
2015 ANNUAL REPORT ON THE ENVIRONMENT

CHAPTER II

**LAND USE AND
TRANSPORTATION**

II. LAND USE AND TRANSPORTATION

A. OVERVIEW AND ISSUES

This chapter considers the environmental aspects of land use and transportation, both separately and as they relate to each other from an environmental perspective. As detailed in this chapter, the county has very little vacant land left. As the county approaches “build-out,” the focus of land use across the county is shifting from new development to revitalization and redevelopment. Each acre in the county becomes more valuable every day. The desire to maximize land utilization or productivity puts a strain on all types of land, from residential to commercial to parkland.

While the amount of available land has decreased, the Plan potential has been increasing. The potential is the number of units that can be built in the county according to the current Plan. It changes as requests are evaluated and adopted by the board. Since 1989, there have been over 124,500 new townhouses and multifamily units and over 8,000 single family homes added to the Plan. This clearly demonstrates the increased intensity planned for the county.

In May 2012, the county issued a report entitled State of the Plan—An Evaluation of Comprehensive Plan Activities Between 2000-2010¹. It describes changes that have been happening in our approach to planning as the county transitions over time. Since 2012 additional changes have been made with Fairfax Forward becoming the primary planning process and the Zoning Ordinance Amendment Work Program making associated updates to the Zoning Ordinance. Fairfax Forward is a holistic approach that is appropriate for making the strategic decisions that guide and encourage future projects.

At the same time, transportation systems across the county and metropolitan region are becoming increasingly congested. During rush hour, most highways in the county receive a failing grade for peak hour level of service. Over the past 15 years, highway construction in the Washington area outpaced population growth,² yet congestion has still increased. This is due to increased per capita vehicle mileage that puts severe strains on the transportation infrastructure. According to the Texas Transportation Initiative, our region is the most congested in the country. In 1982, the average metropolitan Washington area resident spent 16 hours in congestion; by 2011 the number increased to 67 hours, and by 2014, the Washington metropolitan area had the nation’s worst congestion at 81 wasted hours per commuter annually.³

¹ www.fairfaxcounty.gov/dpz/projects/state_of_the_plan.pdf

² “Where We are Growing”, Southern Environmental Law Center, 2002

³ Texas A&M Transportation Initiative, 2015 Urban Mobility Report <http://mobility.tamu.edu/ums/report/>

From 2012 to 2015 the county underwent several transportation mega-projects, including the Dulles Rail, I-495 Express Lanes and I-95 Express Lanes project. These projects are visible to anyone who moves about the county. The impact they will have on transportation is still to be seen, but they have potential to transform how large numbers of people move about the county. The intersection of Metrorail and the new Tysons Corner plan are examples of transitional thinking⁴ that combines land use and transportation into a new planning paradigm for the county. Tysons Corner now has four new Metrorail stations in an urban core that has plans to increase the number of residents from 17,000 to 100,000 and double the number of jobs from 100,000 to 200,000.

The I-495 Express Lanes and the I-95 Express Lanes are a more traditional approach to increase capacity of highways. The unique aspect of these projects is congestion demand pricing to control the amount of congestion on express lanes. There is a potential to get environmental benefits by providing transit options using the express lanes, because transit moves more people per vehicle and the congestion pricing should allow transit to run on a predictable schedule. On the other hand, the extra capacity on I-95 may induce development outside the county, with the associated commuting to the county that increases the vehicle miles traveled, which is a negative environmental impact.

Public transportation systems are becoming increasingly important to the county and region. Metrorail is the second largest rail transit system and Metrobus is the fifth largest bus network in the nation. Every day, Metro carries nearly 20 percent of all rush-hour trips in the metropolitan area, carrying as many people each day as 1,400 miles of new traffic lanes — equivalent to an 11 percent expansion of the region's road system. From a purely environmental standpoint, Metrorail and Metrobus eliminate more than 10,000 tons of pollution each year and save the region from using 75 million gallons of gasoline each year.⁵ Public transit is clearly an important part of the future.

The build-out of the county's land use combined with the overload of the transportation infrastructure will continue to increase as the county population increases. In 2006, the county released a comprehensive demographic study, *Anticipating the Future: A Discussion of Trends in Fairfax County*. The report presents needed data to plan for the future and incorporate future population and trends. It indicates that higher density residential development in Fairfax County and its neighboring jurisdictions will increase traffic congestion. This density, however, will make public transportation alternatives more viable.

As noted throughout this Annual Report, pressures from growth throughout the county directly affect the environment and consequently the quality of life, health and natural experiences. The Comprehensive Plan specifically provides strategies and practices that can address land use and transportation together. The Office of Community Revitalization is applying these approaches to support mixed-use projects that combine residential and commercial development to “enhance the sense of community” and to “increase transportation efficiency.” It provides an opportunity for residents to live and work in the

⁴ Doug Carter citing Rick Smyre's term at the Evolution of Fairfax Lecture, June 27, 2012.

⁵ Washington Metropolitan Area Transit Authority, www.wmata.com/community_outreach/kids_zone/

same area, thus reducing transportation needs while increasing the population density to support local businesses and mass transit.

The Board of Supervisors highlighted the effects of growth and congestion in its vision paper: Environmental Excellence for Fairfax County, A 20-Year Vision. A variety of tools were emphasized, including mixed-use development and low impact development. In addition, problems that at first seem tangential to the environment, such as neighborhood disruption through tear-down development and low income housing, were raised. Teardowns are common across the county, as single family homes are replaced with larger homes. The lack of low-income housing means workers cannot afford to live and work in Fairfax County and need to commute from outside the county, which exacerbates problems of both pollution and congestion. Furthermore, this situation skews the affordable housing debate, because it undercounts the number of households needing affordable housing across the metropolitan region.

In summary, the county faces great challenges from the combined effect of:

- Land use constraints that result from reaching build-out and transitioning from a growth focus to redevelopment.
- Transportation systems strained by congestion and getting further constrained by sprawl beyond the county.
- Population growth that will require additional residential and commercial facilities and transportation options.

Over the past 15 years, the county has made great strides in integrating land use and transportation planning and decision making. Environmental stewardship and high quality of life demand a holistic systems approach to the inevitable urbanization of Fairfax County. The silver lining is that urbanization, to be sustainable – environmentally, socially and economically – demands the same.

1. Trends and Concepts

The Fairfax County Comprehensive Plan and the county's Zoning Ordinance are the primary documents that guide decisions and specify legal requirements for developing projects in the county. The Comprehensive Plan is forward looking and shows how the county expects to grow and where new growth should occur. The Zoning Ordinance contains legal regulations for building in the county. This report has focused primarily on the Comprehensive Plan and the environmental impacts of future strategic plans. Since 2012 the county has changed the process for updating the Comprehensive Plan which has made the Zoning Ordinance more significant in the planning process.

Prior to 2012, the county would conduct an Area Plans Review (APR) process every five years or less to consider changes to the Plan. These changes were proposed primarily by private parties and not coordinated with other proposals or long-range infrastructure investments by the public. The APR process was augmented by special studies that were more holistic. As the combination of APR and special studies became unwieldy, the

county adopted Fairfax Forward, a new process with an ongoing work plan that was more responsive and holistic for strategic planning.

The most significant special study covered Tysons Corner. The Board of Supervisors appointed the Tysons Land Use Task Force in 2005 with a very ambitious charge to consider the redevelopment of the “downtown” for Fairfax County. The task force met for over five years and published “Transforming Tysons: Vision and Area Wide Recommendations” in 2008. The vision was assigned to the Planning Commission, which, in turn, appointed a special task force to craft language for a Comprehensive Plan Amendment. The task force worked with staff, the Tysons Land Use Task Force and the community to propose an amendment that was formally adopted by the board in June 2010.

The scope of Tysons Corner required new and creative approaches. The task force consisted of appointees who represented a wide swath of stakeholders. It included developers, landholders and residents, as well as advocates for neighboring communities, distant communities, affordable housing, the arts, the environment, transportation, biking, accessibility and others. The task force worked together with assistance from county staff, a world-recognized urban design firm, experts in transportation and modeling and advisors on communications. Technology was incorporated throughout the process with models and digital mockups that showed massing and expected growth projections. The Tysons plan went from a visionary document in 2010 to a full scale city rebuilding project; Tysons is indeed becoming the new downtown for Fairfax County. The transformation is unfolding everyday with new construction, businesses and residents that inhabit Tysons Corner. As the development continues, it is important that mechanisms be adopted to monitor the macro effects and provide mitigation options to make sure the reality aligns with the vision.

Fairfax Forward adopted the approach used in Tysons Corner with a holistic focus on key areas of the county that are undergoing change and revitalization. We are pleased to see that the Park Authority has collaborated in the Fairfax Forward process through the Great Parks, Great Communities Park Plan. Most recently, Great Parks, Great Communities policy guidance was incorporated into Fairfax Forward Plan amendments for Fairfax Corner and Lincolnia and special land use studies in Seven Corners and Reston. Several essential concepts that may be incorporated are described in the following sections. These concepts reflect the interconnections of land use and transportation, as well as factors such as housing, economic development and quality of life.

a. Sustainability

The most holistic of the concepts is sustainability. The U.S. Environmental Protection Agency’s website⁶ defines sustainability as follows:

⁶ www.epa.gov/sustainability/basicinfo.htm

The traditional definition of sustainability calls for policies and strategies that meet society's present needs without compromising the ability of future generations to meet their own needs.

The 1970 National Environmental Policy Act (NEPA) formally established as a national goal the creation and maintenance of conditions under which humans and nature "can exist in productive harmony, and fulfill the social, economic and other requirements of present and future generations of Americans" [emphasis added].

The concept of sustainable development was described in a 1981 White House Council on Environmental Quality report: "The key concept here is sustainable development. If economic development is to be successful over the long term, it must proceed in a way that protects the natural resource base of developing countries."

Over the past 30 years, the concept of sustainability has evolved to reflect perspectives of both the public and private sectors. A public policy perspective would define sustainability as the satisfaction of basic economic, social, and security needs now and in the future without undermining the natural resource base and environmental quality on which life depends. From a business perspective, the goal of sustainability is to increase long-term shareholder and social value, while decreasing industry's use of materials and reducing negative impacts on the environment.

Sustainability harmonizes the concepts of *Sprawl* and *Smart Growth*. Sprawl is the very evident unrestricted growth out from the core of a city or a county. In the 1970s, Fairfax was one of the nation's fastest growing counties. Today that rapid growth is happening beyond Fairfax County, in Loudoun and Prince William counties. As of 2003, Loudoun County was the fastest growing county in the nation, averaging 12.6 percent growth per year. This outer county sprawl directly affects Fairfax County through increased road congestion, changing property values and inefficient use of Fairfax County's infrastructure.

Establishing a community definition of sustainability can focus understanding of the concept. The City of Alexandria has a detailed plan that it is currently executing—it is the model that Reston is currently following. Supervisor Hudgins has pointed to the sustainable communities program developed by the Obama administration. The program livability principles are available at www.sustainablecommunities.gov/mission/livability-principles.

Smart growth is the antithesis of sprawl; it can be defined as environmentally sensitive land development with the goals of minimizing dependence on auto transportation, reducing air pollution and making infrastructure investments more efficient. The Coalition for Smarter Growth lists the following principles for Smart Growth:

- Mix land uses.
- Take advantage of compact building design.
- Create housing opportunities and choices.
- Create walkable communities.
- Foster distinctive, attractive communities with a strong sense of place.
- Preserve open space, farmland, natural beauty and critical environmental areas.
- Strengthen and direct development toward existing communities.
- Provide a variety of transportation choices.
- Make development decisions predictable, fair and cost-effective.
- Encourage community and stakeholder collaboration in development decisions.

Reston and the Orange Line corridor through Arlington are good examples of smart growth.

b. New Urbanism and Form-Based Codes

New Urbanism is a design movement that is going beyond smart growth into community building based on traditional urban centers. New Urbanists strive to improve land use by focusing on walkable communities and town centers.⁷ A walkable community reduces the distance between where people are and where they want to go.

An important New Urbanist concept to encourage consistent planned development in a community is called **Form Based Codes**. These codes define an appropriate form of development, that is, how it should look rather than function (for example, how a building looks rather than its use for commercial or residential purposes). Such codes also provide incentives for developers to adopt them. Form Based Codes provide clear direction on the adopted vision, with incentives such as expedited review and approval process for developers to adopt the form. The Form Based Codes Institute has a wealth of information, including the following graphic that compares traditional and form based codes guidance⁸:

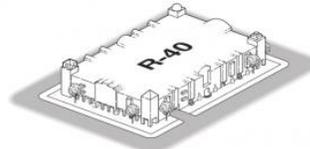
Conventional Zoning

Density use, FAR (floor area ratio), setbacks, parking requirements, maximum building heights specified



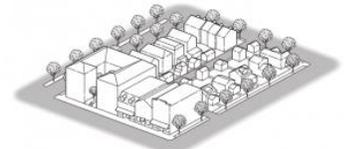
Zoning Design Guidelines

Conventional zoning requirements, plus frequency of openings and surface articulation specified



Form-Based Codes

Street and building types (or mix of types), build-to lines, number of floors, and percentage of built site frontage specified.



⁷ Charter of the New Urbanism at: www.cnu.org.

⁸ <http://formbasedcodes.org/definition>

While not a code, the form based concept has been applied in Comprehensive Plan guidance for the Annandale Community Business Center.

c. Development Concepts

More specific concepts apply to particular situations. **Infill** and **Clustering** are ways to increase density in a neighborhood. Infill is the process of filling in larger lots with multiple or larger housing and is a technique to reduce urban sprawl.⁹ Infill development can provide new housing or commercial development on vacant or underutilized sites within developed areas, taking advantage of existing infrastructure. While infill provides increased land utilization, it also has the potential to increase the environmental impact upon the infilled community. Particular concern should be paid to the impacts of infill, such as increased stormwater runoff and heating due to additional impervious surface and loss of tree canopy.

Clustering provides residential development that allows homes to be built close together with the remaining acreage left as open space in perpetuity. Generally, homes are sited on smaller lots, with the remaining land dedicated to open space. In most cases, the density of homes in a cluster development is the same as what would have been built on the entire site; the development is just configured differently. The challenge with clustering is the lack of public trust that the open space will remain open.

Multimodal transportation refers to a transportation strategy that incorporates multiple forms of transportation. Multimodal transportation encourages the use of walking, biking or public transit for transportation instead of the sole use of the automobile. The use of multimodal transportation involves an increase in the accessibility of all transit options as well as the increase in transportation options.

Transit-Oriented Development or Design (TOD) is another approach to creating walkable, livable communities. TOD encourages increased multi-use density around transit centers. The goal of TOD is to promote walking, biking or transit as a means of getting to work or the store instead of by car. By focusing development around transit centers, ideally communities will have increased transit ridership, less traffic, reduced pollution and a better quality of life.

Transportation Demand Management (TDM) is typically associated with a TOD proposal. TDM is a plan to reduce automobile trips that cause congestion. Some elements of a TDM plan include easier and safer pedestrian access, local amenities, and shuttle service.

Low Impact Development (LID) is an approach that reduces the impact of development on a site. The goal of LID is to better integrate the natural environment

⁹ Greenbelt Alliance, [Smart Infill; Creating More Livable Communities in the Bay Area](http://www.greenbelt.org/research-news/publications/smart-infill/), at www.greenbelt.org/research-news/publications/smart-infill/

with the built environment. LID techniques are intended to mimic an area's natural hydrology to manage stormwater on site, thereby reducing adverse downstream impacts.¹⁰ For example, LID will reduce the amount of impervious surface on a site and reduce the amount of stormwater runoff leaving the site. LID tends to be relatively economical and is flexible enough to be applied to different types of landscapes.

Green Building is another approach to lowering the impact of development by designing structures to conserve resources and using technology that is more efficient. Green roofs can be built with succulent plant gardens that absorb water during rain storms and gradually release it back to dramatically reduce runoff and stream pollution. One of the first green projects in the county was the green roof at the Providence District Supervisor's office and the county has established a green building policy.

High Occupancy Toll (HOT) Lanes are a tool to ease traffic congestion in urban areas. The idea behind HOT lanes is to open High Occupancy Vehicle lanes up to single occupant vehicles that pay a toll. The price of the toll varies, depending on the time of day and amount of traffic. An additional benefit of HOT lanes is that they can provide additional revenue to pay for other transportation improvements¹¹, such as rebuilding aging bridges over the Beltway.

2. Macro Considerations

Many decisions in the county that affect land use and transportation are made on a micro level. That is, they affect a single parcel or neighborhood. The macro effect of many small changes has a great impact on the county environment. These macro consequences are lost in the day-to-day planning and construction that happens across the county. As higher densities and infill occur, their effects are cumulative and significant. For example:

Small neighborhoods with stable environmental footprints are being transformed with larger houses. These newer houses bring additional impervious surface through larger roofs and additional pavement. They also displace trees that protect the parcel with a green canopy, which provides shade, air cleansing and light dampening, and provide haven for birds and wildlife. While the effect of a single home is small, the macro effect on community channels more runoff and pollution into the watershed, increases the ambient temperature and displaces wildlife.

Large scale development, such as that contemplated by the ongoing special studies, brings additional residential and commercial density to a region. By including all facets

¹⁰ Low Impact Development Center at: www.lid-stormwater.net/background.htm

¹¹ U.S. Department of Transportation, Federal Highway Administration, [A Guide for Hot Lane Development](http://ntl.bts.gov/lib/jpodocs/repts_te/13668.html) at http://ntl.bts.gov/lib/jpodocs/repts_te/13668.html

of a large scale development impact into a special study, the increased density can be combined with infrastructure investments that improve the community and environment.

a. Understanding Macro Changes

These macro effects are going to become more pronounced with the county build-out and change from development to redevelopment. The lessons learned from special studies and from the results of similar projects across the nation need to be incorporated into our planning process. Up to now, regional aggregations and averages were sufficient to predict development impacts. The Concept Map for Future Development, included in the Comprehensive Plan, has done a good job guiding decisions and projecting impact at a broad macro level. Moving into the future, tools are necessary to provide a finer resolution of real time changes that can be quickly aggregated into a macro view.

These new tools should combine the county's geographic information system (GIS) capability with the existing planning and zoning databases. The data are readily available at a parcel level, but the ability to view the data and use the data to model macro effects is not possible. Understanding and modeling the macro changes happening across the county will help provide insight to the Board of Supervisors and Planning Commission as they deal with micro decisions.

b. Creative Approaches

The county also needs to consider creative approaches to address these macro effects. One way to avoid macro consequences is to reduce the impact of micro decisions. For example:

- Modifying the Public Facilities Manual to encourage Low Impact Development can protect streams and mitigate the micro impact of infill development.
- Providing incentives for green roofs can protect streams and decrease heat generation from asphalt roofs. This encouragement will be a win-win for the county and for developers.
- Utilizing Transportation Demand Management plans can mitigate unforeseen impacts of development. The TDM plan included in the Fairlee/Metro West rezoning set the standard for TDM in the county.
- Continuing to develop comprehensive plans for multi-modal transportation alternatives can reduce transportation impacts of additional density. The pedestrian and bicycle programs are excellent examples of building a long term strategy that can be implemented as opportunities arise.

These creative approaches begin to mitigate micro changes that combine into unexpected and often unintended larger problems.

c. Additional Macro Considerations

The sections above focus on changes caused by development and redevelopment. There are also macro effects generated by non-development changes, such as work patterns, mixed-use opportunities and economic considerations that affect the county environment.

Telecommuting, or **telework**, reduces or eliminates the traditional commute to the office. Teleworkers work from home or at local work centers that provide infrastructure for a community of workers. This reduces pressure on the transportation network without building physical infrastructure. The county has an aggressive telework program in place for county employees.

Mixed-use development brings work, play and home closer together, reducing the distance for trips and commutes. Mixed-use is proliferating across the county, providing economic growth with less congestion than traditional separated communities.

Economic factors, such as increasing or decreasing property values, also affect the overall county environment. Low-income residents are struggling to find affordable housing near their jobs in the county and frequently choose to live outside the county. This negatively impacts the transportation system. As property values rise, homeowners choose to expand their residences rather than relocate. As they decrease, the tax base shrinks, adversely affecting such quality of life factors as a healthy environment, excellent schools and functional transportation systems, which may send communities into decline.

The Board of Supervisors has specifically raised **affordable housing** and **infill development** as an environmental concern in its Environmental Vision. Macro considerations need to be better understood and modeled as the county increases in density. Traditional models did not need to consider macro changes, and the resolution and quality of data is insufficient for planning and protecting the environment. Dealing with the proliferation of small changes across the county will take creative approaches using all available tools, including the Comprehensive Plan, the Public Facilities Manual, special ordinances and public outreach.

