2 Growth, Travel Patterns, and Needs
The District of Columbia’s Comprehensive Plan, Generalized Policy Map shows what the future could hold for the city from a land use policy perspective.
CHAPTER 2: Growth, Travel Patterns, and Needs

I. Growth

Between 2010 and 2013, the District’s population increased by more than 1,100 people each month and employment grew by thousands of jobs. The growth experienced by the city in that time is only the beginning of what is forecast to come in D.C. and in the region.

More people in the District will mean more activity, adding to the demand for transportation. To meet future needs, the city’s transportation system and its travelers will need to continue to be flexible and adaptable.

To understand the context in which the moveDC plan needed to be developed, the District of Columbia Department of Transportation (DDOT) explored current and forecast (2040) population and employment conditions in the city and region, current travel trends, and technology’s evolving influence in transportation and mobility. The moveDC planning process also reached out to people through a research survey to understand their likes, dislikes, attitudes, and behaviors related to transportation decision-making and future mobility solutions.

The District of Columbia’s Office of Planning (OP)—which also serves as the data center for demographic analysis and forecasting—is responsible for preparing District population and employment forecasts, which they also provide to MWCOG. As OP prepared forecasts to include in Round 8.3, they sought to account for significantly changing employment and population dynamics in the District. Draft OP population and employment forecasts described from this point forward in moveDC are referred to as “draft OP forecasts.”

OP’s population forecasts were influenced by a higher population and employment growth rate between 2010 and 2013 than those experienced between 2000 and 2010, the period that influenced the approved MWCOG forecasts. The draft OP forecasts took into account assumptions including:

• Continuing demand for housing
• District’s attractiveness to college graduates and employees 25 years of age and older
• An increasing share of new households staying in the District and forming families
• An increasing birth rate and slight decline in infant mortality rate
• Growth in the number of college dorm rooms
• Growth in long-term care facilities and capacity
• Strength in the private sector economy
• Increase in federal hiring after 2015
• Gradually declining office vacancy rate after 2015

II. Forecasting Residents and Jobs

The Metropolitan Washington Council of Governments’ (MWCOG) Cooperative Forecasting program provides regularly updated population, household, and employment forecasts for use in planning activities. The term “employment” used throughout this document refers to jobs, not the status of population in terms of whether people are employed or not. MWCOG’s cooperative forecasts are coordinated among member jurisdictions (such as the District of Columbia, the City of Alexandria, the City of Fairfax, and Prince George’s County, among many others) to improve their reliability and accuracy across the entire region.

Each series of forecasts—prepared for a period of 20 to 30 years—constitutes a “Round,” in MWCOG terminology. When the moveDC process began, Round 8.2 provided forecast information for the year 2040. As MWCOG population and employment forecasts are described from this point forward in the document, they are simply referred to “approved MWCOG forecasts.”

With significant growth forecast to come the District and region, investment in the transportation system and coordinated land use planning is necessary to maintain the quality of life in the District. Without changes to the system, congestion on the District’s roadways and transit corridors will make travel difficult at peak times and will impact the quality of life in neighborhoods. More multimodal traffic on all streets will
impact the safety of all users. Economic development centers in the District could suffer, possibly pushing growth out into the region and further burdening the District’s transportation system. moveDC is a plan developed in response to these factors, as well as an understanding of user perceptions of the current system.

A. POPULATION GROWTH

In 2010, the District’s population eclipsed 600,000 people, marking the first decade of population growth in D.C. in a half-century. Between 2000 and 2010, the District’s population grew by about 30,000 people, or 0.5 percent annually. Between 2010 and 2012, the rate of change of the District’s population increased significantly. During this period, the city grew at a rate of approximately 2.5 percent annually or by about 1,100 people each month.

