulations serve the needs of customers and the general public. 416.12

Action T-3.3.B: Tiered Truck Route System

Develop a tiered truck route system to serve the delivery and movement of goods while protecting residential areas and other sensitive land uses. 416.13

T-3.4 Traveler Information 417

Traveler information plays a key role in transportation system efficiency, and new technologies provide an increasing number of options for providing timely information to travelers across all modes. A state-of-the-art traveler information system can enhance transportation quality, safety, cost-effectiveness, and efficiency. 417.1

For visitors, wayfinding signage—that is, signage that helps travelers reach their destinations—is one of the most important components of the District's transportation infrastructure. Much of the existing wayfinding signage in the District is effective and appropriate for motorists, but gaps exist in the network of signs. High quality and carefully-designed wayfinding signs for pedestrians can also help orient tourists, Metro riders, and others so they can easily find their intended destinations. 417.2

The Mid-Atlantic Rail Operations Study 416.7

The Mid-Atlantic Rail Operations (MAROP) Study is an initiative of the I-95 Corridor Coalition to examine the deteriorating performance of the Mid-Atlantic's highway, aviation and rail systems. A consortium of five states and three railroads undertook this study: Delaware, Maryland, New Jersey, Pennsylvania, Virginia, Amtrak, CSX and Norfolk Southern. The study identifies opportunities to improve the region's existing rail assets, formulates a program of system wide rail investments in all five states; and recommends a public-private partnership to fund and implement the improvements. The study identifies necessary improvements totaling $6.2 billion across these five states over the next 20 years to relieve various choke points, requiring a cooperative effort among all levels of government and the railroads to plan, finance and deliver projects that alleviate rail system choke points.

Source: Cross Harbor Freight Movement Project

High quality and carefully designed wayfinding signs can help orient tourists, Metro riders, and others so they can easily find their intended destinations.

Policy T-3.4.1: Traveler Information Systems

Promote user-friendly, accurate, and timely traveler information systems for highways and transit such as variable message signs, Global Positioning System (GPS) traffic information, and real-time bus arrival information, to improve traffic flow and customer satisfaction. 417.3

Action T-3.4.A: Transit Directional Signs

Establish a joint city/WMATA/private sector Task Force to improve and augment pedestrian directional signs and system maps for transit riders, especially at Metro station exits, and at various locations in Central Washington. 417.4

Action T-3.4.B: Regional Efforts

Through a regionally coordinated effort, continue to explore and implement travel information options such as the provision of printed and electronic maps and Internet-based information to tour bus operators, travel agents, and trucking companies. 417.5

T-3.5 Tour Bus Operations 418

As a major tourist destination, the District is host to over 100,000 tour buses every year, an average of almost 300 per day. Currently, only a limited number of areas are available for tour buses to load and unload passengers or park, and buses are restricted to a three minute idling time limit, which includes loading/unloading passengers. These conditions and regulations create difficulties for tour bus operators. As a result, tour buses tend to stop or park on neighborhood streets and circle the blocks near the tourist loading areas to avoid exceeding the limits on idling times. Many tour bus operators remain in the District only long enough to take tourists to major attractions and then leave, resulting in loss of revenues as tourists shop, dine and spend the night in suburban jurisdictions. There is a need to identify clearly defined parking areas and loading zones for tour buses. 418.1

Policy T-3.5.1: Tour Bus Facilities

Develop carefully-planned parking areas, loading zones, and dedicated routes for tour buses to prevent tour bus parking in residential neighborhoods. Enforce and apply fines and penalties when tour bus parking and route regulations are violated. 418.2

Action T-3.5.A: Tour Bus Management Initiative

Implement the recommendations of the DDOT Tour Bus Management Initiative, prepared to ameliorate long-standing problems associated with tour bus parking, roaming, and idling around the city's major visitor attractions. 418.3

T-4 Safety and Security 419

Transportation has always played an important role in Washington's security by providing a means of evacuation as well as routes for emergency and relief services. The city must continue to plan for and safeguard its transportation system, protecting its value as a major component of our urban infrastructure and economy. 419.1

T-4.1 Emergency Preparedness, Transportation, and Security 420

In light of the events of September 11, 2001, every major American city has embarked on emergency preparedness and traveler information systems designed to inform citizens how to respond in the event of an emergency. As the Nation's Capital, this is a critically important issue for the District. 420.1

Should the District face an emergency situation, the transportation system provides the critical means to evacuate residents, workers and visitors, as well as support the movement of emergency service response teams. Depending on the nature of an incident, persons may need to rely on car, train, bus, bike, and/or walking. Maintaining and planning for a well-functioning, coordinated system that can adapt to the needs of an incident is essential. Given the District's reliance on the regional transportation network in the event of an evacuation, close coordination with partners in Maryland and Virginia is also needed. 420.2

