The District of Columbia’s Comprehensive Plan, Generalized Policy Map (excerpted on this page) shows what the future could hold for the city from a land use policy perspective.

Map source: District of Columbia Office of Planning, January 2012
CHAPTER 2:
Growth, Travel Patterns, and Needs

I. Growth

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

The increase in activity in the city accompanying anticipated growth will add to demand for transportation. To meet the needs of tomorrow, the city’s transportation system and its travelers will need to continue to be flexible and adaptable.

To understand the context in which the plan needed to be developed, moveDC 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. moveDC 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.
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 MWCOG and local government and state planning activities. The term “employment” used throughout this document refers to jobs, not the status of population in terms of whether they are employed or not. MWCOG’s cooperative forecasts are methodically coordinated among member jurisdictions to improve the regional reliability and accuracy in planning applications.

Each series of forecasts—prepared for a period of 20 to 30 years—constitutes a Round in MWCOG terminology. When the moveDC process was initiated, the most current adopted forecasts were Round 8.2, which were the same as Round 8.1 for the District. The Round 8.2 forecast horizon year was 2040. As MWCOG population and employment forecasts are described from this point forward in the document, they are simply referred to “approved MWCOG forecasts.”

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

What is clear from these projections at the District and regional level is that doing nothing is not an option. Without investment in the transportation system, the current ways of getting around the region will become untenable. 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, and some of the economic development centers in the District will not be able to function, possibly pushing that growth out into the region and thereby further burdening the District’s transportation system. moveDC is a plan developed in response to these factors, as well as our understanding and user perceptions of the current system.

Role of Forecasts

Population and employment forecasts are one of many tools used to provide context to planning process and support regional tools for transportation demand forecast development. The region’s population and employment forecasts are the regionally-accepted standard for use in planning applications. They are continually updated and evolve as conditions in the region change.
A. POPULATION

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.

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 approximately 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).

Figure 2.1 summarizes historic and projected population. Figure 2.2 shows change in population density from 2010 to 2040 based on approved MWCOG forecasts.
FIGURE 2.2: CHANGE IN POPULATION DENSITY (2010 – 2040)

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.

Legend

<table>
<thead>
<tr>
<th>Washington D.C. Boundary</th>
<th>Road</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quadrant Boundary</td>
<td>Railroad</td>
</tr>
<tr>
<td>Ward Boundary</td>
<td>Metrorail</td>
</tr>
<tr>
<td>Water</td>
<td>Station</td>
</tr>
<tr>
<td>Park</td>
<td>Line</td>
</tr>
</tbody>
</table>

Population Density Change: 2010 - 2040 (Approved MWCOG Forecasts)

- Minimal Change in Population
- Net Increase of Fewer than 5 people per Acre
- Net Increase of 5 to 10 people per Acre
- Net Increase of 10 to 15 people per Acre
- Net Increase of 15 to 20 people per Acre
- Net Increase of 20 to 75 people per Acre
B. EMPLOYMENT

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

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 1,000,000 jobs by 2040.

Figure 2.3 shows historic and projected employment in the District. Figure 2.5 shows change in employment density from 2010 to 2040 based on approved MWCOG forecasts.
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 five-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.

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 two million residents and 1.6 million jobs by 2040.

Continued transportation investment in the region is critical to sustainably accommodating this growth and maintaining 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.

Figure 2.4: Population, Employment, and Activity Summary
Source: MWCOG Round 8.2 forecasts, 2013

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>897,000</td>
</tr>
<tr>
<td>Washington metropolitan area</td>
<td>6,626,000</td>
<td>8,661,000</td>
</tr>
</tbody>
</table>

Sources: D.C. - District of Columbia Office of Planning; Region - MWCOG Approved 8.2 Forecasts
FIGURE 2.5: 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.

Legend
- Washington D.C. Boundary
- Quadrant Boundary
- Ward Boundary
- Water
- Park
- Road
- Railroad
- Station
- Line

Employment Density Change: 2010 - 2040 (Approved MWCOG Forecasts)
- Minimal Change in Employees
  - Net Increase of 1 to 5 Employees per Acre
  - Net Increase of 5 to 10 Employees per Acre
  - Net Increase of 10 to 25 Employees per Acre
  - Net Increase of 25 to 50 Employees per Acre
  - Net Increase of More than 50 Employees per Acre
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

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.

Note: This data was obtained from 2011 employment data from the US 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: US 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 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 in addition to long and unpredictable congestion are discouraging people from making long commutes.
- **Car ownership is decreasing.** The District has, by far, the highest percentage of no-vehicle households in the region.
Commute travel mode varies widely depending on the worker’s place of residence. The following figures show mode of travel to work in Washington metropolitan area, the District, and a walk-friendly neighborhood in D.C.