Figure 2.1 summarizes the historic and projected population for the district. Current MWCOG forecasts indicate that the District’s population will increase by about 170,000 people between 2010 and 2040 (about 0.8 percent annual growth). This will result in the District reaching a population of nearly 770,000 people by 2040. Draft OP forecasts anticipate a higher rate of growth during this same period. These forecasts indicate that the District will reach a population of nearly 900,000 people by 2040 (about 1.3 percent annual growth). Investments in critical transportation infrastructure and services are expected to:

- Increase household size and number of family households in the District
- Increase the population of seniors in the District
- Attract more single households

Sources: U.S. Census, District of Columbia Office of Planning, MWCOG Approved Round 8.2 Forecasts
Changes in the District’s population composition will necessitate a continued transportation focus on improving accommodation and safety for people of all ages and ability levels. More significant levels of protection for travelers and more widely dispersed transportation choices will need to be among the many emphases of the future transportation system.

**Figure 2.2** shows change in population density from 2010 to 2040 based on approved MWCOG forecasts. Areas of forecast population growth may need additional transportation services to support the increased population density.

**B. EMPLOYMENT GROWTH**

In 2010, approximately 785,000 jobs existed in the District. Between 2005 and 2010, the District’s employment grew by about 36,000 jobs, or 0.9 percent annually.

**Figure 2.3** shows historic and projected employment in the District. Based on MWCOG forecasts, the District’s employment is expected to increase by nearly 200,000 jobs from 2010 to 2040 (about 0.8 percent annual growth). This will result in a District employment of approximately 980,000 jobs. Draft OP forecasts anticipate that the District’s employment will increase more dramatically to approximately 1 million jobs by 2040. Transportation investments will be an important part of the District retaining its competitive edge in retaining and attracting new and expanded employment opportunities.

**Figure 2.5** shows change in employment density from 2010 to 2040 based on approved MWCOG forecasts. An efficient transportation system will be an important part of long-term business success in the District, especially around projected centers of employment.

**C. ACTIVITY**

Often, when population and employment are viewed separately they unintentionally exclude areas with significant density that is the result of mixing of population and employment centers. To better identify and understand the scale of these areas, particularly in communities with highly mixed land uses, population and employment are combined and evaluated as “activity.” **Figure 2.4** shows a summary of population, employment, and activity in the District in 5-year intervals based on approved MWCOG forecasts. **Figure 2.6** shows 2010 activity density and **Figure 2.7** shows 2040 activity density based on approved MWCOG forecasts.

More dense activity areas need more transportation connections to work effectively. They must be served by multiple modes—transit, driving, walking, biking, etc., to be able to support the activity without overcrowding the system.
Growth is expected to occur along the 16th Street and Georgia Avenue corridors in places like Mt. Vernon, Shaw, Columbia Heights, Petworth, and Walter Reed. Other pockets of growth include M Street SE/Navy Yard, Anacostia, and the St. Elizabeths campus.
CHAPTER 2: GROWTH, TRAVEL PATTERNS, AND NEEDS

Figure 2.3: Historic and Future Employment Summary

Sources: U.S. Census, District of Columbia Office of Planning, MWCOG Approved Round 8.2 Forecasts

Figure 2.4: Population, Employment, and Activity Summary

Source: MWCOG Approved Round 8.2 Forecasts
D. REGIONAL GROWTH

Like the District, the Washington metropolitan area is forecast to grow in the coming decades. Table 2.1 is a summary of existing (2010) and future (2040) forecasts for the District and Washington metropolitan area. The region is expected to add 2 million residents and 1.6 million jobs by 2040.

Continued transportation investment in the region is necessary to sustainably accommodate this growth and maintain the competitiveness of the District and the region nationally and internationally. moveDC identifies many places where the District will need to coordinate with regional partners in large-scale and region-serving investments such as commuter rail, Metrorail, and roadway management.

While continued strategic transportation investment will be an important part of the success of the District and region, integrated land use and transportation planning also must play an important role in the region’s future. Identifying and adopting a more sustainable pattern of regional growth and transportation investment has the potential to dramatically change the landscape of livability regionwide.