B. TECHNOLOGY TO UNDERSTAND THE COUNTY

Fairfax County is a recognized leader in using technology to better understand, explain and predict changes within our borders. The centerpiece of the technology is its Geographic Information System managed by Geographic Information Systems and Mapping Services, which is a branch of Fairfax County’s Department of Information Technology. It is tasked with developing, maintaining, coordinating and distributing GIS/mapping data and technology to Fairfax County government agencies and residents. GIS provides a capability to “see” the county through maps, imagery and other geospatial data and helps analysts discover relationships between and among sets of computer-readable, geographically referenced data. To power the GIS, the county has assembled a comprehensive digital

inventory of the 395 square miles within our borders. These investments in information technology and GIS are paying dividends in increased staff productivity using more and better data.

The **Virtual Fairfax**¹² 3-D application is an example of the power of digital technology to virtually fly through neighborhoods. Besides being entertaining it is very practical for boards and commissions to visualize proposed changes and make informed decisions.. Virtual Fairfax includes quick links to real estate assessment and land information for each parcel. One request would be to support Virtual Fairfax on computers other than Microsoft windows. Another example of internet mapping and information reporting applications is My Neighborhood (<http://www.fairfaxcounty.gov/myneighborhood/>). It lets users know what features and facilities are available in and around their neighborhoods. Through the My Neighborhood application, you can find information about parks, schools, libraries, fire stations and other public facilities in your neighborhood.

Over the past several years, EQAC has advocated for an enhanced IT capability for managing and monitoring land use. Our original recommendations in this area focused on updating the 1970s mainframe-based Urban Development Information System. In 2005, the Integrated Parcel Lifecycle System (IPLS) debuted--IPLS combines parcel based information from various county agencies with the GIS. Many agencies work on parcels for a particular period, but IPLS allows that full lifecycle to be captured across agencies. Layering these data on the GIS allows for a visualization of how land in the county is used and how it changes over time.

Through work with the county's Department of Information Technology, EQAC has become more familiar with capabilities and possibilities for using GIS. There are three attributes that must be in place for the technology to be effective:

1. Technology for GIS and IPLS—these are the technical systems that gather, move, manipulate and display information based on geographic location.
2. Data that are geographically located, also called spatial data—this is an expensive component that needs to be updated constantly as the county changes. There are many sources of data, from aerial imagery to U.S. census data to county records, which need to be transformed into useable information.
3. Models and applications that can use the data to create scenarios and advanced visualization tools to help with decision making. The Visual Fairfax 3-D application is an example that leverages the GIS and data to help make informed decisions.

The next sections cover each of these topics in more detail.

¹² www.fairfaxcounty.gov/gis/virtualfairfax/

1. GIS and Integrated Parcel Lifecycle System

GIS technology has become an essential tool for county operations. What used to be simple maps has become a geospatial database that connects the history of all land parcels in the county. The Integrated Parcel Lifecycle System was an early program that refocused how information was rendered. Parcel data are accessible to all county staff via GIS and Oracle clients. The current parcel data include:

- Housing Units.
- Households.
- Population.
- Development Pipeline.
- Gross Floor Area.
- Housing Value.
- Existing Land Use.

The information managed by IPLS is used by the county to help determine services and service provision levels, respond to state and federal reporting requirements and respond to regional initiatives such as transportation planning, air quality modeling and other programs of regional significance. One example of the increased resolution the system provides is enhanced demographic forecasts that take advantage of parcel characteristics such as age of structure, location, steepness and other features. County staff can evaluate 30-year demographic forecasts including low, high and “most likely” estimates. Some sample reports that can be created with GIS are population density, population forecasts, housing starts and completions, vacant land and underutilized land.

One of the benefits of tracking information at the parcel level is that very detailed analysis can be accomplished. However this granularity highlights the fact that the prior land use categories are no longer appropriate, especially as the county adopts more transit-oriented and mixed-use development. Parcels in a mixed-use development cross categories, and parcels with multiple stories of mixed-use further complicate simple analyses.

The county needs to develop an updated reporting methodology to accurately reflect the land use across the county. IPLS provides a base to analyze parcel information, but there is a considerable task remaining to synthesize that information and turn it into useful land use reports.

2. Data

The GIS analyses are only as reliable as the data they process. The county has acquired significant data and maintains these data on a regular basis. Prior EQAC recommendations focused on enhancing different types of data, and the following in particular:

- Planimetric data—features you can see, such as buildings, driveways, pools, railroads, ponds and trees.

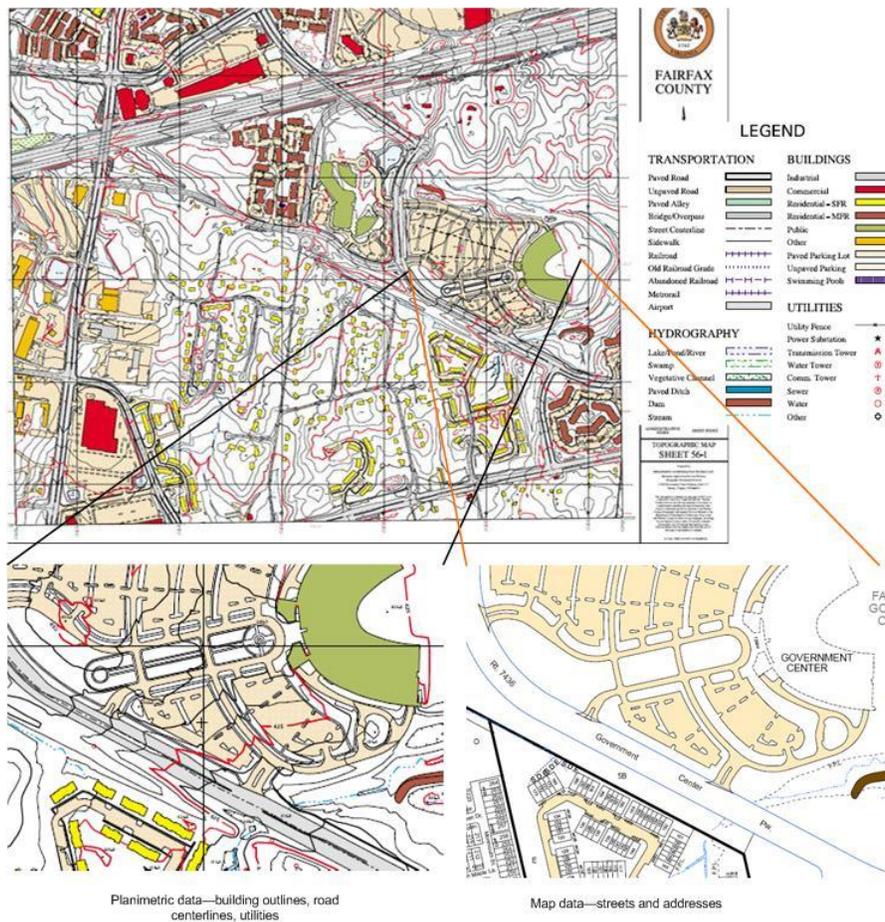
- Surface Data--data that provide elevations of the county's surface. It is essential data for stormwater analyses and dam inundation area determinations. Recently acquired LIDAR data also provide elevations of structures and tree canopy and is highly valuable in Urban Forestry canopy assessments.
- Oblique imagery—creating three-dimensional images and incorporating them into the planning process.
- Natural Resource data—identification of resources that should be considered during environmental and conservation planning efforts.

a. Planimetric Data

“Planimetric data” are features of the built and natural environment visible in aerial photography, including impervious surfaces. Planimetric map data provide information on the topographic features such as roads, buildings, and water bodies that are visible and identifiable on aerial photographs, which can be compiled into map features through photogrammetric or surveying procedures. Typical map features include roadway feature details as roads, sidewalks, streets, highways and alleys including curb lines, edge of paved surfaces and general feature details such as building footprints, building types, etc. Planimetric information for the Fairfax County Government Center area is shown in Figure II-1. Prior to initiating a project to update the planimetric data layer, an informal survey of the county's GIS users identified a wide range of needs for updated planimetric data, including public safety, planning, transportation, public facility and park purposes. Therefore, this is far greater than an “environmental” initiative. The implications and benefits of this action are manifold and cut across numerous agency and disciplinary lines. In 2013, the county completed a four-year effort to update the planimetric data in the county's GIS. The previous update took place in 1997. For this project, the following planimetric data features, locations and attributes were updated:

- Airports
- Buildings.
- Building Additions.
- Hydrography areas and edges.
- Sidewalk centerlines.
- Recreational features.
- Storage tanks.
- Major Transportation areas and edges.
- Minor Transportation areas and edges.
- Contours.
- Spot elevations.
- Digital Terrain Models (DTM).

Figure II-1. Planimetric Information—Fairfax County Government Center



Below are project statistics on features added or updated:

- 120,880 buildings (76 percent are residential).
 - 308 are multi-story garages (new feature).
- 262,851 paved driveways (new feature).
- 5,618 unpaved driveways (new feature).
- 4,083 miles of sidewalks.
- 258,229 building additions (deck, patio, pool, other) (new feature).
- 6,300 recreational features (tennis, basketball courts, other) (new feature).
 - 1,318 Tennis courts.
- 248,601 new spot elevations.
- 136,357 miles of 2' contours (new feature. Previously had 5' contours).
- 5,190 linear miles of hydrography.
- 703 storage tanks were added (new feature).

The total features in all the planimetric layers combined (including DTM) is 17,642,802. For reference, the 1997 version contained 3,771,137 features – this is an improvement of over 400 percent more features.

A new round of planimetric updates is currently on hold and expected to resume in 2017 using updated imagery provided by the state.

The GIS office is making the majority of its vector data, comprising over 100 data sets, available to the public at no charge via open data on the Web: (<http://data.fairfaxcountygis.opendata.arcgis.com/>). Planimetric, centerline, historic sites, watersheds, Radon Potential Areas, Quarries, Marine Clay, Asbestos-containing Soils, Chesapeake Bay Preservation Areas and Tree Cover (1990-2002, 2011) are some of the layers available for viewing and downloading.

b. Oblique Imagery

Oblique imagery is taken from an aircraft at an angle rather than straight down. The images can then be processed by software to show the sides of buildings and structures and to measure their heights. The primary users of the oblique imagery are agencies such as the Department of Public Works, the Department of Tax Administration and public safety agencies to reduce field time in assessing, planning and emergency response. Figure II-2 is a sample oblique image of the Government Center. Figure III-3 shows the results of converting these images into 3-D models and viewing them in the Virtual Fairfax 3-D viewer.

Oblique imagery begins to enable three-dimensional models and can have wide applicability beyond the county operations to public participation. In particular, the reviews of site- and area-specific Comprehensive Plan Amendments can benefit from better understanding three-dimensional areas around sites subject to proposed amendments.

Looking into the future, it could be possible to accept land use proposals with three-dimensional Computer-Aided Design and Drafting (CADD) data. The CADD models can be combined with 3-D buildings derived from oblique data to provide accurate 3-D representations of the changes. In effect, the county could begin examining proposals using fly-through technology overlaid on ground truth. This would be much more illustrative than artistic interpretations.

The county has oblique imagery collection in the current information technology plan. There is a new oblique imagery contract in place, replacing the one that expired in August 2012. EQAC recommends that the county continue to gather these data and to expand the use of 3-D analysis in planning.

c. Natural Resource Data

The Fairfax Park Authority and GIS office collaborated to create a natural resource geodatabase model. A field data collection technique was tested successfully and is

being expanded to all applicable field datasets. The new data collection technique uses tablet computers and mobile GIS combined with rapid assessment protocols to quickly and easily map natural resources data in the field and sync this data with a remote server. Applicable field datasets include Non-native Invasive Assessment Protocol (NNIAP) data, white-tailed deer browse impact (deer) data and community level vegetative classification (vegetative communities) data.

The Fairfax County Park Authority secured funding for inventories of NNIAP and deer data collection efforts. It has not secured funding for the vegetative communities inventory, which is estimated to cost \$365,000. The Park Authority will submit requests to fund portions of the vegetative community inventory through the Environment Improvement Program (EIP) and the Park Authority's monopole funding sources.

Figure II-2: Oblique Imagery—Fairfax County Government Center



Figure II-3: Virtual Fairfax 3-D Model—Fairfax County Government Center



3. Models and Visualization

While the GIS and new data provide valuable insight by which to view the county, they do not necessarily provide new information. Models are computer programs that analyze the data and create reports or projections of future scenarios. Some recent applications of computer models and visualization projects include:

- Transportation and traffic models to analyze congestion. The Tysons Land Use Task force relied on traffic projections for development scenarios.
- GIS used 2009 topographic data to create highly detailed elevation model of the county. With that, GIS was able to build a complex set of watershed delineation tools that significantly reduces DPWES Stormwater time and cost in carrying out its work.
- LIDAR data from the U.S. Geological Survey (expected to arrive in 2015) will assist DPWES Stormwater management in its analysis and forensics analysis of runoff problems.
- Virtual Fairfax to visualize new development proposals. Some sample screenshots of the Tysons Corner area are shown in Figure II-4 below. The second figure shows the proposed new density overlain on the existing conditions. Note that the 2-D screenshots are a poor substitute for the actual 3-D application.
- New tools on the geoportal: www.fairfaxcounty.gov/maps/geoportal.htm. The Historic Imagery viewer has seven years of imagery that can be overlaid with parcels and roads, and the Map Wizard enables users to create their own maps.

4. Mobile Applications

Several agencies are using mobile, Web-based GIS applications to increase data collection and documentation in the field. In particular, the Fairfax County Park Authority and Urban Forest Management Division have accomplished significant savings by using mobile data collection.

The GIS office has worked closely with DPWES, refuse collection teams to reduce the number of crews and trucks necessary to collect refuse and yard waste through the use of routing software. Initial efforts have enabled the reduction of two trucks on Mondays. There will be additional savings on other days of the week. GIS also developed a vacuum leaf collection app for DPWES to enable customers to view their collection dates and areas.

C. LAND USE

Land Use and Transportation will be examined separately in this and the next section; they will then be discussed with respect to their systemic interrelationships in section E. The information for this section was identified in the Fairfax Forward work program and presented to the public through the *State of the Plan—An Evaluation of Comprehensive Plan Activities Between 2000-2010* and the Plan amendments that updated the Comprehensive Plan and the Concept for Future Development Map.¹³ The underlying data are primarily stored in the Integrated Parcel Lifecycle System.

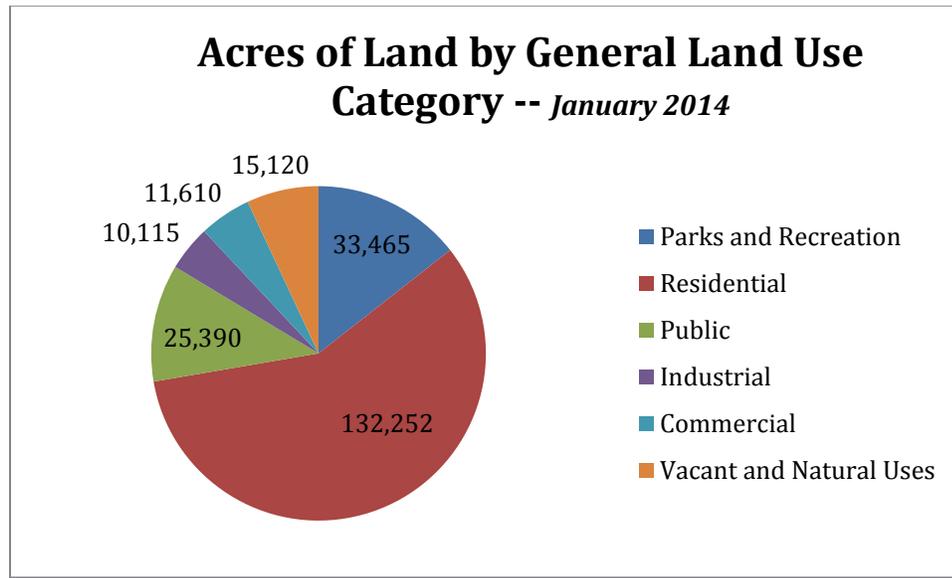
1. How Is Land Used In Fairfax County?

Fairfax County has 227,952 total acres of land, excluding areas in roads, water or small areas of land unable to be zoned or developed. Those acres are organized into the broad categories identified in Figure II-5.

- Residential—acres dedicated to living. Residential acres are measured by the number of dwelling units per acre. For example, a low density neighborhood has a DU/AC from .1 to .5, a suburban neighborhood ranges from 1-20 and an urban center has a core DU/AC of 35-60.
- Commercial/Retail—acres developed for people to work or shop. Commercial space is measured by looking at the Floor Area Ratio (FAR), which is the ratio of gross floor area to the size of the lot. For example, an FAR of 0.5 means that a single story building can cover half the lot, a two-story building can cover 1/4 of the lot and a four-story building can cover 1/8 of the lot. FAR does not include other impervious surfaces, such as parking lots.
- Industrial—acres zoned for industrial use. Industrial space is measured by FAR.

¹³ Staff Report for Plan Amendment S11-CW-2CP, April 26, 2012

Figure II-5: Existing Land Uses in Fairfax County



Source: Fairfax County Department of Neighborhood and Community Services, 2014. www.fairfaxcounty.gov/demogrph/find_by_topic.htm. Note: Land in Towns of Clifton, Herndon and Vienna included. Total acreage figures do not include areas in roads, water or small areas of land unable to be zoned or developed.

- Parks and Recreation—acres dedicated to public enjoyment and recreation.
- Public—acres owned by the public but not for parks or recreation. This includes: Fort Belvoir; Dulles Airport; the campus of George Mason University; county government facilities such as fire stations, landfills, police stations, training facilities, schools and government centers; and other publicly-owned properties.
- Vacant—acres currently unused, either natural or vacant, but zoned for residential, industrial or commercial uses.

2. Land Use Planning

The Fairfax County Comprehensive Plan is required by state law to be used as a guide in decision-making about the built and natural environment. Major revisions took place in 1975 and 1991. The 1991 plan, which was the foundation for the 2013 edition, was developed around 18 Goals for Fairfax County (a 19th goal was added later). From 1991 through 2013, updates to the Plan were vetted through an Area Plans Review process with public participation in each district. By 2013, it was realized that the process was not sufficient for a growing county facing build-out and transitioning from development to redevelopment and revitalization. EQAC was one of the advocates for a more comprehensive and consistent process. Fairfax Forward is the new process that focuses and aligns resources on priority projects. This approach is working well and includes checkpoints to monitor and improve the process over time.

The Web edition of the Comprehensive Plan is available at www.fairfaxcounty.gov/dpz/comprehensiveplan/.

The current edition of the Fairfax County Comprehensive Plan consists of the Policy Plan, four Area Plans, the Plan map and the Transportation Plan map. The Policy Plan has eleven functional sections plus a Chesapeake Bay Supplement. The functional sections, with links to their websites, are:

- [Land Use.](#)
- [Transportation.](#)
- [Housing.](#)
- [Environment.](#)
- [Economic Development.](#)
- [Heritage Resources.](#)
- [Public Facilities.](#)
- [Human Services.](#)
- [Parks and Recreation.](#)
- [Revitalization.](#)
- [Visual and Performing Arts.](#)
- [Chesapeake Bay Supplement.](#)

In 1990, the county's Concept Map for Future Development was developed to guide more detailed planning efforts. The map was revised in 2012 to reflect changes in the Plan potential and align with amendments since 1990. This updated map identifies 30 mixed-use centers, which are the focus for change in the county (Figure II-6).

The Policy Plan is reviewed by functional sections. The Parks and Recreation section was reviewed in 2003. The Transportation Section was reviewed in 2005 with recommendations presented in 2006. A comprehensive review of the complete Policy Plan is not anticipated in the future due to the overall complexity of the complete document.

a. Fairfax Forward

On July 9, 2013, the Board of Supervisors adopted the Fairfax Forward process to supplant the Area Plans Review process. The centerpiece of the process is a Comprehensive Plan Amendment Work Program through which current and future planning studies are considered. A multi-year calendar identifies planning activities contemplated beyond the three-year work program; this calendar informs future reviews of the work program. Per the board's action, there will be a review after two years of the efficiency, effectiveness, accessibility and impact of the new process and pilot work program.

i. 2015 Fairfax Forward Evaluation

An evaluation of the Fairfax Forward process began in July 2015. Staff continues to meet with the Planning Commission Policy and Procedures Committee to discuss observations, concerns, and opportunities to improve Fairfax Forward. Internal staff meetings have been held to share experiences with planning studies and generate ideas for sustaining Fairfax Forward over the long term. Planning

Division staff met with land use attorneys in summer 2015 to discuss their experiences with the Fairfax Forward process, particularly when working with staff to complete studies on the work program.