The District's Department of Transportation is the lead District agency for all regional and federal emergency transportation coordination and activities that affect the District. Another key agency is the District's Emergency Management Agency (DCEMA), which partners with District agencies, businesses and communities to help plan for management of an emergency event. There is also increasing coordination between regional departments of transportation, the federal government, and other agencies, primarily through the Metropolitan Washington Council of Governments. 420.3

The region has identified 25 corridors radiating from downtown Washington as emergency event/evacuation routes. Each of the routes extends to the Capital Beltway (I-495) and beyond. Customized roadway signs allow for easy identification of direction; outbound signs direct motorists to I-495 in Maryland and Virginia, and inbound signs show images of monuments. Evacuation routes are also identified by street name signs, which include the red and white District flag. 420.4

If directions are given to evacuate the central business district, Pennsylvania Avenue, NW, between Rock Creek Park and the US Capitol serves as the dividing line for routes. None of the evacuation routes cross each other, and no vehicles would be permitted to cross Pennsylvania Avenue. Traffic signals

Should the District face an emergency situation, the transportation system provides the critical means to evacuate residents, workers and visitors, as well as support the movement of emergency service response teams. Depending on the nature of an incident, persons may need to rely on car, train, bus, bike, and/or walking.

Not only should the District continue to plan for evacuations at the local level and provide the necessary information to the public, it must also improve coordination with its regional partners and take advantage of new technologies, as well as federal support, in preparing for emergencies.

would be timed to move traffic away from the incident area. In addition, police officers would be present at 70 critical intersections on the evacuation routes within the District to expedite the flow of traffic and prevent bottlenecks. There are also six bike trails identified that could be used by cyclists or pedestrians in the event of an evacuation. 420.5

DCEMA has produced several sets of plans relating to emergency preparedness. Its Emergency Response Plan includes a transportation section, which details District policies, actions and responsibilities related to traffic management, the coordination of transportation logistics, and the status and/or restoration of the transportation infrastructure. In addition, DCEMA drafted 39 Community Emergency Preparedness Plans for neighborhood clusters throughout the District to help residents prepare for emergencies. However, these plans do not contain cluster-specific information regarding neighborhood evacuation routes, modes of travel and other transportation-related issues. 420.6

Although the District is more equipped now than it has been in the past, additional planning is needed in order to better prepare the region's transportation network and emergency management agencies. Not only should the District continue to plan for evacuations at the local level and provide the necessary information to the public, it must also improve coordination with its regional partners and take advantage of new technologies, as well as federal support, in preparing for emergencies. 420.7

As home to the largest concentration of federal agencies and facilities in the Country, the District and the federal governments must continue to coordinate extensively to ensure the District's security and mobility needs. Over the past decade, several of the District's streets have been closed by the federal government to protect the White House and the US Capitol Building. These street closures have disrupted mobility for pedestrians and vehicles, requiring extensive re-routing of Metrobus and vehicular travel through downtown and Capitol Hill. This has led to delays for residents, workers, tourists, and emergency service providers. 420.8

Please refer to the Community Services and Facilities Element for additional policies and actions related to Emergency Preparedness and the Urban Design Element for policies on Security and Design.

Policy T-4.1.1: Balancing Security Measures and Desires for an Open City

Balance and mitigate security requirements against the daily mobility, efficiency, and quality of life concerns of District residents and visitors, and the potential for negative economic, environmental, and historic impacts. The trade-offs associated with potential street closures or changes to transportation access must be adequately assessed. 420.9

Policy T-4.1.2: Coordination with the Federal Government

Work closely with federal agencies to find alternative security solutions and to avoid street closings to the greatest possible extent. 420.10

Policy T-4.1.3: Providing Redundancies

Provide alternate routes and modes of travel ("redundancies") across the District to promote the security of District residents and visitors and reduce the effects on non-routine incidents. 420.11

Action T-4.1.A: Pennsylvania Avenue Closure

Advocate for the re-opening of Pennsylvania Avenue and E Street in the vicinity of the White House as conditions allow, and pursue federal funding to mitigate the effects of the closure of these streets on District circulation. 420.12

Action T-4.1.B: Coordination with the Federal Government

Continue to work with the Federal government to assess the impacts of security measures on the quality of life of District residents and businesses. 420.13

Action T-4.1.C: Emergency Evacuation Plan

Continue to refine an emergency evacuation plan that describes not only evacuation procedures and routes, but that also defines the modes of transportation in case certain modes, such as the Metrorail system, become unavailable. Increase public education and awareness of local emergency management plans, and make information on evacuation routes and procedures more accessible and understandable to residents, employees, and visitors. 420.14