Table 2.1: District and Regional Population and Employment Summary

<table>
<thead>
<tr>
<th>Area</th>
<th>Population</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2010</td>
<td>2040</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>602,000</td>
<td>771,000</td>
</tr>
<tr>
<td>Washington metropolitan area</td>
<td>6,626,000</td>
<td>8,661,000</td>
</tr>
</tbody>
</table>

Source: MWCOG Approved Round 8.2 Forecasts
FIGURE 2.5 – FORECASTED CHANGE IN EMPLOYMENT DENSITY (2010 – 2040)

Growth is expected to occur in NoMa and around Union Station, along M Street SE, Buzzard Point, and the St. Elizabeths campus.
FIGURE 2.6 – 2010 ACTIVITY DENSITY

In the District, areas with the highest activities densities have more than 250 jobs and people per acre. These densities are located in the Central Employment Area and near Union Station.
FIGURE 2.7 – 2040 ACTIVITY DENSITY
Growth is expected to occur in NoMA, at Judiciary Square, and along M Street SE.
III. Travel Patterns and Investments

A. COMMUTING PATTERNS

Nearly three-quarters of the District’s workforce comes from outside D.C. Approximately one-third of employed District residents work outside of the District. As the future transportation system is planned, the needs of both groups must be considered. Figures 2.8 and 2.9 show commuting patterns for District residents and District workers, respectively.

**Figure 2.8: Where District Residents Work**
About 65 percent of employed District residents work within the District.

**Figure 2.9: Where District Workers Live**
Nearly 75 percent of the District’s workforce comes from outside D.C.

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Note: This data was obtained from 2011 employment data from the U.S. Census Bureau’s Longitudinal-Employer Household Dynamics (LEHD) Program. This data includes a limited number of federal civilian employees due to security concerns for specific agencies.

Source: U.S. Census Bureau’s Longitudinal-Employer Household Dynamics (LEHD) Program

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**Travel in D.C. is Evolving**

- **More people are taking transit.** The transit mode share—the percentage of travelers using a particular type of transportation—increased 5.1 percent between 2000 and 2010.
- **Biking is increasingly popular.** The bike mode share for D.C. is currently about five times the regional average. Much of the surge in bicycle use in D.C. is attributable to recent investments in facilities and an increase in advocacy and awareness.
- **More people are working from home.** Increased teleworking options are encouraging people to stop making long commutes.
- **Rate of car ownership is decreasing.** The District has the highest percentage of no-vehicle households in the region.
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Commute travel mode varies widely depending on the worker’s place of residence. Figure 2.10 shows mode of travel to work in Washington metropolitan area, the District, and a walk-friendly neighborhood in D.C.

Impact of Job Location
The District is one of the largest importers of workers for its employers in the nation. Figure 2.11 shows how the city’s daytime population approximately doubles with the influx of commuters and visitors to the city.

In 2012, there were approximately 1.3 jobs per District resident. Ideally, as the District’s population grows, jobs in D.C. could increasingly be filled by District residents. As more District residents work in the city, commutes will be shorter and have less impact on the transportation network.

B. PERSONAL TRIPS
Work trips are not the only trips made on D.C.’s transportation system. Other significant types of trips that affect the operation of the system include school, sightseeing, recreation, religious service, shopping, dining, and entertainment.

Visitors (non-workers) have a significant benefit to the District, but a tremendous impact on the city’s transportation system. Every indication suggests that the number of people visiting the District will increase in the future. A record number of people (approximately 17.9 million) visited the District in 2011.

Visitor Statistics:
17.9 million #7 in the U.S. for overseas visitors
→ For every one DC resident, there were 29 visitors
→ Every 235 visitors creates a new job
→ Tourists spent $473 million on transportation (not including airfare)

Source: Destination D.C., 2011

Source: American Community Survey, MWCOG

Figure 2.10: How District Workers Commute

Figure 2.11: Job Locations

Source: MWCOG Approved Round 8.2 Forecasts
Figure 2.12: 2040 Daily Person Trip Flows for District to District Trips

Source: Districtwide Travel Demand Model, 2013

Legend
Change in Daily Trip Flow 2010 to 2040
(Two-Way Trips)
- Yellow: 2,000 to 3,000
- Orange: 3,001 to 5,000
- Red: 5,001 to 7,500
- Pink: 7,501 to 10,000
- Purple: 10,001 to 15,000
- Blue: 15,000 to 22,500
C. TRIP FLOW
moveDC evaluated general travel patterns in the greater D.C. area to better understand the lines along which people travel within, to, from, and through the District. Districtwide Travel Demand Model data for 2010 and 2040 was evaluated on an area-wide basis—including District neighborhoods and major corridors outside of the District—during moveDC to develop the trip flow summary.