The feedback received from the Planning Commission, staff, land use attorneys, Board of Supervisors' staff and the community will be considered in the evaluation of the Fairfax Forward process and the work program. A preliminary report on the Fairfax Forward evaluation is anticipated at the end of 2015.

ii. Comprehensive Plan Amendment Work Program

As of late October 2015, 31 planning studies were listed on the 2013 Pilot Comprehensive Plan Amendment Work Program, as amended through October 20, 2015. The Board of Supervisors has acted upon 36 studies since the work program was adopted in July 2013.

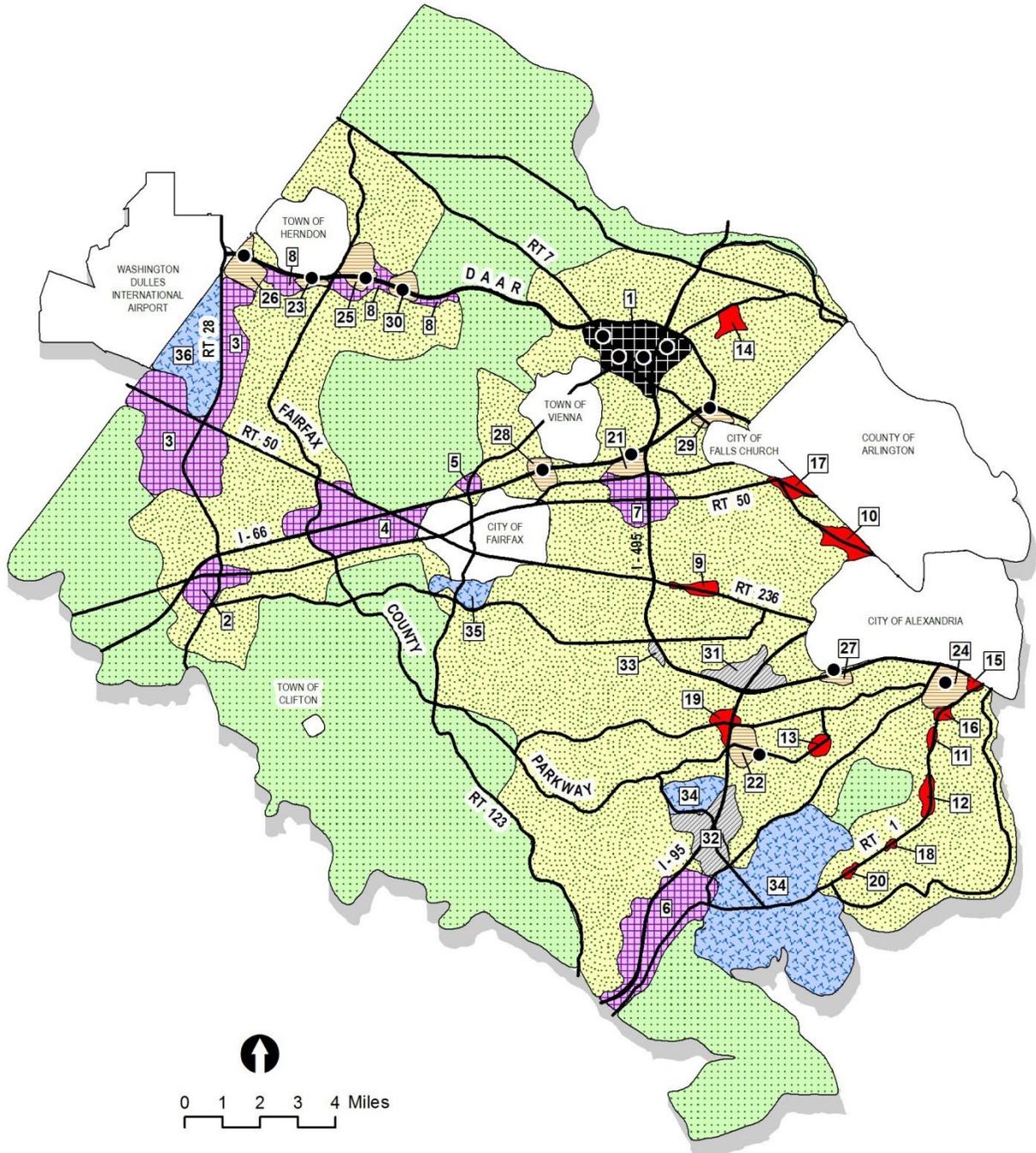
b. Overview of Plan Amendments Adopted through October 20, 2015

A total of 14 Plan amendments were adopted in 2013 through June 3, 2014. An additional 23 Plan amendments were adopted and two amendments were rescinded from July 1, 2014 through October 20, 2015. A general description of each adopted amendment and the adopted Comprehensive Plan guidance can be found at:

www.fairfaxcounty.gov/dpz/comprehensiveplan/planadopted.htm.

- Green Building Policy: Revised the Green Building policy in the Environment section of the Policy Plan of the Comprehensive Plan.
- Charles Street: Modified the redevelopment option for Sub-Unit D2 in the Baileys Crossroads Community Business Center.
- Bicycle Master Plan: Recommended bicycle facilities and policies to guide the development of bicycle infrastructure throughout Fairfax County.
- 5285 Port Royal Road: Revised the Comprehensive Plan guidance by providing an option to convert an existing warehouse to a self-storage and truck rental facility.
- Fairfax Center Study, Phase I, Transition Areas and Land Units, including Fairfax Center Area Land Units T, U and V: Added options for residential and assisted living uses for parcels along Lee Highway and proposed editorial changes.
- Lake Anne Village Center/Reston Crescent: Modified recommendations regarding the building, heritage resources, the Consolidation Option and transportation.
- Baileys Crossroads Community Business Center (CBC), Southeast Quadrant: Provided a redevelopment option that includes residential uses and a public elementary school or other public use.

Figure II-6: Concept Map for Future Development



CONCEPT FOR FUTURE DEVELOPMENT MAP

LOCATIONS OF MIXED-USE CENTERS

Urban Center

1. Tysons Corner

Suburban Centers

2. Centreville
3. Dulles (Route 28 Corridor)
4. Fairfax Center
5. Flint Hill
6. Lorton-South Route 1
7. Merrifield
8. Reston-Herndon

Community Business Centers

9. Annandale
10. Baileys Crossroads
11. Beacon/Groveton
12. Hybla Valley/Gum Springs
13. Kingstowne
14. McLean
15. North Gateway
16. Penn Daw
17. Seven Corners
18. South County Center
19. Springfield
20. Woodlawn

Transit Station Areas

21. Dunn Loring
22. Franconia/Springfield
23. Herndon-Monroe
24. Huntington
25. Reston Parkway
26. Route 28/CIT
27. Van Dorn
28. Vienna
29. West Falls Church
30. Wiehle Avenue

LOCATIONS OF LARGE INSTITUTIONAL AND INDUSTRIAL AREAS

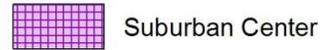
Industrial Areas

31. Beltway South
32. I-95 Corridor
33. Ravensworth

Large Institutional Land Areas

34. Fort Belvoir (Main Post and North Area)
35. George Mason University
36. Washington Dulles International Airport

LEGEND



- 5600 Columbia Pike/Baileys Gateway: Added redevelopment option for multifamily residential use with an option for retail and services.
- Silas Burke Property: Added an option for residential use at 2-3 dwelling units per acre (du/ac) with the protection of heritage resources.
- West Falls Church Transit Station Area (TSA): Revised the Fairfax County boundary to reflect the 2014 boundary adjustment between Fairfax County and the City of Falls Church.
- Dulles Suburban Center, Marlo site: Removed the restriction limiting retail development to a furniture store and allows for additional retail opportunities.
- Dulles Suburban Center, Akridge site: Added recommendation for office, conference center/hotel, industrial/flex and industrial use, with an option for multifamily residential development with conditions.
- 4201 and 4203 Buckman Road: Added an option for residential at 8-12 du/ac.
- Reston Master Plan Special Study Phase II: Updated the Comprehensive Plan guidance for Reston and several small areas adjacent to Reston.
- Dulles Suburban Center, Timber Ridge: Added an option for residential use (up to 150 townhouses) on this site, with conditions.
- Forestville Elementary School: Added a recommendation for a limited sewer service area expansion to Forestville Elementary School.
- Seven Corner Community Business Center: Revised activity center guidance.
- Dulles Suburban Center, Wegmans site: Added an option for retail uses up to 0.20 FAR with conditions.
- Conservation Areas and Community Improvement Areas: Removed references from the Plan of to five expired Conservation Area Plans and all completed Community Improvement Area Plans.
- Lincolnia Planning District, Phase I: Revised Plan guidance to reflect existing conditions, recent planning efforts and editorial changes.
- Completed Transportation Facilities: Removed from the Plan completed transportation improvements; added to Plan maps county-owned commuter parking facilities and made editorial changes.
- Huntington Transit Station Area, Huntington Club Condominiums: Added phasing language to mixed-use transit-oriented redevelopment option.

c. Status of Special Planning Studies/Plan Amendments Under Way

The Fairfax Forward website provides the most current information regarding the status of projects: www.fairfaxcounty.gov/dpz/fairfaxforward/. Each planning study Web page includes information such as the study scope, anticipated timeline, meeting dates, presentations, reports and public outreach tools. The information is updated throughout the course of the study.

d. Area Plans Review

The Area Plans Review process has been supplanted by Fairfax Forward. It was a community-wide review of site specific changes proposed to the Area Plan

volumes of the Comprehensive Plan. The APR process was organized by the supervisor districts.

APR nominations spanned the county. Whereas the plans for Urban Centers, Suburban Centers and Transit Station Areas are comprehensive in scope, the APR nominations were opportunistic. Each nomination was analyzed thoroughly by staff to consider factors such as impacts on transportation, education and environmental resources of the individual nominations. The cumulative effects--the macro considerations, however, were not analyzed.

e. District Planning Processes

Several supervisor districts have advisory boards or committees to advise on changes to the Plan within the district. One of the most unique is the Lee District planning process that has been in place since 1976. This interjects a step before the public hearing at the Fairfax County Planning Commission. All land use cases (rezonings, special exceptions and changes to the Comprehensive Plan) are presented to the Lee District Land Use Advisory Committee. The committee asks questions, makes comments, etc. When all the information is available, the committee votes to either recommend approval or denial of the application. The Lee District Planning Commissioner participates in these meeting and typically supports the committee decision at the Planning Commission public hearing.

3. Planning and Zoning

Planning and zoning are both necessary in the development process. The Comprehensive Plan is required by state law to be used as a guide in decision-making about the built and natural environment. Fairfax Forward is the process for reviewing and updating the Comprehensive Plan regularly and holistically.

The Zoning Ordinance is intended to implement the adopted Comprehensive Plan for the orderly and controlled development of the county. It is the official legal document describing how things may be built, and as such is a substantial document. It is regularly reviewed through the Zoning Ordinance Amendment Work Program (ZOAWP). There are several important changes being considered in the near term that affect the environment.

1. Open Space. Staff is reviewing the open space definition to determine if clarification is necessary and whether the methodology used in open space calculations should be modified. Under consideration is whether open space credit should be given for an unenhanced dry pond, as these facilities are generally considered undesirable from a usable open space and visual perspective, and whether streetscape should be counted as open space, as such linear areas may not function as useable open space.
2. Planned Development Districts. Increase in FAR - PDC and PRM Districts. This amendment allows for the implementation of recent Comprehensive Plan

amendments that propose higher density, mixed-use areas in the county. The amendment proposes to increase the maximum FAR to 5.0 in commercial revitalization overlay districts and areas identified in the Comprehensive Plan as transit station areas, commercial revitalization areas and commercial business centers. Concentrating commercial and residential development in conjunction with the use of mass transit assists in achieving environmental goals by reducing air pollution caused by automobiles and traffic congestion, reducing energy consumption required to operate motorized vehicles and creating a framework that supports personal mobility.

In addition, the purpose and intent sections and general and design standards would be modified to place a greater emphasis on environmental protection and tree preservation. As a Priority 2 item, this amendment will be maintained on a list for future prioritization.

3. Parking Reductions in Transit-Oriented Areas. In order to reduce energy consumption, improve air quality, reduce the amount of impervious surfaces and encourage the use of mass transit, there is an item to consider a reduction of the minimum parking requirements due to Metrorail, bus route and other mass transit options such as streetcars. Reducing parking requirements through Zoning Ordinance amendments is an ongoing process. Parking rates were reduced with the adoption of parking maximums as part of the amendment that created the Planned Tysons Corner Urban District (PTC), the new zoning district for Tysons, on June 22, 2010.

The Zoning Ordinance allows for parking reductions by up to 20 percent in Commercial Revitalization Districts, but for nonresidential uses only. With these areas being recommended for mixed-use developments under recently adopted Comprehensive Plan text, the Zoning Ordinance amendment proposes to expand the 20 percent reduction to residential uses as well, provided the reduction can be justified. Furthermore, the amendment will clarify that bus stops and bus routes can be used to request a parking reduction, if it is demonstrated that routes and stops are regularly scheduled and link to other transit opportunities.

4. Agricultural Districts/Uses. A review of the zoning districts that permit agriculture is needed in light of changes to the State Code that limit local regulation of agricultural activities, including farm wineries, farm breweries, farm distilleries and agri-tourism/recreational activities. Given that such uses can increase traffic, reduce water quality and cause noise pollution, it should be determined which zoning districts are appropriate for these agricultural activities and whether additional standards should be considered to address potential impacts to health, safety and welfare.

4. Land Use History and Build-Out Projections

The Comprehensive Plan contains land use recommendations for all of the land in the county. When the concept plan was conceived in 1990, there was a significant amount of vacant land, so it could address changes across the county. That vacant land has been steadily decreasing as shown in Table II-1. In 2014, with only approximately 6.0

percent vacant and much of that fragmented, the decisions are much more constrained. Significant planning changes require decisions that will most likely affect existing developed land.

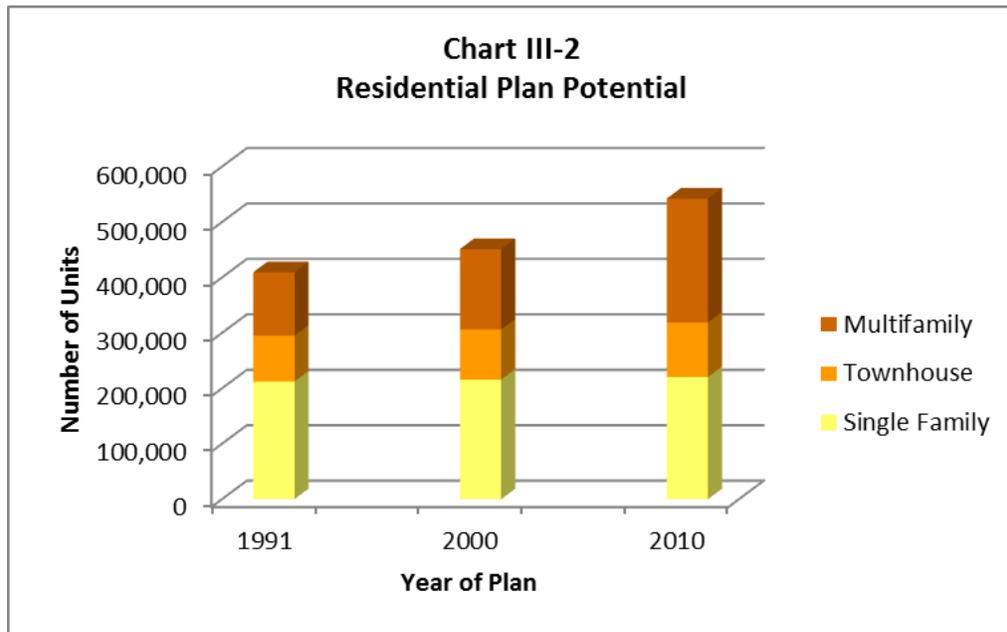
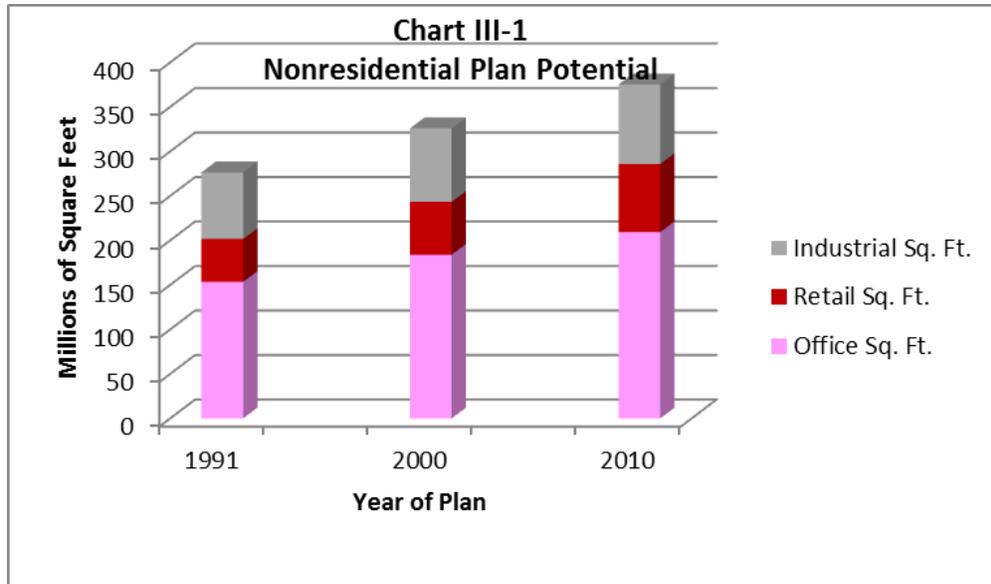
Table II-1 Vacant Land in Fairfax County			
Year	Vacant Land (acres)	Total Planned Land (acres)	Percent Vacant
1980	75,550	234,744	32.2 percent
1985	66,685	232,941	29.2 percent
1990	45,042	230,678	19.5 percent
1995	37,006	229,366	16.1 percent
2000	29,529	228,541	12.9 percent
2007	17,117	228,240	7.5 percent
2010	14,943	227,228	6.6 percent
2014	13,528	227,057	6.0 percent
Planned land does not generally include public roads and water			
<p>Note: Some of the decrease in vacant land between 2000 and 2007/2010/2014 is due to a change in the definition of vacant land. Areas previously classified as vacant but owned by tax exempt entities such as houses of worship and private schools are no longer included as vacant land.</p>			
Source: Fairfax County Department of Systems Management for Human Services, 2007 and Fairfax County Department of Neighborhood and Community Services, 2010 and 2014			

5. The State of the Plan, 2000-2010

The aggregate acreage available in the county is relatively constant, with occasional changes as land is converted to other uses, such as roads and drainage ponds. The Comprehensive Plan capacity, however, is constantly increasing as new density is allocated across the county. This occurs primarily by increasing the Floor Area Ratio and allowing higher buildings to be built that have additional capacity in the same acreage.

In 2012, the county published a comprehensive review of changes to the Plan over the past 10 years. The study notes that “Between 2001 and 2010, there were a total of 284 amendments adopted to the Area Plans. Of these, 221 or 78 percent were located in the county’s activity centers.” As changes are made to the Plan, the key metric available for growth is the *Plan potential*. This tracks the amount of space that can be built. The increase over the past 20 years is shown in Figure II-7. With the observation that the county is close to build-out, with only 6.0 percent vacant space available, the Plan

Figure II-7: Nonresidential and Residential Plan Potential



Source: *State of the Plan—An Evaluation of Comprehensive Plan Activities Between 2000-2010.*

potential increases through redevelopment that allows bigger and taller buildings that are closer together. In the residential sense, this means more multi-family complexes. In the nonresidential space, it means higher office buildings with multiple uses.