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 important, but they are not the only trips made in D.C. Other significant types of trips that affect the operation of the District’s transportation system include school, sightseeing, recreation, religious service, shopping, dining, and entertainment trips.

Visitors (non-worker) 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)

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Source: American Community Survey - 2011: 1-Year Estimates

**Impact of Job Location**

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

### District of Columbia

**2010 Population to Employment Ratio**

- Population: 43%
- Jobs: 57%

### Metropolitan Washington Region

**2010 Population to Employment Ratio**

- Population: 62%
- Jobs: 38%

Source: Approved MWCOG Forecasts

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Destination D.C., 2011
Figure 2.10: 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

General travel patterns in the greater D.C. area were evaluated to better understand primary desire lines for 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 2.10 and 2.11 show a summary of daily person trip travel flows 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. The lines are not indicative of a specific travel path; instead, they show the magnitude of desire between point of origin and destination.

Figure 2.11: 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) modeled 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
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. In theory, 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 2.12 and 2.13 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 blue 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.

As shown in the figures, the District’s freeways and many major arterials would be as or more congested than they are under existing (2010) modeled conditions in 2040. The modeled results also may be understating the actual level of congestion that could existing in the network due to the fact

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 2.12: 2010 p.m. Peak Hour Volume to Capacity (V/C) Ratios
Figure 2.13: 2040 p.m. Peak Hour V/C Ratios (Existing Network with Committed Projects)
that models do not show cumulative effects (queueing) of major network congestion.

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

**Transit Demand**

The District’s transit network—made up of rail, buses, ferries, and shared bicycles—carries approximately 42 percent 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 two 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.

With elements of the transit system already at, or approaching capacity, continuing to accommodate a share of trips by transit equal to existing will require investments in the transit network. **Figure 2.14** 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 over 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 six-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 2.15 is a summary of projects in the 2013 CLRP.

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.

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

Figure 2.15: Summary of 2013 CLRP Projects
(Source: MWCOG, 2013)
IV. User Preferences and Trade-offs

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

This survey was designed to provide insight into people’s perceptions and opinions about travel and transportation in the District. The goal of the survey was to better understand people’s attitudes and behaviors related to transportation decision-making and travel under current and future conditions.

Mode Choice Decisions

The survey found that a number of factors appear to strongly influence the choices people make in terms of travel mode—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 percent 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.

With regard to bicycling, respondents who chose to bicycle said that they did so for exercise, health, enjoyment and recreation, and travel efficiency (speed/time) purposes. People who chose to walk did so for most of the same reasons and also said that their short trip length influenced their decision as well.

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

Perception of the Existing System

The survey asked a number of questions about the existing transportation system and people’s experience with it. The following were perceptions of the existing system:

- **Change is needed to the transportation system.** More than 60 percent 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—highlighting a concern for system reliability.
- **Travel conditions are worsening.** About half (51%) of respondents expressed a belief that it is getting more difficult to travel in the District.

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 expressed strong support (77%), especially
respondents from the District, in having sidewalks on both sides of streets.

- **Better transit is important.** More than half of respondents (56%) strongly supported dedicated lanes for transit.
- **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.

**Future Choices**

The survey provided additional insight into the decisions people would be willing to make in terms of travel.

- **Expanded availability of flexible work schedules would encourage off-peak travel.** Nearly 40 percent of people said that their employers do not offer flexible work schedules. Of this group of respondents, nearly 60 percent 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 percent 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.** People (approximately 30%) said that more bike lanes and trails, bike lanes and trails to transit stops and stations, and enclosed bicycle parking were the strongest incentives to persuade them to bicycle. Additionally, custom route maps for their trips would increase their bicycle use.

**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. This feedback echoed the research survey findings. The key themes from the survey and other engagement were:

- **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 were clear in stating that the existing bus, rail, and highway systems already need investment. They said that bus, rail, and highway systems will need investment in the future.
- **Increased costs are not attractive.** In the abstract, higher costs for transportation are not attractive to users. 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 Sharing 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. In many ways, the District has become a leading laboratory for the development and use of new technologies that allow people to make better and better-informed travel choices that suit them, 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. Generally, these systems 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 combine to make carsharing very appealing from practical and financial perspectives to many people.

On average, carsharing members drive 31 percent 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 Washington 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 bicycling.

D.C.’s bike sharing system—Capital Bikeshare (CaBi)—is a 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, the nearly 200 miles per member results in more than 4.4 million miles not driven.

On average, each member saves about $800 per year on personal travel cost. Across all members, combined saving is almost $18 million each year.

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 do the following:

- Reduce traffic accidents by up to 90%
- Prevent 2,000,000 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 percent and increase the use of vehicles within the fleet from less than 10 percent to more than 75 percent.

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.