Figures 2.12 and 2.13 show a summary of daily person trip travel between zones within the District and the region. On each figure, the scale of the lines between zones reflects the magnitude of trips between zones—thicker lines mean more travel between the two points. The lines do not show specific travel paths; instead, they show how much people want to get from each point of origin to each destination.

Figure 2.13: 2040 Daily Person Trip Flows for Regional Trips
Source: Districtwide Travel Demand Model, 2013
D. TRAVEL DEMAND

Vehicular Demand

Growth in the District and region will increase the overall number of trips made within, to, from, and through the District. Without sustained investment to diversify the District’s transportation system, the number of vehicular trips will increase significantly as will vehicular delay. Table 2.2 shows a summary of daily trips under existing (2010) and future (2040) baseline conditions. Table 2.3 shows mode share data for the same conditions.

Table 2.2: Existing Model (2010) and Future Baseline (2040) Daily Trips

<table>
<thead>
<tr>
<th>Travel Mode</th>
<th>District-District Trips</th>
<th>To/From District Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motorized (drive)</td>
<td>639,000</td>
<td>756,000</td>
</tr>
<tr>
<td>Transit</td>
<td>314,000</td>
<td>384,000</td>
</tr>
<tr>
<td>Non-Motorized (walk and bike)</td>
<td>450,000</td>
<td>698,000</td>
</tr>
</tbody>
</table>

Notes:
1. Motorized includes private vehicle (driver and passenger) and commercial vehicles
2. Transit is bus, streetcar, high-capacity surface transit, Metrorail, commuter rail, and water transit

Table 2.3: Existing Model (2010) and Future Baseline (2040) Mode Share

<table>
<thead>
<tr>
<th>Travel Mode</th>
<th>District-District Trips</th>
<th>To/From District Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motorized (drive)</td>
<td>45.5%</td>
<td>41.1%</td>
</tr>
<tr>
<td>Transit</td>
<td>22.4%</td>
<td>20.9%</td>
</tr>
<tr>
<td>Non-Motorized (walk and bike)</td>
<td>32.1%</td>
<td>38.0%</td>
</tr>
</tbody>
</table>

Notes:
1. Motorized includes private vehicle (driver and passenger) and commercial vehicles
2. Transit is bus, streetcar, high-capacity surface transit, Metrorail, commuter rail, and water transit
3. Columns may not total 100% due to rounding
4. Approx. average auto occupancy for District trips is 1.38 in the base year, 1.41 in the future baseline
5. Approx. average auto occupancy for to/from District trips is 1.26 in the base year, 1.31 in the future baseline

Table 2.4 shows a summary of modeled existing (2010) and future (2040) baseline vehicular system performance data. As shown in this table, in the limited investment scenario that the future baseline condition represents, vehicular delay could increase by approximately 40 percent within D.C., while the number of vehicle miles traveled only increases by 14 percent.
Evaluating volume to capacity (V/C) ratios is one of the ways to understand where congestion may exist on streets under existing and future traffic conditions. When a V/C ratio exceeds 1.0, it means that a roadway is over capacity—there is more demand (traffic) than capacity (space for that traffic).

Figures 2.14 and 2.15 show modeled existing (2010) and future (2040) roadway conditions during the p.m. peak hour, based on outputs from the Districtwide Travel Demand Model. The red and black colors shown in the maps indicate locations where congestion is likely to be present. Lighter colors (green and orange) are areas where congestion is less likely to be present.