As part of the State of the Plan review, the authors identified several themes that emerged from all 284 Plan amendments. These themes are:

- 1. Encouragement of Intensity and Land Use Flexibility in Mixed Use Centers.*
- 2. Protection of Low Density Residential Neighborhoods.*
- 3. Avoid Re-Planning Industrial Areas.*
- 4. Expansion of Medical Facilities.*
- 5. Revision of Policy Plan Regarding Acquisition of Land for Public Parks.*
- 6. Environmental Policy Issues in Area Planning Process.*

The themes and trends clearly show that Fairfax County can continue to grow and accommodate new population and businesses into the future. But as we grow, important values are reflected in how and where that growth occurs. The most valuable areas for growth are mixed-use centers. These have been identified in the Plan and infrastructure has been planned to support these areas. At the same time, we are focused on protecting residential neighborhoods. The ability to have high density development in close proximity to low density residential is an emerging pattern that is very effective when planned near Metrorail stations. The area most adjacent to the Metrorail stations is ideal for high density. Surrounding neighborhoods have the advantage of a vibrant neighborhood that is nearby while residents of high density developments can adopt a more urban lifestyle that has amenities and opportunities within walking distance. Examples of this pattern are nearby in the Arlington County Orange Line corridor, but they are also happening in Fairfax County.

Industrial and medical themes highlight different priorities. Medical services are desired by the population as it grows both in number and age. Industrial areas are important to support the infrastructure; these include landfill, quarry and other uses. By focusing development in the mixed-use areas, it is possible to maintain industrial uses in the face of increasing Plan potential. The amendments to the Plan allow industrial uses to be viable as growth continues, without many of the conflicts that happen when residential uses encroach on industrial areas, which otherwise would force industry to relocate further out.

Parks and environmental themes reflect the value that the residents place on these resources. The Fairfax County Park Authority has, and deserves, a place in comprehensive planning. Among the important environmental initiatives over the past 10 years were the adoption of the county's watershed management plans and the augmentation and clarification of the Environmental Quality Corridor policy to preserve ecologically sensitive habitats.

6. Green Building Policy¹⁴

In December 2007, the Board of Supervisors adopted an amendment to the Policy Plan that established a green building policy. The policy included broad support for green building practices and established linkages between the incorporation of green building/energy conservation practices and the attainment of planned uses and densities/intensities of development. In growth centers, commitments for green building practices sufficient to attain certification through the LEED[®] program or equivalent were recommended for certain nonresidential and multi-story multifamily residential proposals. ENERGY STAR[®] Qualified Homes designations were recommended for any other residential development proposed at the high end of the Plan density range.

On July 1, 2014, the Board of Supervisors adopted a Green Building Policy amendment to the Comprehensive Plan with several changes to the policy, including:

- Clarifying that the emphasis of the policy has always been on individual buildings, not site/neighborhood design.
- Adding support for reuse of and for greening/retrofitting existing buildings.
- Adding language to encourage energy and water usage collection and performance monitoring, and participation in regional and local evaluations of outcomes.
- Adding language to encourage the use of natural lighting.
- Adding support for solid waste and recycling management practices.
- Defining “equivalent” in reference to green building rating systems.
- Removing a limitation on green building expectation for multifamily residential proposals relating to number of stories, per rating system requirement changes.
- Adding support for higher levels of green building performance when developments have relatively high levels of intensity or density (residential and non-residential).
- Updating the range of residential green building rating systems available for use and revising the related policy to focus more holistically on green building design and not just ENERGY STAR Qualification.
- Adding Industrial Areas for a green building commitment.
- Clarifying expectations for public-private partnerships.
- Adding support for infrastructure for electric vehicle charging.

By establishing these amendments and incentives, green building has become an accepted practice across the county.

7. A Fairfax County Example: Merrifield Suburban Center

The Merrifield Suburban Center is a vibrant, exciting, transit-oriented neighborhood. The area boasts a new urban scale Target store (the nation’s first with a fourth floor) that is surrounded by a new arts-focused movie theatre, bubbling fountains and retail shops.

¹⁴ Provided to EQAC 2014 by Department of Planning and Zoning—Planning Division

The transition from a sleepy intersection to a transit-oriented center was a long journey.

After several uncoordinated amendments were passed in the 1990s, a visioning workshop was convened on June 10, 1998, followed by a formal task force that created the Merrifield Concept of Future Development. Over the next 14 years, this vision was doubted and debated, but over time it gained momentum and persevered. Merrifield, like all suburban areas, has unique challenges and, in this case, significant advantages, including:

- A Metrorail station that serves as the as the infrastructure foundation for the area. The value of a Metro stop cannot be overstated as an anchor for a new suburban area.
- Close proximity to the Beltway and U.S. Route 50 to augment the transit anchor.
- A committed district and supervisor (actually two supervisor champions over the 14 years) with commitments to the long term vision.
- Large property tracts that are the basis for large scale projects. Other areas face fragmented land ownership that requires additional cooperation.
- Development of a street grid. This is essential to build the urban connections and cross connections between parts of the community.
- Inclusion of a massive 500 cubic yard stormwater detention vault to address runoff from the town center.

These challenges and advantages have combined to create a transformed place. The success of Merrifield shows the potential of an integrated and strategic long term process. While not all redevelopments will be as spectacular, Merrifield proves that the county has the potential to grow and redevelop while improving the environment.

D. TRANSPORTATION

This section examines transportation, transportation decision making in Fairfax County and significant transportation trends and projects. Discussions of transportation and the environment typically start with automobiles and the negative environmental impacts of cars. As congestion and density increase, however, single occupancy cars cannot be packed densely enough to move everyone about effectively. In Fairfax County, transportation discussions are increasingly focused on multi-modal and public transit options that provide a better balance of options suited for particular needs.

The transition towards multi-modal and public transit options brings many environmental improvements. They include: reducing air pollution caused by automobiles and traffic congestion; reducing water pollution caused by roadway and parking lot runoff and construction; reducing noise pollution caused by on-road vehicles; reducing energy consumption required to operate motorized vehicles; and the healthy sensation of personal mobility.

Since 1999, there has been a procession of large transportation projects (the “mega projects”) across the county. The Wilson Bridge replacement was the first mega project, followed by

the I-95/I-495/I-395 “mixing bowl,” then the combination of the Silver Line Metrorail extension and the I-495 Express Lanes. The mega-transportation projects are expensive, designed for a long time and impact many constituents. The agencies responsible for building the mega projects have delivered them on time and budget with the promised improvements in both capacity and safety.

These mega projects, however, need to be balanced with regular maintenance of the existing infrastructure. An important policy identified by the Coalition for Smarter Growth is “fix-it-first,” to ensure that all state maintenance needs are met and to direct funding to fixing problems on existing roads and transit prior to funding new construction.¹⁵ This policy highlights the competition among transportation funding priorities. Projects that were once new require ongoing maintenance. New projects need to be judged by their ability to enhance the existing network and to maximize their potential to support comprehensive plans for the growing into the future. Some of these factors include:

- Does the project address an engineering necessity, such as the Wilson Bridge replacement?
- Does the project fix a design or congestion problem, such as the mixing bowl and changes to the I-66/I-495 interchange?
- Does the project add capacity to the core of the network, such as the Beltway express lanes and the Silver Line?
- Does the project encourage or induce new development, such as the original Beltway, I- 66 and Dulles Toll Road, that focused new growth further out in the county.

Induced development is an important concept, especially as the county addresses redevelopment and build-out. Induced development happens when transportation capacity is added to an undeveloped area and consequently encourages growth in that area. In Fairfax County, the objective is to increase density in the mixed-use centers, not to add new growth to stable areas outside of the growth centers. This means providing transportation options and dense networks like a street grid that allow better flow within the centers. By aligning transportation and land use, the system becomes more efficient and effective.

Many resources illustrating a move towards multi-modal transportation projects and principles are available:

- Wiehle Avenue/ Reston Parkway Metrorail Station Access Management Study: www.fairfaxcounty.gov/fcdot/sam_study.htm .
- Tysons Station Access Management Study: www.fairfaxcounty.gov/fcdot/tmsams/
- Fairfax Connector ten year Transit Development Plan (the main guide for service expansion and changes in Fairfax County): www.fairfaxcounty.gov/fcdot/tdp.htm/.

¹⁵ www.smartergrowth.net/news-parent/press-releases/joint-statement-in-support-of-a-fix-it-first-jobs-first-sustainable-stimulus/

- The Countywide Transit Network Study is looking future transit needs for the entire transit network, connecting present/future destinations and determining what type of transit best serves different areas www.fairfaxcounty.gov/fcdot/2050transitstudy/.
- A seven-minute video presentation has been prepared on sustainable transportation in Tysons. www.youtube.com/watch?v=4xAPeDF5veo&feature=youtu.be
- Fairfax Advocates for Better Bicycling is focusing on the need for bicycle infrastructure in mixed-use, transit-oriented developments. The county is going through a difficult transition, in that it is promoting this type of development in the context of big suburban roads. www.fabb-bikes.org.

Resources listing important trends and experiences from other jurisdictions are also available:

- The Institute of Transportation and Development Policy has created a scoring system to rate Transit-Oriented Development: <https://www.itdp.org/tod-standard/>.
- The National Complete Streets Coalition has provided a wealth of information regarding the complete streets concept. www.smartgrowthamerica.org/complete-streets

1. How do People and Things Move About Fairfax County?

There are numerous options for people and things to move about the county.

Private, motorized transportation is the most significant mode of transportation, it directly effects the environment, and is closely related to land use and development. People have become dependent on automobiles for business, pleasure and various daily activities. The urban sprawl that has been experienced in Fairfax County and outer suburbs has caused major congestion on roadways, particularly during rush hour as many individuals are commuting long distances to and from their jobs.

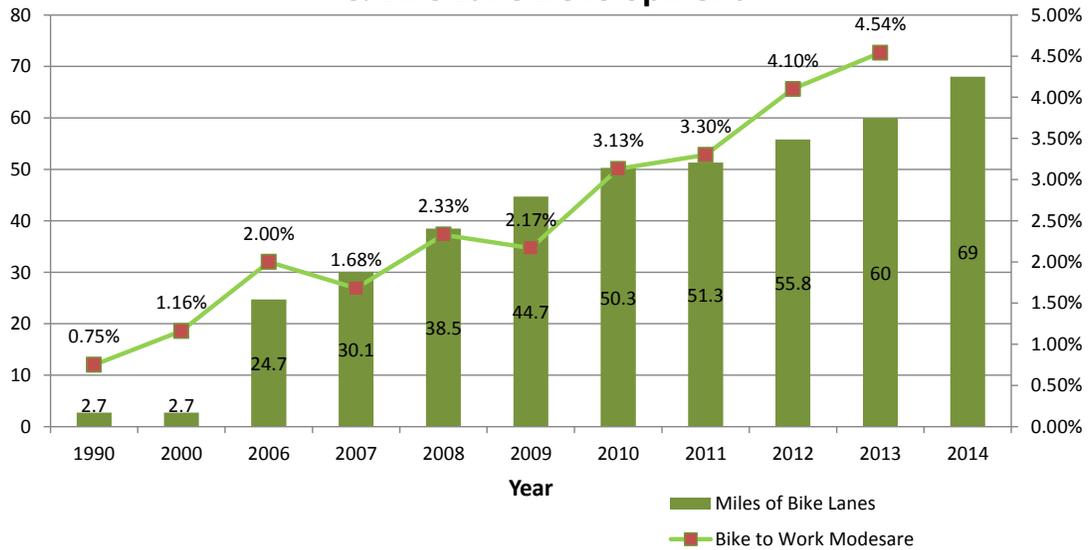
Rail and bus transit via Metro and connector services is looked upon as a means of reducing traffic congestion and thereby creating a positive impact on pollution and air quality. It also has a direct relationship to land use planning and development because rail transport centers are ideal locations for business and housing developments. Bus traffic includes school buses, most of which are transporting students during rush hour periods.

Commercial vehicular transportation, mainly trucks and buses, are another serious factor impacting the environment. Trucks, whether they are local, inter-county or interstate, are serious contributors to the environmental crisis. In addition to many of them using “dirty” diesel fuel, they also have a negative impact on traffic congestion.

Non-motorized transportation such as walking and biking, are gaining popularity in urban areas and being considered as viable alternatives to vehicles. Biking and walking reduce traffic congestion and improve air quality. Not having sufficient infrastructure for walking and biking is a major impediment to expanding non-motorized options. The

District of Columbia (D.C.) has been making investments since 2000 with over 69 miles of bike lanes in place and a steadily growing proportion of bicycle commuters¹⁶.

**Figure II-8
DC Travel to Work by Bicycle
& Bike Lane Development**



“Virtual transportation” is another viable alternative to motorized transportation. Modern technology has created opportunities for people to work from home, using computers for telecommuting and e-commerce to perform jobs. Fairfax County is a leader in this field with the Fairfax County Government Telework Program.

While there are many options, they are not utilized equally. The U.S. Census tracks the modes used by people to get to work each day. The 2013 data shows that of the 605,584 workers, 16 years and over, who live in Fairfax County:¹⁷

- 72.4 percent drove alone to work in a car, truck or van. (SOV)
- 8.5 percent of those workers commuted via carpool or vanpool. (HOV)
- 9.6 percent used public transportation (excluding taxicabs).
- 1.6 percent walked to work.
- 1.7 percent used other means (including biking).
- 6.1 percent worked at home. (This number may not fully represent the true number of teleworkers in Fairfax County.)

¹⁶ <http://ddot.dc.gov/publication/2014-bike-program-fact-sheet>

¹⁷ Source: U.S. Census Bureau 2013 American Community Survey 1-year estimate, Commuting Characteristics. Area: Fairfax County.

Across all modes, the mean travel time to work is 31.7 minutes. The Metropolitan Washington Council of Governments has noted: ¹⁸

“Nearly three-quarters of Fairfax County resident workers commute to work by driving alone, compared to 68 percent of the Washington region’s workers. Seven percent of Fairfax County’s resident workers use public transportation, compared to 11 percent of the Washington region’s workers. Thirteen percent of resident workers of both Fairfax County and the Washington region use car pooling as a means of transportation to their jobs.

Of the 350,714 owner-occupied housing units in Fairfax County, 4% (14,207 housing units) do not have vehicles. For renter-occupied housing units, approximately 9% do not have vehicles.”

An interesting statistic on commuter patterns is that over 50 percent of the residents in Fairfax County work in Fairfax County (see Table II-2), with another 16 percent working in the District of Columbia. Similarly, most of the workers in Fairfax County live in Fairfax County (see Table II-3); however over 80,000 workers commute to jobs in Fairfax County from Prince William and Loudoun counties. Only 12,000 workers commute to the county from the District of Columbia.

Table II-2 Where do Residents of Fairfax County Go to Work?		
<u>Workplace</u>	<u>Number of Commuters from Fairfax County</u>	<u>Percent of Total Commuters from Fairfax County</u>
Fairfax Co, VA	302,425	54.76%
District of Columbia	90,207	16.33%
Arlington Co, VA	48,242	8.74%
Alexandria City VA	31,716	5.74%
Montgomery Co, MD	16,722	3.03%
Loudoun Co, VA	21,041	3.81%
Fairfax City, VA	17,904	3.24%
Prince George's Co, MD	9,948	1.80%
Prince William Co, VA	9,620	1.74%
Falls Church City, VA	4,446	0.81%
<i>Source: www.census.gov/population/metro/data/other.html -- Residence County to Workplace County Flows for the United States and Puerto Rico Sorted by Residence Geography: 2006-2010</i>		

¹⁸ Source: January 2006 publication “Fairfax County and the Washington Region: A Look at Economic and Demographic Characteristics” (p.5):

Table II-3		
Where Do Workers in Fairfax County Come From?		
<u>Residence</u>	<u>Number of Commuters to Fairfax County</u>	<u>Percent of Total to Fairfax County</u>
Fairfax Co, VA	302,425	58.32%
Prince William Co, VA	55,692	10.74%
Loudoun Co, VA	55,044	10.61%
Montgomery Co, MD	21,585	4.16%
Arlington Co, VA	22,064	4.25%
Prince George's Co, MD	17,861	3.44%
Alexandria City, VA	15,028	2.90%
District of Columbia	12,777	2.46%
Stafford Co, VA	8,005	1.54%
Fauquier Co, VA	5,542	1.07%
Manassas City, VA	2,528	0.49%
Total	518,551	100.00%
<i>Source: Residence County to Workplace County Flows for the United States and Puerto Rico Sorted by Residence Geography: 2006-2010</i>		

2. Transportation Decision Making

Fairfax County’s transportation decisions are complicated by the interrelationships of federal, state, regional, sub-regional and local entities involved in transportation planning and funding. The **Fairfax County Department of Transportation** has the mission to represent local interests in transportation to plan, coordinate and implement a multi-modal transportation system for Fairfax County that moves peoples and goods, consistent with the values of the community. Coordination is essential because transportation programs are quite complicated, with different authorities participating together. For example, the Commonwealth of Virginia owns and maintains every public road in the county, even subdivision cul-de-sacs. These roads are maintained by the **Virginia Department of Transportation**.

In 2013, a new transportation funding plan was approved in Virginia. This plan increased funding for transportation from an additional \$392 million in FY 2014 to \$817 million in 2018, for a total of almost \$3.3 billion. In addition, regional funding has been provided for Northern Virginia (\$1.6 billion over five years) and Hampton Roads (\$1.1 billion over five years). In Northern Virginia, 30 percent of funds go to localities and 70 percent of funds are for regional projects approved by the Northern Virginia Transportation Authority. Funds can be used for road construction, projects that reduce congestion and public transportation projects that expand capacity.

The Virginia **Commonwealth Transportation Board** has final approval authority over the six-year transportation program for the entire state. Under guidance of the CTB, the Virginia Department of Transportation is responsible for building, maintaining and operating the state's roads, bridges and tunnels. The long term goals for multimodal transportation across the commonwealth are documented in VTrans2035. The next update to the comprehensive plan, VTrans2040, is currently under way, with visioning expected in 2015 and a final product in 2016.¹⁹

On April 6, 2014, Governor Terry McAuliffe signed *House Bill 2* (HB2). HB2 became effective as of July 1, 2014 and requires the Commonwealth Transportation Board (CTB) to develop and implement a quantifiable, transparent prioritization and funding process for all modes of transportation by July 2016. The prioritization process will evaluate projects for six evaluation measures, one of which is environmental quality to reduce pollutant emissions and energy consumption, and minimize the impact on natural and cultural resources.²⁰

The **Northern Virginia Transportation Authority** (NVTA) is charged by the Virginia General Assembly with preparing a regional transportation plan for Northern Virginia, including transportation improvements of regional significance. NVTA published *TransAction 2040—Northern Virginia Transportation Plan*, November 2012²¹ with the following goals:

1. Provide an integrated, multimodal transportation system.
2. Provide responsive transportation service to customers.
3. Respect historical and environmental factors.
4. Recognize the linkage between transportation and land use.
5. Incorporate the benefits of technology.
6. Identify funding and legislative initiatives needed to implement the Plan.
7. Enhance Northern Virginia relationships among jurisdictions, agencies, the public, and the business community.

The goals require balancing of various interests, but the priorities of multi-modal systems and respecting environmental factors highlight the importance of integrating transportation with land use and environmental quality.

A further description of the interplay of planning and funding of projects between agencies in the metropolitan Washington area can be found in “A Citizens Guide to Transportation Decision-Making in the Metropolitan Region” (May 30, 2008), which is available from the Transportation Planning Board of the Metropolitan Washington Council of Governments.²²

¹⁹ www.vtrans.org/plans.asp

²⁰ Provided 2015 by John Muse, VDOT District Environmental Manager

²¹ www.thenovaauthority.org/planning-programming/transaction-2040/

²² www.mwcog.org/store/item.asp?PUBLICATION_ID=82

For Fairfax County, the transportation goals are included in, and promulgated through, the Fairfax County Comprehensive Plan. Those projects that are to be funded by county resources are included in the county’s Capital Improvement Program. However, transportation projects that are to be funded through state and federal funding are included in the Virginia Department of Transportation’s six-year transportation program.

a. The County’s Six-Year Plan for Transportation²³

On January 28, 2014, the Board of Supervisors approved a county Six-Year Plan (CSYP) for transportation with a priority project list for funding for FY 2015 – FY 2020. This new plan includes nearly 200 new projects, totaling \$1.4 billion in funding, and includes improvements to roadways, bicycle and pedestrian facilities and transit improvements. It is envisioned that the CSYP will be revised annually, resulting in a rolling funding plan for county transportation projects. It will also be updated to reflect actions of the Commonwealth Transportation Board, the Northern Virginia Transportation Authority and other funding agencies.