In 2040, the District's freeways and many major arterials would be as or more congested than they are under existing (2010) modeled conditions. The modeled results also may understate the actual level of congestion that could exist in the network.

### Table 2.4: Existing Model (2010) and Future Baseline (2040) Vehicular System Performance

<table>
<thead>
<tr>
<th>Measure</th>
<th>Model Base Year</th>
<th>Future Baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Miles Traveled (VMT)</td>
<td>9.13 million</td>
<td>10.45 million</td>
</tr>
<tr>
<td>Vehicle Hours Traveled (VHT)</td>
<td>335,000</td>
<td>389,000</td>
</tr>
<tr>
<td>Delay (Hours)</td>
<td>21,000</td>
<td>30,000</td>
</tr>
</tbody>
</table>

Note: These values are for the District of Columbia only.

### Figure 2.14: 2010 p.m. Peak Hour Volume to Capacity (V/C) Ratios

Source: Districtwide Travel Demand Model, 2013

### Figure 2.15: 2040 p.m. Peak Hour V/C Ratios (Existing Network with Committed Projects)

Source: Districtwide Travel Demand Model, 2013
due to the fact that models do not show cumulative effects of major network congestion (such as queuing).

From a system planning perspective, only investing in the projects that DDOT is already committed to funding will not address the city’s mobility needs or move the District toward its ultimate goals. Increasing congestion is not only a personal inconvenience, but also a potential health and public safety risk. More congestion on critical corridors has the potential to affect fire and emergency response times and could limit the city’s ability to respond to major events and emergencies.

Additional transportation investment will be needed to address existing network deficiencies and improve mobility citywide. A coordinated plan for investment will be essential in support of the city’s continued growth and welfare.

Transit Demand
The District’s transit network—made up of rail, buses, ferries, and shared bicycles—carries approximately 42% of the District’s commute trips every weekday. Components of the transit network already are acutely crowded during peak hours and are reaching capacity. This includes Metrorail stations in Downtown (Union Station, Metro Center, Farragut North, Farragut West, and Gallery Place-Chinatown) and bus services operating along the Pennsylvania Avenue SE, 16th Street NW, Georgia Avenue NW/7th Street NW, Benning Road NE/H Street NE, 14th Street NW, and Anacostia/Congress Heights corridors.

By 2040, 170,000 more residents and 200,000 more jobs will locate in the District, generating more than 2 million new trips each day—200,000 of which are projected to be on transit crossing the District’s border from neighboring Maryland and Virginia.

Elements of the transit system are already at, or approaching, capacity. Being able to accommodate the existing percentage of trips taken by transit in the future will require investments in the transit network. Figure 2.16 shows projected (2040) crowding on the Metrorail network with 2013 regional constrained long-range transportation plan projects and Metro 2025 projects.
E. REGIONAL TRANSPORTATION INVESTMENT

The District is not alone in planning for multimodal transportation system improvements. MWCOG maintains the National Capital Region’s Financially Constrained Long-Range Transportation Plan (CLRP). Supplementing the region’s most recent CLRP, MWCOG adopted the Regional Transportation Priorities Plan (RTPP) in 2014.

The CLRP identifies all regionally significant transportation projects and programs that are planned in the Washington metropolitan area during the next 35 years. The CLRP is updated annually. Its projects and programs are developed cooperatively by the region’s jurisdictional bodies and transportation agencies represented on the National Capital Region Transportation Planning Board (TPB).

More than 750 projects are included in the 2013 CLRP. These projects range from relatively straightforward and modest-scale projects to billion-dollar highway and transit projects. The CLRP informs the Transportation Improvement Program (TIP), a 6-year financial program that describes the schedule for obligating federal funds to state and local projects. The TIP also includes information for all modes of transportation and is updated annually.

The TIP represents intent to implement specific projects and the anticipated flow of funding. Projects in the TIP’s first year are eligible to receive federal funding. Figure 2.17 is a summary of projects in the 2013 CLRP.

Regional priorities identified in the RTPP include:

- **Meeting existing obligations.** Preserving and maintaining existing systems
- **Strengthening public confidence and ensuring fairness.** Pursuing greater accountability, efficiency, and accessibility
- **Moving more people more efficiently.** Alleviating congestion and crowding while accommodating future growth

The purpose of the RTPP is to identify transportation strategies that best promote the TPB’s goals for economic opportunity, transportation choices, system safety and efficiency, quality of life, and environmental stewardship. The RTPP, informed by regional public opinion, identifies strategies that the region agrees are the top priorities for addressing the most pressing challenges that the region faces as well as long-term investment strategies.
IV. User Preferences

The public engagement process for moveDC interacted directly with thousands of users of the transportation system through public workshops, advisory committees, social media, and conversations. The process also engaged a random sample of people from the District, Northern Virginia, and neighboring Maryland counties in a comprehensive research survey.

Designed to provide insight into people’s perceptions and opinions about travel and transportation in the District, the survey helped moveDC better understand people’s attitudes and behaviors related to transportation decision-making and travel under current and future conditions.

A. MODE CHOICE DECISIONS

The survey found that a number of factors appear to strongly influence how people choose to travel—walking, bicycling, transit, and driving. The following were factors in people’s mode choice decision-making:

- **Time.** People (91%) want to make choices on mode that allow them to have a predictable arrival time, while at the same time limiting their trip’s time duration.
- **Control.** People (79%) expressed that the ability to control the trip (arrival or departure time flexibility) was important.
- **Financial assistance.** Half of respondents (51%) who said that they used transit also said that they received some type of fare support assistance. By contrast, only 15% of people who have to pay to park receive assistance from their employer for parking.
- **Exercise, health, enjoyment and recreation, and travel efficiency (speed/time).** Each of these factors were cited as reasons people chose to bicycle and walk, with the addition of short travel distance for walking.

B. PERCEPTION OF THE EXISTING SYSTEM

The survey asked respondents about the existing transportation system and their experience with it. People held the following perceptions of the existing system:

- **Change is needed to the transportation system.** More than 60% of respondents believe that changes need to be made to the bus, rail, and roadway systems.
- **Reliability is a concern.** More than half (53%) of the respondents believed that it is difficult to predict how long a trip will take.
- **Travel conditions are worsening.** About half (51%) of respondents expressed a belief that it is getting more difficult to travel in the District.

C. SUPPORT FOR CHANGES

In addition to asking about current conditions, the survey also sought insight into support for different approaches to improving transportation conditions. The survey found:

- **Neighborhood connectivity is important.** Respondents (71%) indicated that they would give priority to changes that increase neighborhood connectivity.
- **Sidewalks should be a priority.** Respondents—especially those from the District—expressed strong support (77%) in having sidewalks on both sides of streets.
- **Better transit is important.** More than half of respondents (56%) strongly supported dedicated lanes for transit.

Research Survey Statistics

- 1,168 total respondents
- 73% from D.C., 14% from Maryland, and 13% from Virginia
- 84% commuters
- 16% non-commuters
- 11% use only single-occupancy vehicles to travel
• More bicycle facilities are desired. More than half of respondents (54%) supported more investment in bicycle infrastructure. Respondents expressed little support for transit fare increases. Support for transit fare increases was low regardless of whether the increases resulted in more frequent service, service during more hours of the day, or more direct service.

D. FUTURE CHOICES
The survey provided additional insight into the decisions people would be willing to make in terms of travel, including:

• Expanded availability of flexible work schedules would encourage off-peak travel. Nearly 40% of people said that their employers do not offer flexible work schedules. Of this group of respondents, nearly 60% said that if their employer offered them schedule flexibility, they would travel during less busy periods.

• Willingness to walk long distances to transit is limited. Approximately two-thirds of respondents said that they would be unwilling to walk more than five blocks to a transit station.

• Pre-tax benefits are attractive in encouraging transit use. Half of respondents said that availability of a pre-tax benefit for transit fare payment would increase the likelihood that they would choose transit, including 33% of respondents who say that they currently commute by single-occupant vehicle.