Since 2004, significant bond and Commercial and Industrial (C&I) funds have been utilized to supplement federal and state-managed projects in order to move them to construction. These include the Stringfellow Road widening, which was completed in June 2015, Fairfax County Parkway/Fair Lakes Parkway/Monument Drive interchange (completed in October 2013), the extension of Jeff Todd Way (formerly Mulligan Road) and Telegraph Road widening from Beulah to Leaf and widening of Telegraph Road from South Van Dorn Street to South Kings Highway. Lorton Road, one of the largest projects managed by Fairfax County, is currently under construction with scheduled completion in fall 2016.

b. Comprehensive Transit Plan (CTP)/Transit Development Plan²⁴

The county is currently updating the Comprehensive Transit Development Plan which is the main guide for Fairfax Connector and Metrobus service expansion and changes in the county. Fairfax Connector plays a significant role in the overall transportation system. On an average weekday, the system carries over 40,000 passengers, with 270 buses, serving over 84 routes. This is approximately 55 percent of the county bus service, the remainder being provided by Metrobus.²⁵

The phase 1 service recommendations for the CTP can be found online at:
www.fairfaxcounty.gov/fcdot/connections2015/.

From the summary: *“Most of the recommendations are centered around improving an already robust bus network. This includes improvements to frequency and span of service, such as additional midday or weekend service. In addition, recommendations*

²³ Provided 2015 by Fairfax County Department of Transportation

²⁴ www.fairfaxcounty.gov/fcdot/connections2015/

²⁵ www.fairfaxcounty.gov/fcdot/pdf/ctp/ctp_tech_memo_1.pdf

to routing to streamline operations and provide quicker service, or alternatively recommendations for rerouting existing buses to serve new destinations, are also included. Finally, new routes have been recommended to connect locations that either do not have transit connections today or do not have a direct connection. In addition to these improvements, the recommendations outlined in this CTP include specific suggestions related to four key areas: Silver Line feeder service, inter-jurisdictional services, cross-county services, and alternatives to fixed-route bus service.”

c. Tysons and Herndon Metrorail Station Access Management Studies

The Board has chartered two Metro station access management studies: the Tysons Station (TMSAMS) and the Herndon (HMSAMS). Tysons was approved in June 2009 and Herndon was approved in Fall 2013. The purpose of each was to engage the public to identify and prioritize necessary bicycle and pedestrian facility projects to improve access to the future Metrorail stations. The effort was led by the Fairfax County Department of Transportation (FCDOT), was guided by a diverse advisory group, was supported by a consultant team and included public outreach.

The HMSAMS Final Report was completed in September 2014 and presented to the Fairfax County Board of Supervisors Transportation Committee on January 20, 2015. The final report is on the Web at:

www.fairfaxcounty.gov/fcdot/pdf/hmsams-report-final.pdf.

As noted in the final report: *“Providing opportunities to walk and bicycle to Metrorail will be critical to the success of the transportation network in the station areas overall and to building ridership for Metrorail. Driving is a dominant mode of travel in the study area today [2014] and will continue to be important in the future. Bicycling and walking need to become more prevalent to help fully realize the benefit of the county’s Metrorail investment.”*

d. Urban Street Standards²⁶

An example of decision making can be seen in the designation of urban street standards and applying them in county urban centers. Urban standards include narrower lanes, pedestrian/bicycle paths on either side of the road, tree buffers between the street and path, reduced speed limits and safe crossings. These features are safer for pedestrians and multi-modal users and appropriate for use wherever land-use density is significantly increasing.

The Virginia Department of Transportation (VDOT) is collaborating with Fairfax County on its efforts to develop multimodal system plans for the long term viability of older commercial areas, including the designated Commercial Revitalization Districts/Areas of Annandale, Springfield, Merrifield, Baileys Crossroads/Seven

²⁶ Provided 2014 by Kris Morley-Nikfar, Fairfax County Department of Transportation

Corners, McLean and the Richmond Highway Corridor as well as Reston and Tysons Corner.²⁷

VDOT’s *Transportation Efficient Land Use and Design Guide* offers information on principles and design best practices, the benefits of such design, planning for transportation efficient growth, methods for engaging the public in the planning process and implementation strategies. The Virginia Department of Rail and Public Transportation (DRPT) developed *Multimodal System Design Guidelines*, which provides a roadmap for the incorporation of these same concepts into activity center (higher density mixed-use development) design. VDOT has adopted the DRPT guidelines as alternate street design standards that may be used by localities for the construction of streets within activity centers. Supplemental information for the adoption of DRPT Guidelines as alternate standards by localities is found in Appendix B(2) of VDOT’s *Road Design Manual*. These reference materials may be viewed on the following link:

www.vdot.virginia.gov/info/transportation_efficient_land_use_and_design_guide.asp

3. Electric Vehicles

Electric vehicles offer an environmentally friendly alternative to gasoline vehicles. Both the county and COG are working to provide facilities and options for charging electric cars.

In August 2011, the MITRE Corporation, per a proffered commitment to sustainability-related work for the benefit of Fairfax County, completed a report titled “Electric Vehicle Charging Infrastructure Recommendations to Fairfax County.” The report included several recommendations, with a particular focus on electric vehicle charging-related opportunities associated with redevelopment in Tysons Corner. The MITRE report was transmitted to the Board of Supervisors, which, in turn, referred the report to the Planning Commission for its review and recommendation.

Per that report: “Plug-in vehicles feature prominently in the vision for a livable, sustainable Tysons Corner. They promise cleaner, quieter transportation that is less dependent on the political stability of other parts of the world, but they come at the price of being a fundamentally different way of powering the automobile fleet. Charging will largely be done over long periods of time at distributed locations, rather than at particular fueling stations. As Tysons Corner evolves from a suburban office park to an urban center, the evolution to an electric automotive fleet will affect urban layout, building design, and utility services.”

The report recommends that the county encourage developers to build the infrastructure to support electric vehicle charging, then phase in the actual devices and parking reservations as the technology becomes accepted.

²⁷ Provided 2015 by John Muse, VDOT District Environmental Manager

The Planning Commission's Environment Committee has been reviewing the MITRE report and its recommendations. The committee received presentations from: MITRE Corporation; the Fairfax County Environmental Coordinator (regarding related efforts at the regional level); and three private sector providers of electric vehicle supply equipment. The committee developed a series of policy questions for consideration based on these discussions. A draft white paper was prepared that provided: an overview of the review process; background information regarding electric vehicle charging; Comprehensive Plan guidance as it relates to this issue; guidelines and requirements of other jurisdictions; and draft recommendations on each of the policy questions. The Environment Committee has completed its review and is forwarding its recommendations to the full Planning Commission for its consideration.

COG's electric vehicle initiatives began in early 2011, leading to the creation of a stakeholder-driven task force, whose mission was to develop regional and local program and policy recommendations that would facilitate adoption of electric vehicles. Kambiz Agazi, Fairfax County Environmental Coordinator, served as Task Force co-chair. Subgroups addressed comprehensive planning, zoning, building codes and permitting/inspection, infrastructure siting, energy utility policy and outreach and education.

Task Force stakeholders contributing to the process included electric vehicle owners, state and local government staff (transportation and energy planners), electric vehicles Original Equipment Manufacturers, electric vehicle supply equipment suppliers, non-profit organizations (e.g., Georgetown Climate Center, Electric Drive Transportation Association, Electric Vehicle Association of Greater Washington D.C.), the Greater Washington Regional Clean Cities Coalition and electric utility representatives from the region.

In 2012, COG published a report: "Electric Vehicles in Metropolitan Washington" (www.mwcog.org/store/item.asp?PUBLICATION_ID=449). The report provides a comprehensive look at regional EV readiness and offers recommendations to address barriers to EV use. The report stresses the benefits of EVs, including reducing greenhouse gases, improving air quality and dramatic fuel costs savings.

The top five recommendations from the report to encourage greater EV use in metropolitan Washington are:

1. A Washington Regional Electric Vehicle Partnership should be formed to develop a business case for EVs and to assess the potential for community return on investment.
2. Consider offering incentives such as preferred parking, HOV occupancy exceptions and tax credits to promote EV adoption.
3. Electric permitting procedures should identify EV charging station installations and notify electric utilities of their locations.
4. Outreach and education is needed to promote EV adoption and inform the public of its benefits.

5. Local government comprehensive plans and zoning regulations should guide EV infrastructure development and ensure that the built environment can accommodate future EV charging station installations.

The 2014 and 2015 EV work program years focused on three key areas:

1. Supporting the eight state zero-emission vehicle (ZEV) Program MOU.
2. Developing and conducting the COG-vision fleet pilot assessment.
3. Promoting work place charging.

The ZEV MOU is an agreement that was signed in October 2013 by the governors of eight states, including Maryland, to adopt or consider adopting regulations requiring increasing sales of zero-emission vehicles. To promote regional collaboration, COG partnered with the Maryland Electric Vehicle Infrastructure Council to conduct a Regional EV Readiness Workshop. The purpose of the workshop was to promote shared standards and region-wide EV infrastructure development. Noel Kaplan, Senior Environmental Planner with the Fairfax County Department of Planning and Zoning, highlighted the county Planning Commission's Environment Committee review process and electric vehicle charging infrastructure recommendations prepared by the MITRE Corporation.

4. Non-motorized and Public Transportation

The Board of Supervisors directed FCDOT to lead the effort to improve bicycle and pedestrian safety and mobility, including constructing bicycle and pedestrian improvements in high-priority areas of Fairfax County. Through FY 2020, the board has designated over \$313 million in federal, state and county funding to construct high-priority bicycle and pedestrian improvement projects throughout the county. The following sections describe FCDOT programs related to multimodal and public transportation.

a. Walking – the Pedestrian Program

The pedestrian program includes projects on major roadways, in activity centers, providing access to Metro stations and completing neighborhood missing links. From FY 2008 through FY 2015, the county completed construction on 121 sites/segments; 16 are under construction and another 96 are under design.²⁸

The pedestrian program also has a role in pedestrian education and outreach in Fairfax County. Fairfax County is the local government funding leader for regional Street Smart Pedestrian and Bicycle Safety Media campaigns, which have used television, radio, print and bus advertising to promote safety awareness responsibilities of drivers and pedestrians. The Pedestrian Program Manager, Bicycle Program Coordinator, Bus Stop Coordinator, Pedestrian/Bicycle Planner and

²⁸ Provided 2015 by Fairfax County Department of Transportation

Pedestrian Outreach Coordinator are all involved in community outreach. FCDOT coordinates with other facility resources and departments as appropriate.

The Fairfax County Police Department conducts pedestrian safety enforcement in high pedestrian crash areas countywide. Fairfax County is one of the few jurisdictions in Virginia permitted to install “Yield to Pedestrians in Crosswalk \$100 - \$500 Violation Fine” signs. The county has installed and maintains over 1,800 of these signs at 455 intersections.

VDOT administers the Transportation Alternatives Program (formerly the Transportation Enhancement Program) for qualifying activities. At its June 2013 meeting, the Commonwealth Transportation Board allocated FY 2014 funds to sponsors in Fairfax County:

- \$400,000 to Fairfax County for the continuation of the Mason Neck Trail along Gunston Road to connect Pohick Bay Golf Course and the Mason Neck State Park main entrance.
- \$119,347 to Fairfax County for construction of Cross County Trail to connect Occoquan Regional Park and the Laurel Hill Greenway.
- \$172,000 to the Town of Vienna for pedestrian improvements at the Vienna station and W&OD trail.
- \$281,000 to the Town of Clifton for streetscape and pedestrian safety improvements on Main Street.
- \$150,000 to the Town of Herndon for streetscape and pedestrian improvements in Historic Herndon.²⁹

b. Biking --The Fairfax County Comprehensive Bicycle Initiative³⁰

Fairfax County’s bicycle program was established by the Board of Supervisors in 2006 and the responsibilities for program implementation were assigned to the Department of Transportation. The program addresses both capital and non-capital bicycle projects. Some of the program’s early accomplishments included the installation of bicycle racks on all Fairfax Connector buses and the production of the county’s first bicycle route map, now in its third printing and also available on line and as a smartphone app.

The Bicycle Master Plan and the bicycle parking guidelines are both important. The Bicycle Master Plan (BMP) was adopted by the Board of Supervisors on October 28, 2014. The BMP sets bicycle policies, programs and facilities for the county.

²⁹ Correspondence from William C. Cuttler, PE, VDOT District Construction Engineer 7/9/13

³⁰ Provided 2015 by FCDOT and 2105 Fairfax County Transportation Status Report

The parking guidelines expand on the success of the county's new secure bicycle parking facilities at Silver Line stations and other county park-and-ride/transit facilities. Funding for implementation of both capital and non-capital elements of the county's bicycle master plan is required. The county should consider implementation of "Bike Fairfax!"--a program for encouraging/promoting bicycling as a transportation mode with related education and outreach.

As directed by the Board of Supervisors, a major goal was the development and printing of the first "Fairfax County Bicycle Route Map," issued on May 16, 2008, which was that year's "Bike to Work Day." The map defines a network of preferred as well as less preferred on-road bike routes that enable bicyclists to traverse the county. The county printed 6,000 copies initially and another 41,000 as a result of demand for the maps. Electronic copies of the "Fairfax County Bicycle Route Map" are available at: www.fairfaxcounty.gov/fcdot/bike/bikemap/.

Current program highlights include:

- Secure Bicycle Parking Facilities: Staff is finalizing work on new "Bike and Ride" facilities at various locations countywide including: Phase II Silver Line stations, Stringfellow Road Park-and-Ride Lot and Springfield Community Business Center Commuter Parking Garage. This builds on the first "Bike & Ride" facility at Wiehle-Reston East Metrorail station. That facility provides enclosed, secure bicycle parking for over 200 bikes. There are over 255 paid members accessing the room.
- Improving connectivity/access for bicyclists by completing missing links, providing wayfinding signage and retrofitting roadways with on-road bike lanes:
 - Cinder Bed Road Bikeway: FCDOT has received \$500,000 in grants to initiate environmental studies and preliminary engineering for the Cinder Bed Road Bikeway. This project will provide a new bicycle and pedestrian facility approximately three miles in length connecting the Franconia-Springfield Metrorail station and Springfield CBC to Fort Belvoir and activity centers to the south. The facility combines on-road bike lanes and shared use paths.
 - Vienna Metro-City of Fairfax-George Mason University (GMU) Connector: This is a cooperative project with the city, GMU and the Northern Virginia Regional Park Authority. A new trail connection from Towers Park to Vaden Drive will be an integral part of this route. This project has been funded and preliminary engineering has begun
- Bicycle Route Signage-Countywide: Staff has completed designs for the Reston area near the Metrorail station that would route bicyclists from and to the Metrorail. Staff continues to work on routing locations with the Silver Line stations.
- Western Fairfax Historic Cycle Tour: This pocket map has been completed. Staff is working with the Sully District to pick a sign design which will then be manufactured and placed along the route. Staff will also proceed with printing copies of the map book.

- Reston Capital Bikeshare Feasibility Study: The study was completed in July 2014. A second grant providing \$400,000 for bikeshare infrastructure will be used to fund implementation of the program. Staff will be meeting with other county agencies and stakeholders to develop additional funding opportunities that will be needed to implement the project.
- 2015 Repaving Program: VDOT and FCDOT are working in close coordination to identify locations to improve multimodal safety and access by adding bicycle lanes during the annual summer repaving. Through a variety of methods, VDOT and FCDOT are able to add bicycle lanes to roads with extra width or capacity in their current configuration. The recently adopted bicycle master plan is helping to guide this process by matching roads listed on the repaving schedule to roads that have been identified for bicycle facilities. Successful projects that were completed in this manner include Lawyers Road, Soapstone Drive and Sherwood Hall Lane.

c. VDOT Pedestrian/Bicycling Facilities and Safety³¹

VDOT administers the Safe Routes to School program (SRTS), a federally funded program to promote safe walking and bicycling to school by students, including those with disabilities. The SRTS program offers funding grants for three different project types: (1) Infrastructure Projects; (2) Activities and Programs Projects; and (3) Quick Start Non-infrastructure Activities. On the latter funding program, 16 elementary schools in Fairfax County have received grants. More information is at: www.viriniadot.org/programs/tes_Rt2_school_pro.asp.

VDOT continues to ensure that biking remains an integral component of Virginia's multimodal transportation system and is a local sponsor of Bike to Work Day events promoted by the Washington Area Bicyclist Association and Commuter Connections. In collaboration with county staff and partnering organizations, several initiatives have been implemented affecting bicyclists and pedestrians. The following projects were completed in 2015:

- U.S. Route 50 widening from Route 28 to Poland Rd (Loudoun County) includes a shared use path on both sides.
- The Stringfellow Road widening between Fair Lakes Blvd and U.S. Route 50 includes a sidewalk on one side, a shared use path on the other side and 14' wide curb lanes.
- The Telegraph Road improvements between South Van Dorn Street and South Kings Highway includes two striped, four-foot-wide on-road bike lanes, a five-foot-wide sidewalk on the east and 10-foot-wide shared-use path on the west.
- The newly constructed Jeff Todd Way between Telegraph Road and Richmond Highway includes five-foot-wide sidewalks and wide curb lanes to accommodate bicycles.

³¹ Provided 2015 by John Muse, VDOT District Environmental Manager

Additional resources about bicycling and walking are available at:
www.virginiadot.org/travel/nova-mainBicycle.asp.

d. Bus transit--Fairfax Connector and Metro Bus³²

The county initiated the Fairfax Connector in September 1985 as a county-sponsored, cost-effective alternative to the bus service by the Washington Metropolitan Area Transit Authority (WMATA). The Fairfax Connector system now consists of 84 routes that provide over 650,000 revenue hours annually, representing 55 percent of the total bus service in the county. Fairfax Connector's available revenue vehicle fleet consists of 30-, 35- and 40-foot heavy-duty transit buses, all of which are owned by the county. The service, including the hiring and training of drivers and the maintenance of vehicles, is operated under contract with a private firm. Fairfax Connector buses operate within Fairfax County (including the Towns of Vienna and Herndon) and also provide commuter service to and from Arlington County (Crystal City and Pentagon).

Fairfax Connector has made several improvements to reduce emissions: reducing auto shutdown from 10 minutes to five minutes; switching from tires filled with air to nitrogen; and reducing the average age of the fleet to 2.8 years. FCDOT replaced 17 buses in FY 2015. All newer buses are equipped with Mini-Hybrid technology and meet strict EPA standards by using the newest emissions reduction technology. The maintenance and service buildings at West Ox Road have been converted to landfill gas for heat, which turns wasted energy into a useful product.

Connector is a compliment to Metro, and as Metro expands, Connector routes adapt to maximize the effectiveness of the new stations. With the Silver Line opening, coverage had to be modified to complement the faster Metro service in the northwest corner of the county. Two rounds of service changes have been implemented since the commencement of Silver Line service in July 2014. In total, approximately 40 percent of all Fairfax Connector bus service has changed to fit with the new Silver Line stations.

Highlights of the January 2015 service changes include:

- A new schedule to reduce passenger crowding and add extra time for buses to serve the Springfield Town Center and bus facility constructed at the Dunn Loring-Merrifield Metro station.
- A new schedule and added weekday trips between Fair Oaks and Reston.
- A change in the hours of operation of a portion of Route 335 to Fort Belvoir.
- Schedule adjustments to routes serving the Silver Line Metro stations to reflect current traffic conditions.

³² Fairfax County DOT, Suggested Information for 2015 EQAC Annual Report

In May 2015, changes to 23 Fairfax Connector routes were implemented to improve on-time performance, enhance connectivity between routes and Metrorail and expand connections in the I-95 and I-395 corridors between Springfield, the Mark Center and Pentagon. Highlights of the May 2015 service changes include:

- New Reston internal schedules reflecting added trips and route changes.
- In Springfield, new service to the Mark Center and Pentagon.
- In Tysons, restructured service providing more direct, two-way service for passengers connecting with Silver Line on circulator routes.
- On the Tysons express lane service, schedule changes and consolidation. As a result, in June 2015, average daily ridership is approximately 150 passengers on Route 494 and approximately 64 passengers on Route 495. This is an increase over the FY 2014 average of 79 and 35 average daily riders on routes 494 and 495, respectively.
- In Lorton, the extension of Route 494 to the Lorton VRE station.

e. Bus Stop and Shelter Improvement Programs

In compliance with the agreement between the Department of Justice and Fairfax County, FCDOT has completed self-assessments of major park-and-ride facilities and bus stops improved by the county since 2007. FCDOT has submitted a remediation plan and anticipates completing remediation work over the next several years. Stop improvements are ongoing; they include improvements such as the construction of concrete or asphalt pads and accessible paths to and from bus stops. Progress in 2015 includes:

- 29 bus stop sites completed (457 sites have been completed to date).
- 26 bus stop sites authorized for or currently under construction.
- 55 bus stop sites in design or land acquisition phase.
- Eight bus stop sites in project initiation phase.