• Many factors make transit less attractive for some people. The principal reasons people cited for not using transit included lack of proximity of the service to home (31%) or desired destination (38%), concern for service reliability (37%), crowding on transit (30%), service unavailability (27%), and fare (23%).

• More and better bicycle facilities and services would encourage more people to bicycle. Approximately 30% of respondents said that the strongest incentives to persuade them to bicycle included more bike lanes and trails, bike lanes and trails leading to transit stops and stations, and enclosed bicycle parking at destinations.

Additionally, custom route maps for their trips would increase their bicycle use.

E. INFLUENCES FOR MOVEDC
The survey provided valuable insight into people's attitudes and behaviors. It afforded the planning process perspective on people's preferences and beliefs. In addition to the research survey, the public engagement process for the plan generated hundreds of comments on what users value in the transportation system. The key themes included:

• Reliability is very important. It influences the modes people use to travel and the times they travel. Users place a high value on investments that increase travel reliability.

• Investments need to be diverse. People clearly stated that the existing bus, rail, and highway systems already need investment, and will continue to need investment in the future.

• Increased costs are not attractive. People want increased investment, but are not necessarily prepared to pay for it, since the Washington region already faces high housing and transportation costs for users. Future investments will need to be efficient and justify expenditures.
V. Transportation and Technology
The technology-based tools that people in the District and region use to make choices on how, where, and when to travel are constantly evolving. The District has become a leading laboratory for the development and use of new technologies that allow people to make better-informed travel choices, while also making the transportation system more efficient and predictable.

A. TRANSPORTATION SHARING

Carsharing
Carsharing is becoming increasingly popular in locations across the country. In the simplest sense, carsharing makes a fleet of vehicles available to members on an on-demand, as-needed basis. These systems typically cater to short-term use of the vehicles. Carsharing systems generally permit people to check out a car at one location and return it to another.

Personal vehicle use in the U.S. averages approximately one hour per day, but costs approximately $715 per month. The high cost and low frequency of personal vehicle use make carsharing very appealing to many people from practical and financial perspectives.

On average, carsharing members drive 31% less than when they owned a personal vehicle. Some carsharing system operators are reporting that for every rented carsharing vehicle, there are seven to 15 fewer owned cars on the road. As of 2013, there were more than 1,000 carsharing vehicles in the D.C. region.

Bikesharing
Bikesharing programs make bicycles available for shared use to individuals on a short-term basis, similar to carsharing systems. In addition to the public transit role that bikesharing systems fulfill, they also expand transit access by increasing traditional 5- or 10-minute walking distances to far greater distances that can be easily covered while bicycling.

D.C.’s bike sharing system—Capital Bikeshare (CaBi)—has achieved tremendous success. According to the Capital Bikeshare Member Survey Report (2013), CaBi’s members drive 198 fewer miles per year after joining CaBi. When considering the number of total members, that results in more than 4.4 million miles traveled by bicycle instead of car.

B. TECHNOLOGY
Increasingly, people are more connected to transportation information. Real-time transportation information allows people to make informed choices about when and how to travel. It also provides information on what the trip experience will be like in terms of time and congestion. Information delivered through smart phone apps, transit screens, and the internet has improved people’s ability to make informed travel choices.

Among the many technology-based transportation innovations under development, driverless cars have the potential to provide broad benefits for society, businesses, and the economy. As reported by the industry working to develop the technology, driverless cars have the potential to:

- Reduce traffic accidents by up to 90%
- Prevent 2 million annual crash-related injuries
- Save as many as 30,000 lives annually
- Increase efficiency through reductions in waste related to commuting and congestion—potentially 4.8 billion hours of commuting, 1.9 billion gallons of fuel, and more than $100 billion in lost worker productivity
- Reduce the size of the auto fleet by as much as 90% and increase the use of vehicles within the fleet from less than 10% to more than 75%

Driverless cars are just one of many technological innovations under development that have the potential to further revolutionize the transportation landscape.
Capital Bikeshare is helping residents, workers, and visitors of D.C. travel efficiently.