FCDOT is engaged in a public/private partnership to improve bus stops and increase the number of bus shelters in the county. This program is expected to raise \$50,000 (less shared construction cost) in FY 2014 through the sale of advertising space on bus shelters. The contractor sells advertising space to subsidize construction, maintenance and operation of bus shelters and will share a percentage of the surplus revenues with the county. The current agreement permits several different advertising options and styles. The county's revenue share has been below initial estimates, but recent increases in advertising sales are anticipated to be sustained for the next two years.

5. Transportation Demand Management, Alternatives and Outreach

Transportation Demand Management is an important approach to maximize the effectiveness of the overall transportation network. The Mobility Lab³³ describes TDM as “*a program of information, encouragement and incentives provided by local or regional organizations to help people know about and use all their transportation options to optimize all modes in the system – and to counterbalance the incentives to drive that are so prevalent in subsidies of parking and roads.*” The Mobility Lab goes further to explain that “*TDM should guide everything we do in designing our transportation and physical infrastructure so that alternatives to driving are naturally encouraged and our systems are better balanced. TDM thus underlies most of the important new initiatives of today: transit-oriented development, complete streets, walkable activity centers, livability and sustainability initiatives, and integrated corridor management, to name a few examples.*”

Fairfax County has been practicing TDM for many years, starting with early work encouraging telework and workforce flexibility, to new programs that tie TDM to development and county employees, residents and businesses to make better transportation choices.

a. TDM Tied to New Development in Fairfax County³⁴

The county has integrated Transportation Demand Management strategies into the land development process and has standardized this program. TDM proffers promote alternatives to single occupant vehicle trips. These proffers contain commitments to provide TDM services, goals for percentage trip reduction and remedies or penalties for nonattainment of proffered goals. The TDM proffer coordinator negotiates proffers and monitors implementation and performance of existing proffers. A comprehensive and standardized program for TDM was endorsed by the Board of Supervisors in 2012. In FY 2015, TDM proffers were committed for new developments in Reston, Fairfax, Tysons and Merrifield. Refinement to the reporting format was performed to streamline staff’s ability to locate information quickly and also to remove redundancies, enabling quicker production times on the developer side. The implementation of TDM has been going smoothly, and proffer monitoring continues for properties throughout the county. Overall, the standardized TDM proffers are still seen as a benefit by all involved parties when compared to the previous method of securing TDM commitments.

³³ <http://mobilitylab.org/about-us/what-is-tdm/>

³⁴ Transportation Information for EQAC 2013, Kris Morley-Nikfar, FCDOT and Updated June 8, 2011, Dan Southworth, FCDOT

b. TDM for Employers—Results of the Transportation Services Group³⁵

The combined transportation demand management programs and outreach efforts of the FCDOT Transportation Services Group, along with programs sponsored by the Metropolitan Washington Council of Governments Commuter Connections program, have allowed the county in FY 2015 to continue to reach tens of thousands of people who live or work in Fairfax County with messages about environmentally friendly transportation options.

541 Fairfax County employers have implemented Transportation Demand Management programs. Of those programs, 263 are at level three or four, which means they have implemented benefits or programs that significantly help to reduce single-occupant vehicles. Outreach to businesses to encourage employee transportation benefits reached 670 new employers, impacting thousands of employees and commuters.

The RideSources program received 691 on-line applications from commuters looking for car or vanpool matches last year; over 255 participants were re-registered. RideSources staff assisted the regional Guaranteed Ride Home program by adding 168 commuters.

Information about transportation options such as the HOV and Express Toll lanes, RideSharing, Guaranteed Ride Home, SmartBenefits Plus50, car sharing, using bus and rail and teleworking is disseminated at outreach events throughout Fairfax County. In total, the Transportation Services Group (TSG) of the Fairfax County Department of Transportation participated in over 59 events within the community such as town fairs, employer fairs and public meetings.

The TSG, in partnership with the Center for Urban Transportation Research, has designated nine additional Fairfax County employers as “Best Workplaces for Commuters” in FY 2015. This raises the total number of recognized sites in Fairfax County to 47 since the program started in 2010. The employers were recognized by the Board of Supervisors in December for the broad range of transportation options offered to their employees. The “Best Workplaces for Commuters” program, managed by the National Center for Transit Research (NCTR) at the University of South Florida, provides employers who meet the National Standard of Excellence in commuter benefits with national recognition and an elite designation for offering outstanding transportation options to employees. Fairfax County staff also assisted NCTR in the conception and development of the national “BEST SITES” category, which recognizes developers, malls and office parks that have implemented planet-friendly trip reduction programs.

³⁵ Provided 2015 by Fairfax County Department of Transportation

The TSG continues outreach efforts including congestion mitigation and support for Base Realignment and Closure construction and relocation efforts. Fairfax County is working with VDOT and DRPT to provide transportation alternatives to employers impacted by I-66 and, I-95 Express Toll and Rail to Dulles construction. These ongoing activities have given the Employer Services program and RideSources team additional exposure to decision makers with many of the top corporations and organizations in Fairfax County.

c. TDM for Residents—Commuter Friendly Communities Program³⁶

The FCDOT Commuter Friendly Communities program partnered with over 247 multi-family complexes, area developers and civic organizations to promote telecommuting, mass transit, carpools, vanpools, biking and walking instead of drive-alone commuting.

The Transportation Services Group also supports transportation management associations that assist commuters and the community. Some of these include the Dulles Area Transportation Association, LINK of Reston Town Center, TyTran in Tysons Corner and the Transportation Association of Greater Springfield.

d. Fairfax County Telework Initiative³⁷ and Options for County Employees

Fairfax County encourages employees to take public transportation to work through the Commuter Benefits Program. In 2014, there were 232 employees participating in the program. The county also provides reserved parking spaces for carpools and vanpools at some facilities.

The county has a long history with telework. Starting with 138 participants in 2001, the program increased to over 1,000 by 2005 (thereby meeting a goal that was set based on the Metropolitan Washington Council of Governments' goal of having 20 percent of the regions' eligible workforce teleworking by 2005). In 2015, there were 1,884 eligible county employees who teleworked at least one day a week.³⁸ The county's active partnership in regional efforts to expand telework keeps it current on best practices and identifies the county as a resource for businesses on teleworking.

Based on information provided to EQAC previously regarding the 2005 telework goal, it is estimated that county teleworkers potentially saved roughly 80,000 commuting hours and 2.5 million commuting miles in a year. The county will continue to emphasize telework as an important component of its Continuity of Operations Planning, in order to ensure that county workers have the tools to work from remote sites.

³⁶ Provided 2014 by Kris Morley-Nikfar, Fairfax County Department of Transportation

³⁷ Ibid + E-mail from Catherine Chianese, Assistant Fairfax County Executive, Sept 7, 2011

³⁸ Provided July 2014 by Sharon Kay Hackett Organizational Development and Training Division

6. Highway Impact to Wetlands, Streams and Water Quality³⁹

Due to the linear nature of highway construction projects, the presence of environmental resources varies from project to project. Environmental impacts must be minimized or mitigated during highway construction and water quality maintained after construction.

Impacts to stream and wetland resources from VDOT projects and activities are avoided and minimized to the extent feasible. Avoidance of such impacts involves a balance with avoiding and minimizing technical, logistical, socio-economic as well as other environmental resource factors to find the most practical and least environmentally-damaging solution. For unavoidable impacts to aquatic resources federal/state water quality laws and regulations may require compensatory mitigation in order to obtain water quality permit authorizations from the permit regulators.

Beginning in 2008, the Environmental Protection Agency, the U.S. Army Corps of Engineers and the Virginia Department of Environmental Quality jointly supported an order of preference for compensatory mitigation: first through purchase of stream and wetland credits from approved commercial mitigation banks; second by payment of in-lieu funds; and third by permittee responsible mitigation (i.e., preservation, enhancement, and creation) for compensation of unavoidable impacts to aquatic resources. As a result, VDOT now purchases wetland and stream credits from approved mitigation banks to fulfill compensatory requirements. While compensatory mitigation is ultimately subject to approval of the regulatory permitting agencies; VDOT is open suggestions for exploring mitigation opportunities within the Fairfax County geographical area.

Prior to the 2008 ruling, VDOT was required to design and construct on-site mitigation areas during project construction. Within Fairfax County, VDOT created several mitigation sites on state right-of-way totaling approximately eight acres of wetlands (seven acres non-tidal and one acre tidal) and approximately 2,635 linear feet of restored streams associated with unavoidable impacts from VDOT highway improvement projects (e.g., Fairfax County Parkway, Route 28 widening, Roberts Parkway bridge overpass, Springfield Interchange improvements, Route 29 bridge replacement over Big Rocky Run, Richmond Highway widening and Woodrow Wilson Bridge replacement).

These compensatory mitigation sites have satisfied the success establishment criteria set by the regulatory permitting agencies and now exist in perpetuity as protected conservation easements. One of that last remaining on-site mitigation sites under active post-construction permit monitoring is associated with the I-95/Telegraph Road interchange improvement project (opened to traffic last year). The compensatory mitigation requirements for the unavoidable impacts included wetland enhancement/creation of 1.71 acres of tidal wetlands and 0.63 acre of non-tidal wetlands near the confluence of Taylor Run and Cameron Run plus 0.36 acre of stream restoration to relocated tributary to Cameron Run; these areas are in the third year of a five year monitoring period.

39 Provided 2015 by John Muse, VDOT District Environmental Manager

Since 1990, VDOT has been meeting its stormwater requirements by treating 858.55 acres of impervious road surface area through a system of 190 stormwater basins throughout the county. Under the new stormwater regulations effective last year, runoff from all existing and proposed impervious pavement on VDOT highway improvement projects will need to be treated before it is discharged to adequate outfalls. These new requirements will increase the acreage of impervious road surface as well as expand the number of best management practice (BMP) measures for treatment of stormwater runoff from highways.

7. Highway Environmental Programs⁴⁰

VDOT contributes information to EQAC for this report and several additional programs that are visible in Fairfax County should be highlighted. VDOT has indicated that it recognizes that solving transportation problems, no matter how simple or complex, also requires consideration of quality of life and the protection of the commonwealth's natural resources. EQAC appreciates and concurs with that new spirit.

a. Noise Barriers

Highway traffic noise is an important environmental issue and noise abatement measures help to improve quality of life for residents. Consistent with the Federal Highway Administration (FHA) regulation 23 CFR 772 and the State Noise Abatement Policy, construction of noise barrier systems have been completed on the following federal-aid projects in Fairfax County during FY 2014-15:

- Four new noise barrier systems on the Dulles Connector Road (VDOT Project # 0267-029-919,C501 / UPC 98232).
- Two replacement and three new noise barrier systems on the I-66 from Haycock Road to Lee Highway (VDOT Project No. 0066-96A-113, C501; UPC 78828).

Traffic noise studies are under way to assess impacts and determine whether noise barriers are warranted are presently under way for the following VDOT projects:

- Jones Branch Drive Connector over I-495 (administered by Fairfax County).
- Richmond Highway widening from Telegraph Road to Route 235.
- Route 7 bridge replacement and widening over the Dulles Airport Access and Toll Road.
- Route 7 corridor improvements from Reston Avenue to Jarrett Valley Drive.
- Route 28 corridor improvements from I-66 to Westfields Blvd.
- I-66 corridor improvements from I-495 to U.S. Route 15 in Prince William County.

⁴⁰ Provided 2015 by John Muse, VDOT District Environmental Manager

b. Environmental Commitment and Compliance Assistance Program

VDOT's *Environmental Commitments and Compliance Assistance Program* was developed pursuant to VDOT's *FY15 Business Plan*, which consists of eight Action Items/Goals. Action Item/Goal 4 is dedicated to Environmental Stewardship and requires VDOT "to protect the environment and improve the quality of life for Virginians" in its mission to build, operate and maintain highways. The primary objectives of this program are to establish a consistent process to communicate the environmental commitments (regulations, legislation and other legal requirements) at the beginning of project construction with active monitoring throughout the life of a project to ensure both compliance and proper implementation. The formal rollout of this program occurred on July 1, 2015.

c. Highway Lighting and Signals

VDOT Northern Region Operations (NRO) maintains and operates 224 dynamic message signs (DMS), most of which were installed in the early 1980s. Since 2010, NRO has been retrofitting DMS structures with light emitting diodes (LED). During the last fiscal year, 50 DMS signs utilizing the latest LED technology have been replaced throughout the interstate system in Northern Virginia.

The Northern Virginia District of VDOT maintains 1,382 traffic signals. Since the inception of a program to replace incandescent traffic signals with LEDs in 2002, more than 99 percent of all traffic signals in the district, including amber indicators and turn arrow signals, have been replaced with LEDs. The remaining non-LED traffic signals will be upgraded to LED by the end of the 2016 fiscal year with the funding available. VDOT no longer procures incandescent light bulbs for traffic signal use.

d. Landscaping and Aesthetics

VDOT has included landscaping on several road construction projects to enhance context-sensitive road design. Recent or current projects with landscaping include:

- Completion of the I-495 corridor-wide landscaping/reforestation project from Braddock Road to the Dulles Toll Road (14 miles along the inner and outer loops).
- Stringfellow Road widening between Fair Lakes Blvd. and U.S. Route 50.
- Jeff Todd Way between Telegraph Road and Richmond Highway.

Ongoing coordination continues among VDOT, the Fairfax County Restoration Project, Fairfax Re-Leaf and the Fairfax County Stormwater Planning Division on reforestation and stormwater management/water quality issues.

VDOT's *Wildflower Program* is funded through revenue fees paid of wildflower license plates at the Virginia Department of Motor Vehicles; approximately 3.5 acres

of right-of-way at four locations in Fairfax County are managed as wildflower meadows. Warm season, native grass species are seeded on construction projects where opportunity exists to take advantage of low maintenance requirements. Targeted control of invasive and nuisance vegetation is a large part of VDOT's *Roadside Vegetation Management Program* to promote the growth of more desirable species. Problematic roadside locations are prioritized for treatment and follow-up monitoring to reduce the population to a manageable level. For example, vegetation control work along segments of the pedestrian/ bicycle path along the Fairfax County/Franconia-Springfield Parkway was undertaken to remove and control encroaching brush as well as treat weeds growing in seams and cracks to provide a safer surface for path users.

e. Research

VDOT's research division, the Virginia Center for Transportation Innovation and Research (VCTIR), conducts research on current and future environmental topics related to maintenance, construction and operations of transportation systems. Current research projects include:

- ***Determining Animal Mortality Compost Maturity and Suitability for Road Project Applications for the Virginia Department of Transportation:*** The purpose of this study was to determine the time and treatment conditions necessary for compost vessels to generate mature compost and to evaluate the suitability of this compost for potential VDOT applications. The findings of this study were recommended for incorporation into a guidance document for VDOT animal mortality composting.
- ***Evaluation of a Buried Cable Roadside Animal Detection System:*** Animal-vehicle collisions (AVCs) are a concern resulting in hundreds of human fatalities and billions of dollars nationwide in property damage each year; VDOT currently spends over \$4 million yearly to remove about 55,000 deer carcasses from its roadways. An innovative animal detection system, a buried dual-cable sensor system, was installed and tested under controlled conditions at a site on the Virginia Smart Road where large wild animals, including deer and bear, are often observed in a roadside environment. The evaluation concluded the system: can reliably detect large animals if properly installed; can differentiate among animals, humans and vehicle intruders; performs well under various traffic conditions; and is not affected by snowfall. A pilot study to perform a "real world" evaluation on a public road with a high rate of AVCs was recommended.

Prior studies that have environmental impacts include:

- ***Assessment of Low Impact Development Strategies for the Lorton Road Widening Project, Fairfax County, Virginia:*** The primary objectives of this study are to: (1) determine the effectiveness of multiple LID systems for mitigating potential adverse impacts of highway stormwater runoff; and (2) determine the maintenance requirements, procedures and costs associated with LIDs used in the highway setting.

- **Permeable Pavement Pilot Using Porous Asphalt:** This study addressed questions pertaining to installation costs, constructability, maintenance requirements and long-term hydraulic performance of permeable pavements. The pilot project is located at the I-66/Route 234 Bypass Park and Ride Facility in Prince William County.

Ongoing VCTIR research projects are at: <http://vtrc.virginia.gov/PUBS.aspx>.

8. Major Transportation Projects⁴¹

The following section provides updates on the major transportation projects across the county in 2015.

a. Status of Dulles Rail Project

The Dulles Corridor Metrorail project (DCMP) has completed the extension between I-66 at the Dulles Connector Road and Wiehle Avenue in Reston. Substantial completion for the Silver Line, Phase 1 was declared in April 2014 and passenger service began in July 2014.

Fairfax County has completed construction on the below-grade 2,300 space commuter parking garage, 10 bus bays, 45 kiss-and-ride spaces and 150 secure bicycle spaces at the Wiehle-Reston East station. The commuter parking garage became operational in conjunction with the start of Silver Line passenger service in July 2014. The commuter parking garage is owned and maintained by Fairfax County. Comstock Partners continues construction of the mixed-use development that will include approximately 1.3 million square feet of office, retail and residential uses; 19.5 percent of the residential units will be affordable dwelling units.

On February 23, 2010, the Board of Supervisors approved a Special Exception Amendment (SEA) for expansion of the West Falls Church Services and Inspection Yard to accommodate rail car storage and maintenance for Phase 1 of the DCMP extension to Wiehle Avenue. The SEA expanded the yard capacity by 42 rail cars and added more maintenance bays in a new annex building. As part of the approval, MWAA and WMATA constructed a new storm water management detention pond and rehabilitated the existing stream traversing the property. In addition, a \$10 to \$12 million sound cover box has been completed over the eastern most curved track in the yard to reduce “wheel squeal” that occurs as rail cars are moved within the yard. A Silver Line, Phase 1 bus service coordination plan was developed and coordinated by staff from the various service providers impacted by the DCMP: Fairfax Connector; Metrobus; Potomac and Rappahannock Transportation Commission; Loudoun County Transit; and MWAA – Washington Flyer. Staff has coordinated bus routes, bus bay assignments and other operational elements related to bus service to and from Phase 1 stations.

⁴¹ Provided 2014 by Kris Morley-Nikfar, Fairfax County Department of Transportation

After significant public outreach, FCDOT finalized the bus service plan to support the opening of Phase I of the Silver Line, which was approved by the board in June 2013. The service changes took place concurrently with the opening of the Silver Line on July 26, 2014. A substantial part of the plan was the implementation of a short-term circulator bus system within Tysons, called the Tysons Circulator (routes 422, 423 and 424), which provides a frequent bus connection from the new Silver Line stations in Tysons to the employment centers. These circulator routes connect to the new stations in Tysons, as well as to the feeder bus service from McLean, Vienna and the Route 7 corridor. Another major component of the Silver Line bus service plan was the redesign, modification and addition of new routes in the Dulles Corridor, feeding the Wiehle-Reston East Metrorail station. In total, approximately 40 percent of all Fairfax Connector bus service has changed in FY 2014.

b. Status of Dulles Rail Project Phase 2

The Metropolitan Washington Airports Authority is building the Dulles Corridor Metrorail Extension from Wiehle-Reston East station west to Dulles International Airport and Loudoun County. Fairfax County, Loudoun County and MWAA have committed to participate in Phase 2. Phase 2 will be constructed by Capital Rail Constructors, a joint venture between Clark Construction and Kiewit International. The Phase 2 contract was awarded in May 2013 with Notice to Proceed in July 2013. Design efforts are currently being completed for the three new stations in the county. Enabling construction work was initiated spring 2015 at Innovation Center station. Silver Line, Phase 2 substantial completion is expected in summer 2019 with passenger service to follow.

Design is also under way for the future park-and-ride garages at Innovation Center station and Herndon station that are to be constructed by the county. The park-and-ride garage at Innovation Center station is part of a joint development project and was approved in July 2014 as part of rezoning application. The Herndon station garage was the subject of a public facility review application (pursuant to Section 15.2-2232 of the Code of Virginia) that was approved in June 2014. FCDOT staff continues to coordinate with MWAA and other county agencies on the planning and construction of these garages. The garage completion is expected in spring 2019.

c. I-95 Express Lanes

The Virginia Department of Transportation partnered with Fluor-Transurban to develop a new I-95 Express Lanes project that runs from Garrisonville Road in Stafford County to Edsall Road in Fairfax County.

This new project, which opened to the public in December of 2014, created approximately 29 miles of Express Lanes on I-95. This project added capacity to the existing HOV lanes from the Prince William Parkway to the vicinity of Edsall Road and improved the existing two HOV lanes for six miles from Route 234 to the Prince William Parkway. A nine-mile reversible two-lane extension of the existing HOV

lanes from Dumfries to Garrisonville Road in Stafford County helps to alleviate the worst traffic bottleneck in the region.

As a separate project, plans are being advanced to construct a direct ramp from the existing HOV lanes on I-395 to Seminary Road, which will connect the Mark Center site to this expanded regional transit and HOV network. The ramp will be restricted to transit and HOV use only.

The Express Lanes project links the I-95 HOV lanes to new Express Lanes on the Capital Beltway, creating a network spanning more than 40 miles and providing direct HOV and transit service to major Virginia-based employment centers including Tysons Corner, Merrifield, Fort Belvoir and Quantico. The project relieves one of the worst traffic bottlenecks in the region where the HOV lanes ended at Route 234 in Dumfries. Carpools with three or more people, vanpools and transit vehicles have free access to the Express Lanes network. The Express Lanes use dynamic tolling that adjusts tolls based on real-time traffic conditions, video technology to identify accidents, a series of electronic signs to communicate with drivers and state troopers to ensure enforcement. These strategies help maintain travel speeds, make travel times more predictable and reduce violators.

d. Columbia Pike Streetcar Project⁴²

One of the biggest transportation disappointments in the county was a decision by Arlington County in November 2014 to cancel the Columbia Pike Streetcar Project. Fairfax and Arlington counties had been working on this project since 2012 to provide high quality transit options to this 7.4-mile corridor.

Fairfax County remains committed to providing high quality transit for the residents, workers and businesses in the Baileys Crossroads area. It is EQAC's view that this part of the county should have better transit options to align with the revitalization efforts in Seven Corners, Baileys Crossroads and Annandale.

The Coalition for Smarter Growth published an important collection of facts about the project.⁴³

- With approximately 17,000 riders a day, right now, the Columbia Pike corridor is the busiest bus corridor in Virginia.
- The streetcar is projected to bring between \$3.2 and \$4.4 billion in real estate investment to the Columbia Pike corridor.
- Studies show that bus ridership in the Columbia Pike corridor is not growing. Ridership on the Metrobus and ART (Arlington Transit) routes that serve Columbia Pike climbed rapidly for five years after 2003, when Arlington

⁴² Provided 2015 by Fairfax County Department of Transportation

⁴³ http://salsa3.salsalabs.com/o/2041/t/0/blastContent.jsp?email_blast_KEY=1295383

introduced a set of service enhancements, dubbed "PikeRide." However, since then ridership has stayed flat.

- Streetcars hold more people with fewer vehicles, which means moving more people through the corridor per hour. A standard Metrobus can carry 76 riders. An extra-long "articulated" Metrobus can carry 115 riders. A single streetcar can, however, carry 158 riders.
- On a per-mile or per-user basis, the streetcar costs less than other projects. The Beltway HOT lanes, for example, cost \$1.4 billion for 14 miles and an estimated 66,000 users per day. Maryland's Intercounty Connector cost \$2.6 billion for 18 miles and an estimated 30,000 users per day. The streetcar's upper estimated cost is \$261 million -- for Arlington's five mile segment with an estimated 26,000 users per day.

e. Richmond Highway Widening Through Fort Belvoir

Richmond Highway through Fort Belvoir will be widened to six lanes from Telegraph Road to Mount Vernon Memorial Highway (approximately 3.4 miles). The project will include intersection improvements and provisions for bicycles, pedestrians and transit. It will also reserve right of way for future high-quality transit. The Federal Highway Administration completed an Environmental Assessment (EA) to comply with the National Environmental Policy Act. FCDOT prepared preliminary engineering documents in support of the EA. The project is administered by FHA in cooperation with the county, VDOT and U.S. Army Garrison Fort Belvoir. The design-build contract was awarded in April 2013. Target completion of the project is mid-2016.

E. THE INTERRELATIONSHIP BETWEEN LAND USE AND TRANSPORTATION

The above sections presented "Land Use" and "Transportation" as separate environmental issues. The focus of this section is on the interrelationship between land use and transportation. Throughout this chapter, three fundamental challenges are addressed:

- The county is rapidly approaching build-out and is transitioning from a growth focus to redevelopment.
- The county transportation systems are strained by congestion and getting further constrained by sprawl beyond the county.
- The county will continue to grow in population and prosperity, putting more pressures on the environmental quality and quality of life, which are underpinnings of that growth and prosperity.

The concentration of development according to the Concept Map for Future Development necessitates that land use and transportation planning and policies evolve and interrelate together. New places will need to provide residential, commercial and transportation options for more people, under challenging constraints, while increasing environmental stewardship.

These places will enable future growth through denser and mixed-use development, efficient transportation options, such as Metrorail and HOV and lifestyle options such as telecommuting and flex-work.

Throughout the world there are examples of large cities that have managed to continue growing without sacrificing environmental quality. But to do so requires sophisticated planning across many facets of the community. Conversely, when land use and transportation decisions are made in isolation, they will exacerbate the problems of build-out and congestion and negatively impact quality of life.

Growth/redevelopment is a long term process. Planning is the first step, and the county has made great progress improving the tools and processes for decision making and bringing systems into near-real time thought the GIS. The next step considers the laws governing development (i.e., the Zoning Ordinance). The ordinance needs to be updated continually to incorporate new technologies and better practices for building high quality and efficient structures. This includes standardizing practices, such as Transportation Demand Management proffers, and incorporating urban focused zoning regulations, such as maximal parking restrictions in transit station areas. The final step is active encouragement of development where it is most appropriate.

Fairfax County's role in the redevelopment and reinvestment of the older commercial areas specifically supports environmental goals by reusing previously developed land, utilizing and enhancing existing services and utilities and reducing development pressure on the county's remaining greenfields. Redevelopment provides an opportunity to replace or upgrade existing land uses and transportation networks with modern efficient systems that often have less environmental impact. The Comprehensive Plan and the Sustainable Development Policy for Capital Facilities provide guidance for incorporating the U.S. Green Building Council's LEED® standards in the design and construction of buildings and landscapes. These encourage efficient use of energy and water resources to minimize short and long term impacts on the environment and building occupants.

1. Zoning Ordinance Amendment Work Program

In the past, EQAC focused on planning, but zoning is an important factor in the overall development process. Zoning defines the requirements that affect all aspects of a development, including land use and transportation. While the Plan describes what should be developed, the zoning codifies what legally can be built.

One item on the 2015 Priority 1 Zoning Ordinance Amendment Work Plan concerns parking reductions in transit-oriented areas. Parking maximums are a smart growth technique to give developers more flexibility when building space for automobiles. Rather than specifying hard minimums, they can use transportation demand management techniques to reduce the number required. This avoids excess parking and lets them build more valuable amenities that would have been devoted to automobiles. Some of the benefits include reduce energy consumption, improve air quality, reduce the amount of impervious surfaces and encourage the use of mass transit.

This item has been addressed in the Tyson Corner area with the adoption of the new Planned Tysons Corner Urban District on June 22, 2010 and will be addressed in other areas as part of the Planned Development Commercial (PDC) District and Planned Residential Mixed Use (PRM) District Amendment.

2. Encouraging Redevelopment and Revitalization

The Comprehensive Plan recognizes that reinvestment in communities is necessary to maintain their vitality. The Fairfax County Office of Community Revitalization (OCR) facilitates strategic redevelopment and investment opportunities in older commercial activity centers in the county. In general, the county's revitalization plans support compact, pedestrian-oriented, mixed-use centers that reduce the need for automobiles and provide increased access to transit and other modes of transportation such as bicycling and walking. For more information, go to www.fcrcv.org. Much (but not all) of the discussion below regarding revitalization projects has been provided to EQAC directly from OCR.⁴⁴

a. Tysons Urban Center

By 2050, the 2,100 acre Tysons Urban Center will be transformed into a walkable, sustainable, urban center that will be home to up to 100,000 residents and 200,000 jobs. Tysons is envisioned to become a 24-hour urban center where people live, work and play; where people are engaged with their surroundings; and where people want to be. While there are economic costs and benefits associated with the redevelopment of Tysons, there are also non-monetary benefits such as cleaner air, improved water quality, sustained economic vitality and improved quality of life. Achieving the vision for Tysons depends on implementing strategies that will reduce resource use and dependency, decrease detrimental environmental impacts and enhance the environment. Effective land use and transportation policies create the basic foundation for the sustainable Tysons.



The vision for Tysons is based on the concept of transit-oriented development, which is a land use pattern that emphasizes compact, dense, walkable neighborhoods focused around transit stops. National studies have shown that TODs: provide

44 Provided to EQAC 2015 by Elizabeth Hagg, Deputy Director, OCR

increased transit ridership; significantly improve the efficiency and effectiveness of transit service investments; lower annual household rates of driving for those living, working and/or shopping within transit station areas; produce lower rates of air pollution and energy consumption by providing safe and easy pedestrian access to transit; and reduce rates of greenhouse gas emissions. Further, aggressive transportation demand management programs, including parking management, are critical to achieving goals in the reduction of vehicle miles traveled.

The redevelopment of Tysons is being pursued in a manner that should reduce greenhouse gas emissions in accordance with the Cool Counties Climate Stabilization Initiative adopted by the Fairfax County Board of Supervisors. Innovative energy efficiency and conservation strategies are being incorporated into all redevelopment projects. Tysons has a unique opportunity to become a leader in environmental stewardship through protecting and improving the existing man-made and natural environments through enhanced stormwater management, promotion of green buildings and provision of a green network of parks and open spaces, among other things.

Stormwater Management - The Fairfax County Comprehensive Plan calls for the use of Low Impact Development techniques such as rain gardens, vegetated swales, porous pavement and vegetated roofs. It also calls for the retention of the first inch of rainfall on-site and for stormwater management measures equivalent to the current LEED stormwater design credits.

Green Buildings - The Plan calls for all new residential buildings to achieve LEED certification, or an equivalent green building standard. Office and other nonresidential buildings are expected to achieve the higher standard of LEED Silver or equivalent.

Green Network - As new development occurs, a variety of urban parks, plazas, open spaces and recreational facilities will be created. These will be connected by a "greenway" - a network of trails for pedestrians and bicyclists. The park plan includes a central signature park, a large multipurpose park, multiple urban parks, stream valley parks and trails.

Policies, experiences and lessons from Tysons are anticipated to be used as models for other portions of the county.

Since the adoption of the Plan in 2010, 22 rail-related zoning applications, containing a total of approximately 48.5 million square feet (SF), were approved. As of August 2015, almost four million square feet of development were under construction, about half of which are for residential uses and half for office, hotel and/or retail uses.

i. Tysons Partnership

In 2010, OCR worked with stakeholders in Tysons to form the Tysons Partnership. The Tysons Partnership is dedicated to an inclusive and collaborative process to achieve the successful redevelopment of Tysons into a pedestrian-oriented and economically vibrant urban place. The Tysons Partnership is a membership organization representing employers, landlords, developers, retail and residents; it also has non-voting participation from the county, professionals/consultants and neighborhood organizations. The Tysons Partnership is organized into six councils: Marketing and Branding; Transportation; Public Facilities and Community Amenities; Urban Design and Planning; Finance; and Sustainability Initiatives.

ii. Tysons Corner Urban Design Guidelines

In January 2012, the Board of Supervisors endorsed the Tysons Corner Urban Design Guidelines that provide recommendations to transition Tysons from an auto-oriented suburban location into a cohesive, functional, pedestrian-oriented and memorable urban destination. Grounded in the Comprehensive Plan core principles, the guidelines address the pedestrian realm, building and site design and interim conditions to define distinct identities and characteristics for the various neighborhoods. The guidelines have been used successfully by each of the pending and approved applications to inform the siting, building design and master planning of each project.

iii. Tysons Corner Park Plans

To be a great downtown, Tysons needs great parks. The Tysons Corner Comprehensive Plan amendment includes a conceptual park network and urban park service of 1.5 acres per 1,000 residents and one acre per 10,000 employees. The Plan also includes a typology of urban park types (pocket parks, civic plazas, common greens and recreation-focused parks), a recommendation for 20 new athletic fields to be built by 2050 and guidance on restoration and enhancement of existing stream valley parks in Tysons.

As Tysons undergoes transforms from a suburban commercial center to a major regional urban center, the urban park network will distinguish Tysons as a great urban place. To help ensure that happens, the Park Authority, in collaboration with the Department of Planning and Zoning and the Office of Community Revitalization, embarked upon an effort in 2012 to develop a comprehensive park system plan for Tysons. A Tysons Park System Concept Plan was developed with the involvement of an interagency team and advisory group consisting of citizens, design professionals, urban park planners and members of the Tysons Partnership. After an extensive public input process, the Plan was endorsed by the Park Authority Board in October 2014. www.fairfaxcounty.gov/parks/plandev/tysons-park-planning.htm

The Tysons Park System Concept Plan functions as a conceptual guide to bring about future park development by the public, private and nonprofit sectors to serve residents, employees and visitors. The Plan is organized to several key elements, including park placement and typology, connectivity, athletic fields and other recreational facilities, civic spaces and community building features and cultural and natural resource preservation and interpretation.

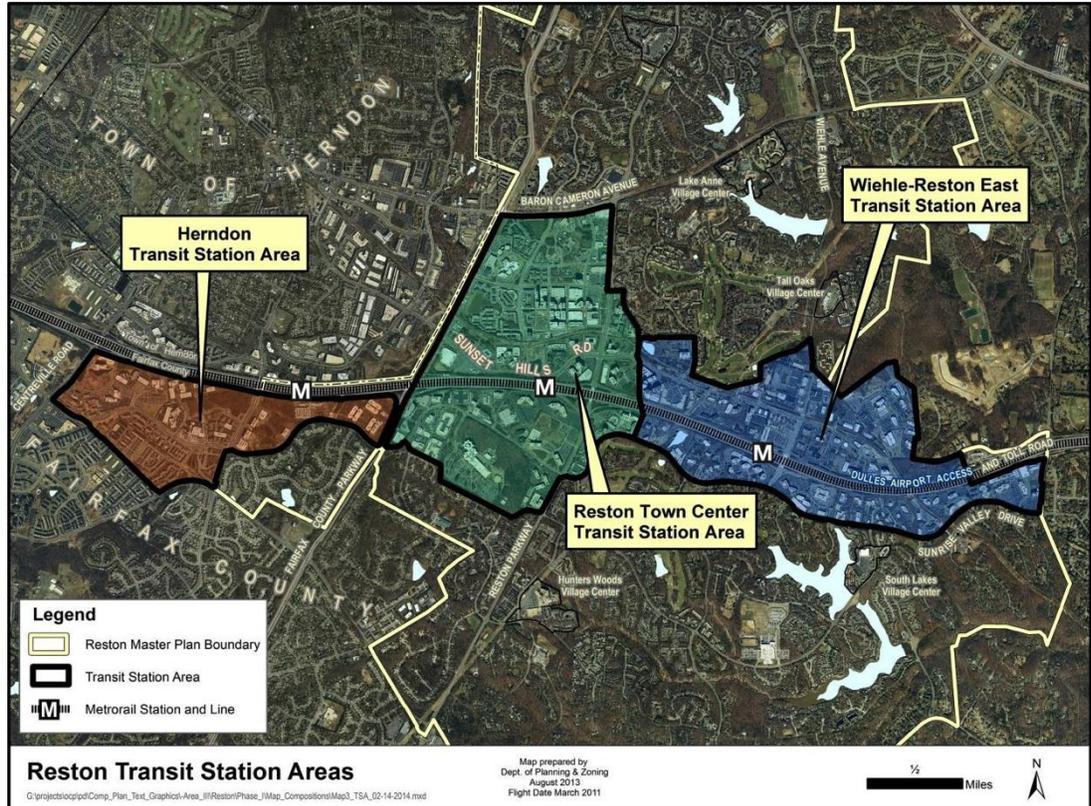
Combined, applications to rezone to the PTC district approved to date provide commitments to create a total of about 40 new acres of publicly-accessible urban park space. Most of the new parks will remain in private ownership and maintenance with public access easements. About 21 acres of new parkland in seven parcels will be dedicated to Fairfax County. With the approved applications, two full size and three smaller rectangular athletic fields (one of which is an interim use on a future school site) will be built and enough funding for two additional full size fields (land plus facilities) as redevelopment occurs. The first two new athletic fields were dedicated in May 2015. The Scotts Run Station South application made a commitment to improve the Scotts Run Stream Valley with trails, bridges, benches, interpretive signs, invasive species removal, stream bank restoration and stabilization and supplemental plantings. The Arbor Row application restored and dedicated a Scotts Run tributary, now known as Arbor Row Stream Valley, that runs between Jones Branch and Westpark Drives.

b. Reston Transit Station Areas

The Comprehensive Plan for the Reston's Transit Station Areas was amended in 2014, to encourage development related to Reston's new Metrorail Silver Line stations. The introduction of heavy rail to the Dulles corridor creates the opportunity for new TODs in each of the station areas. The planning objective for these TOD districts is to create transit-focused neighborhoods within one-half mile of the transit stations that will encourage pedestrian activity to enliven the area throughout the day and evening. The emphasis is on creating places and connections that are safe, comfortable and attractive for pedestrians and bicyclists. The Wiehle Reston East Metro station opened in July of 2014; the Reston Town Center, Herndon and Innovation Center stations are expected to be complete by 2020.

As with the TOD opportunities in Tysons, development opportunities around the Reston stations will increase the number of residential units, improve the walkability of the area and focus on infill development and an enhanced street network. The target development level is 28,000 new and existing residential units and approximately 30 million square feet of office uses (new and existing). The resulting development will further the principles that Reston was founded upon, allowing people to live, work, shop, worship and recreate in the same community. The land use pattern will have positive impacts on both individuals and the environment. The new mixed-use development planned in the TSAs will allow people to access many of their daily needs within walking or biking distance. New connections from the existing trail and bike networks in the established residential neighborhoods will be made, linking residents and employees to the Metro. The expected benefits for

personal health and quality of life include an overall reduction in health care costs and less time spent commuting. In addition, new development will provide more urban park space, improved green spaces and conservation of the existing natural environment through compact development and curbing sprawl.



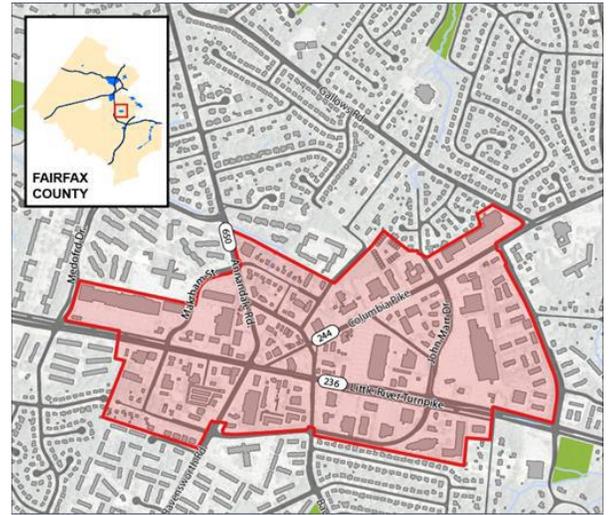
Expected environmental benefits include reduced air pollution as result of reduced vehicle miles traveled and less impervious surfaces resulting in a decrease in stormwater runoff. Green building techniques support a reduction in energy consumption; implementation of innovative energy generation and management techniques is also envisioned. Overall, new more compact development pattern will lessen the demand on the infrastructure through a more efficient use of resources.

i. Reston Area Urban Design Guidelines

OCR is developing Design Guidelines to support the approved Comprehensive Plan. The guidelines will build upon the plan recommendations and Fairfax County policies on Transit-Oriented Development and environmental sustainability. Once completed, the Urban Design Guidelines will be used to evaluate development applications and site plans to encourage walkable, mixed use development that implements sustainable design practices.

c. Annandale Commercial Revitalization District (CRD)

The 195 acre CRD is centered around the intersection of Columbia Pike and Route 236, and contains a wide variety of community serving office, retail and business uses bounded by stable residential neighborhoods. In 2010, the board adopted an amendment to the Plan that incorporated a form-based planning approach to provide development flexibility by using building types, building heights and urban design guidance instead of Floor Area Ratio to guide and shape development.



In December 2014, the board approved the rezoning of a 3.5 acre site located near the intersection of Markham Street and Little River Turnpike. The Markham Place project is the first development approved under the new Plan and will consist of a 12-story, 310 unit residential building, 6,000 SF of nonresidential space, and 25 percent open space.

The Markham Place project will transform a single-use, surfaced parked 1960s era bowling alley into a vibrant, pedestrian-oriented mixed-use development.



i. Columbia Pike Streetscape Project

A streetscape project comprised of 800 linear feet of brick paver sidewalk, street trees, curb and gutter, storm drainage items, benches, trash cans and acorn style streetlights was completed along the north side of Columbia Pike from Maple Place to Annandale Center Drive in summer 2014.

d. Baileys Crossroads/Seven Corners CRD

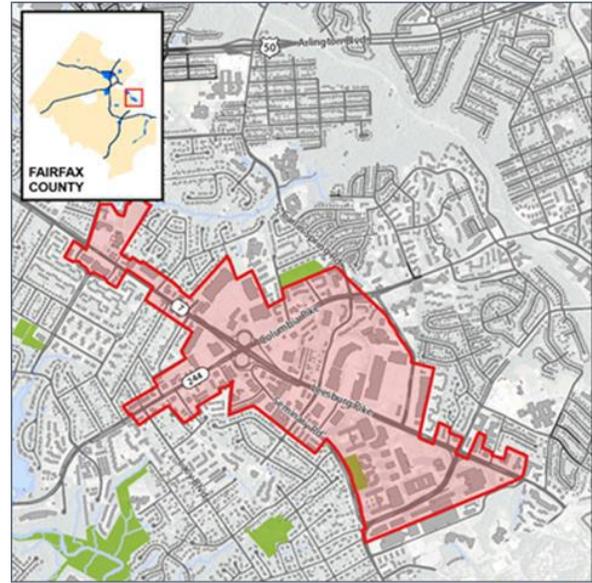
The Baileys Crossroads/Seven Corners CRD is on the eastern edge of Fairfax County adjacent to Arlington County; this Commercial Revitalization District includes two Community Business Centers – Baileys Crossroads and Seven Corners.

i. Baileys Crossroads

The Baileys Crossroads CBC encompasses approximately 530 acres of land surrounding the interchange of Leesburg Pike and Columbia Pike.

In 2010, the Board of Supervisors approved the Baileys CBC Plan Amendment. This Plan Amendment encourages a transition from a predominately retail environment to one that balances retail, office, residential, civic uses and open space. It includes a

“Town Center” and transportation improvements to balance land use with infrastructure and provide intermodal connectivity.



Baileys Crossroads

A key element of the original plan was the Columbia Pike streetcar project. That was unilaterally cancelled by Arlington County in 2014, leaving the Fairfax County community without direct linkage to the Pentagon and Metrorail. Other elements of the long term vision remain in place to position the area for redevelopment.

Proposals under review include redeveloping an underutilized industrial/outdated office site on Columbia Pike with mid-rise residential and public uses, and developing a vacant site on Leesburg Pike with a pharmacy/retail-strip center that places the parking to the rear and provides a public plaza and improved pedestrian connections.

ii. Seven Corners

An extensive two-plus year planning process for the Seven Corners Community Business Center concluded with the board’s adoption of the Plan amendment (2013-I-B2) on July 28, 2015. The planning process entailed two citizen committees – the Seven Corners Land Use and Transportation Task Force and the Opportunity Area C Special Working Group. The combined recommendations of these two groups were incorporated into a final draft Plan for the area.

The Plan is expected to bring about environmental benefits to the CBC. Currently, the area is completely built-out with extensive amounts of impervious surface. The CBC generally lacks modern stormwater management systems and buildings that meet green building standards. Through redevelopment in accordance with the Plan, there is an opportunity to achieve environmental goals in much of the CBC, such as reducing runoff that improves nearby water quality, reducing energy consumption due to a decreased reliance on automobiles and replacing older buildings with newer, more energy-efficient buildings.



e. Lake Anne Village Center Commercial Revitalization Area (CRA)

Built in 1965, the 45 acre Lake Anne Village Center (LAVC) was the first area to be developed in the planned community of Reston and in 2011 was designated as a Fairfax County Historic Overlay District. In 2006, the 16.5 acre Crescent Apartments property, located within the LAVC, was purchased by the Board of Supervisors to preserve affordable housing and encourage the revitalization of the aging LAVC.

In March 2009, the board adopted an amendment to the Plan to guide the revitalization of the LAVC. The Plan text includes urban design guidelines and guidance on the transportation network, provision of affordable housing, green buildings and infrastructure that is supportive of the unique character of the historically significant Washington Plaza.



In February 2012, the county released a Request for Proposal for the redevelopment of the Crescent property, and encouraged respondents to consolidate and assemble additional properties within the LAVC as part of an innovative and imaginative mixed-use development. Following an extensive evaluation process, in 2013, the board entered into a public/private partnership with the Lake Anne Development Partners, LLC.

i. Lake Anne/Crescent Apartments Property Redevelopment

In 2015, the board approved a rezoning application to redevelop the 17 acre county owned Crescent Apartments property and additional properties within the LAVC as part of an integrated development plan. A comprehensive agreement addressing the financial and transactional aspects of the project was also approved.

The 24.3 acre development will realign Village Road to improve circulation and create a visual connection to Lake Anne and deliver 1.17 million SF in new housing, retail and office space, including up to 1,037 residential units and 136,173

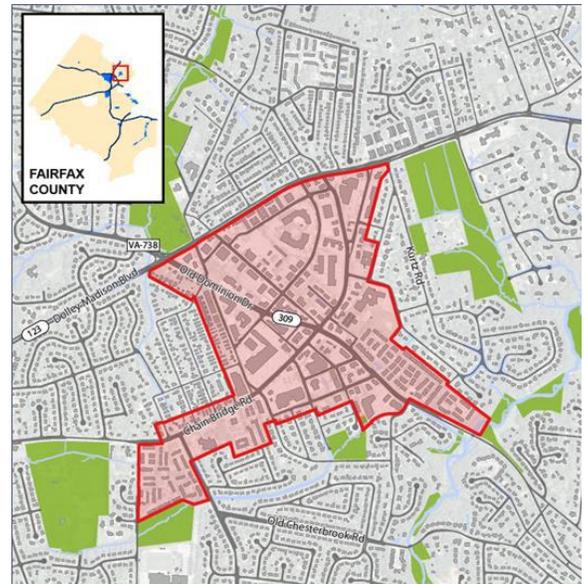


SF of office and retail space in buildings that range in height from three to 18-stories. The development includes 185 affordable units to replace the existing 181 affordable Crescent Apartments. Additionally, 20 percent of all non-replacement units will be affordable. The development will provide public parks, plazas and pedestrian connections to link the development with the Washington Plaza and the existing Reston trail system; underground and garage parking; an amphitheater; bike share stations; and an improved main plaza for hosting a farmers market and other events. This redevelopment project is expected to interject needed vitality into the village center and enhance the LAVC as a place to live, work and play.

f. **McLean CRD**

The Plan for the 230 acre McLean CRD envisions the creation of community focal points that will provide a pedestrian-oriented Main Street in a South Village, and aesthetically integrated commercial uses in a North Village.

In 2013, the board adopted editorial edits to the Plan to clarify guidance for the McLean CBC. In 2014, the board approved an amendment to the Plan that re-designated the properties located northeast of Elm Street and southwest of Fleetwood Road from an



Area of Minimum Change to a Redevelopment Area. The amended Plan provides for mixed-use development of up to 400,000 SF, with stipulations related to

consolidation, building and site design, circulation, parking and stormwater management. A rezoning application (the Elm Street Residences) was approved in July 2014 pursuant to that Plan guidance.

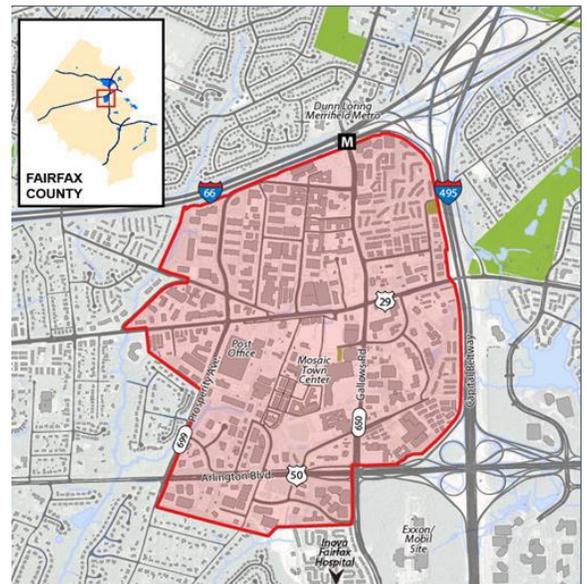
The Elm Street Residences project will transform a single-use, surface-parked office site into a pedestrian oriented, mixed-use development with neighborhood-serving retail uses, and open space. The development includes a seven-story, 263,806 SF multi-family residential building with street level retail and 7,010 SF of new ground-floor retail space in an existing eight-story office building.

Various infrastructure improvements are planned or under way in McLean, including utility underground, streetscape and pedestrian improvements, landscaping, gateway signage, signal and mast arm replacements and public art projects.

g. Merrifield CRA

In 2001, the Board of Supervisors adopted an amendment to the Plan that created the Merrifield Suburban Center. The vision for the Merrifield Suburban Center includes two core areas: one focuses on development near the transit station and the second on a town center south of Route 29. A new “Main Street” will connect the two core areas.

Over the past decade Merrifield has been transforming into a thriving mixed-use area attracting new residents, while also supporting the surrounding existing neighborhoods. Recent mixed-use developments have brought additional residential, retail and office space and have included amenities such as improved pedestrian connections and open space. Projects in Merrifield include Halstead II, Avenir Place and Square 1400. Construction of the first phase of the Mosaic project, which is in the Town Center, was completed in fall 2013 with the opening of an urban-model Target, movie theatre, hotel, variety of retail, new park and townhomes. The remainder of the project is currently under construction and includes apartments, a new phase of townhomes and additional retail.



h. Richmond Highway Corridor CRD

The Richmond Highway corridor extends 7.5 miles from the Capital Beltway to Fort Belvoir. The CRD, which encompasses 700 acres, is not continuous, but rather consists of six distinct CBCs: North Gateway; Penn Daw; Beacon/Groveton; Hybla Valley/Gum Springs; South County Center; and Woodlawn. The CBCs are envisioned to serve as focal points or nodes for residential and mixed-use development.

Huntington Avenue from Telegraph Road to Richmond Highway and the Huntington Transit Station Area are also areas of interest to revitalization. The Huntington TSA is envisioned to include transit-focused housing and employment to take advantage of its location surrounding the Huntington Metro station.

Recent residential development activity, resulting from a strong multi-family residential market and proximity to the Huntington Metro station, has been concentrated in the northern end of the Richmond Highway corridor and the Huntington TSA. Projects include the completed Beacon at Groveton and the Shelby at Penn Daw, as well as the Parker at Huntington, which is under construction. Further south, the Accotink Village development will be providing a solar panel on the rooftop to promote sustainability. All of these projects are pedestrian-oriented, with improved streetscapes, pedestrian amenities and stormwater management; some took advantage of a parking reduction to promote the use of transit.

In May 2015, the Board of Supervisors endorsed the BRT (Bus Rapid Transit)/Metrorail Hybrid transit alternative for Richmond Highway (Route 1), authorized a Comprehensive Plan Amendment to consider the recommendations of the Route 1 Multimodal Alternative Analysis (includes roadway, transit and bicycle/pedestrian improvements) and directed staff to proceed with an Environmental Assessment for the project. This multi-phasic effort is anticipated to take approximately four years to complete.



i. Transportation Projects

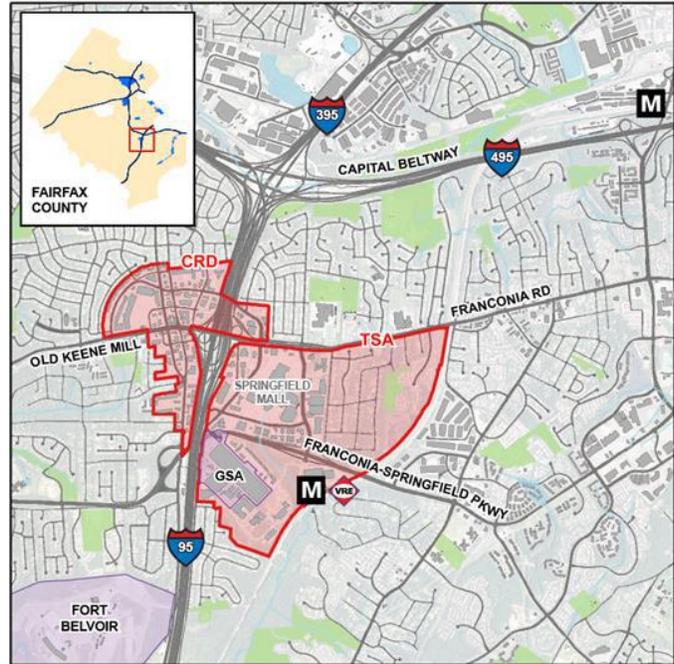
A number of significant transportation related activities are under way, including the following:

- *Richmond Highway Widening* – In 2011, the U.S. Department of Defense awarded \$180 million to VDOT and Fairfax County for the design and construction of a project to widen the segment of Richmond Highway from Telegraph Road to Mount Vernon Highway from four to six lanes. The approximately 3.4-mile widening will include the provision of a shared-use trail along the northern edge and a pedestrian sidewalk along the southern edge, and will accommodate on-road bicycles. Construction of the project is projected to be completed by June 2016.
- Additionally, as part of its adopted six-year transportation plan, the Board of Supervisors approved \$68 million for the widening of Richmond Highway from four to six lanes from Mount Vernon Memorial Highway to Napper Road. This project would include pedestrian and bicycle facilities and provisions for future transit.
- *Transit Center Study* – The Fairfax County Department of Transportation has identified possible sites on Richmond Highway for a transit center that would accommodate bus transfers in a convenient one-stop location.
- *Mulligan Road/Jeff Todd Way Project* – The project includes the construction of a new four-lane divided roadway from Telegraph Road to a realigned intersection with Mount Vernon Memorial Highway (Route 235) at Richmond Highway. This road provides a major east-west connection at the southern end of the Richmond Highway corridor for vehicles, pedestrians and bicyclists. Both sides of this road will have five-foot sidewalks. The road opened to traffic in August 2014.
- *VDRPT Multimodal Alternatives Transportation Analysis* - The Virginia Department of Rail and Public Transportation is conducting a multimodal study of Richmond Highway to identify the transit mode for the corridor while also addressing vehicular and pedestrian needs. Transit options being considered for further analysis are express bus, bus rapid transit, light rail (streetcar) and a combination of a Metro extension to Hybla Valley with BRT to the south. The study, which began in summer 2013, is being conducted with extensive community involvement.
- *Richmond Highway Public Transportation Initiative* - The Richmond Highway Public Transportation Initiative is a multi-year project that started in 2004 and is part of Fairfax County's Four-Year Transportation Plan. The goal is to upgrade transit and pedestrian facilities along Richmond Highway, and the initiative includes: improving bus service and pedestrian facilities; improving bus stop amenities and intersections to facilitate a safer and more inviting travel experience; developing or building bus transit centers; and using technology to make transit quicker and more utilized. Infrastructure improvements associated with the project include: pedestrian improvements at 29 intersections such as cross-walks, pedestrian signals and pedestrian

access improvements; completion of missing sections of sidewalks or trails at 24 locations; and various bus stop improvements.

i. Springfield CRD

A new vision for Springfield is contained in the Springfield Connectivity Plan, which was approved by the Board in 2010. The Plan includes land use intensities within the CRD designed to spur redevelopment, new transportation infrastructure improvements and detailed guidance with respect to urban design, streetscape and placemaking. The transformation of the central business area into a walkable village town center convenient to well-located and maintained



neighborhoods is under way. A number of older and/or vacant retail structures have been redeveloped with new uses or updated structures, such as a Homewood Suites and a new commuter parking facility. A number of pedestrian improvements are being made to increase the safety and functionality of roadways in the CRD, including the removal and replacement of street trees, correcting safety concerns at two intersections, improving trail connections for bicyclists and replacing non-compliant bus shelters.

A complete street study is under way to further refine the street cross-sections contained in the Connectivity Study to take into account existing right-of-way while accommodating all appropriate modes of travel on Springfield’s roadways.

i. Springfield Town Center

Redevelopment plans to transform the Springfield Mall into a mixed-use town center were approved by the board in 2009. The first phase of the new 2.1 million square foot Springfield Town Center opened in October 2014 and includes: renovation of the interior retail spaces; significant structural changes to the exterior façade facing Loisdale Road; repair and improvement of existing surface and structured parking; and improvements along Frontier Drive to improve pedestrian, bicycle and vehicular movement between the mall and the Franconia-Springfield Metro station.

The projected 20-year build-out of the approximately 80 acre site includes the addition of over 2,000 residential units, office, retail and hotel uses throughout the site. The vision for the Springfield Town Center is for a walkable community where people can live, work, shop and enjoy entertainment and community activities.

3. Metropolitan Washington Council of Governments

In 2011, the Metropolitan Washington Council of Governments' Board of Directors established the Region Forward Coalition to replace the Metropolitan Development Policy Committee. The coalition is charged with the implementation of the goals, targets and indicators of the Region Forward report. That report sets forth regional goals, a compact agreement and targets and indicators to measure success related to accessibility, sustainability, prosperity and livability. The coalition is comprised of: elected officials from each of COG's member local governments; senior local government staff members; and representatives of business, civic, advocacy and philanthropic organizations.

The National Capital Region's Planning Directors and the COG Board of Directors worked to complete a regional initiative: "Place + Opportunity: Strategies for Creating Great Communities and a Stronger Region." The report presented a regional framework to understand common challenges and opportunities among Activity Centers in our region. Examining a cross section of the region's 141 Activity Centers (26 of which are located in Fairfax County), the Place + Opportunity Project Team conducted detailed analysis of each Center's market, urban form, and socioeconomic characteristics to identify six common Activity Center "place types" and four "opportunity types." For each place and opportunity type, the report provides a set of development goals, strategies and tools to support implementation of key priorities, complement local planning and development efforts and help communities meet their aspiration for their activity centers.

The Place + Opportunity: Strategies for Creating Great Communities and a Stronger Region report is available at www.regionforward.org/wp-content/uploads/Place+-Opportunity-updated_2-14-14_web.pdf.

During fall 2014, the Planning Directors and COG's Cooperative Forecasting Subcommittee also completed the draft Round 8.4 Cooperative Forecasts of employment, population and household growth to 2040. The Round 8.4 Forecasts will be used by the National Capital Region Transportation Planning Board in the Air Quality Conformity Analysis of the 2015 Update to the Financially Constrained Long-Range Transportation Plan and FY 2015-2020 Transportation Improvement Program.⁴⁵

⁴⁵ E-mail from Amanda Campbell, Metropolitan Washington Council of Governments, to Noel Kaplan, July 8, 2015.

4. Future Mega Projects

Over the past 10 years, the county has directed significant resources towards mega projects and revitalization. The rapid growth and investment in Tysons would not have been possible without the Metrorail expansion. Similarly, the successful Merrifield revitalization was anchored by the nearby Metrorail station. As the county looks forward for the next 25 years, the next mega projects that include expansion of Metro should be starting in earnest now.

One project already in place is the Route 7 Corridor Transit Study/Envision Route 7.⁴⁶ This is in-depth assessment of the travel needs in the corridor that includes the development of potential recommendations to improve mobility and accessibility to and within the Route 7 corridor between Tysons and the City of Alexandria. It is being conducted by the Northern Virginia Transportation Commission and is funded by the Northern Virginia Transportation Authority. The primary objective of this study will be to assess the project for viability and, if desired, prepare for entrance into the Federal Transit Administration's Project Development process. The public is welcome to participate through crowdsourcing on the study map at: www.envisionroute7.com/crowdsource/map. Many of the comments reflect both transportation and development concerns, how to live and work together in a busy corridor.

EQAC encourages the work on both Columbia Pike and Route 7. As the Metrorail expansion continues to Dulles, these projects can be anchors for the next round of transit expansion around the Beltway. The spoke from the Pentagon through Arlington to Baileys Crossroads then to Annandale was dealt a blow by Arlington County's decision to withdraw from the Columbia Pike streetcar project. Refocusing on the county needs to connect Tysons and Dulles to Springfield through Annandale would link the county together. Now is the time to prioritize these long-term projects.

5. Summary

Ensuring that the activity centers are vital and that they attract investment and growth is critical to the success of Fairfax County's growth strategy. This is reflective of concern for sustainability and efficiencies in the provision of infrastructure and facilities and consistent with the Metropolitan Washington Council of Governments' Region Forward 2050 plan.

Fairfax County is expected to increase both population and jobs by more than 200,000 over next 20 years, and new infill development and redevelopment will be much more complicated to effectuate than the initial development within the county. There will be changes imposed on existing residents and businesses and impacts that are both real and

⁴⁶ www.envisionroute7.com/

perceived. By continuing to integrate land use, transportation and sustainable planning, the county can change and grow without sacrificing our quality of life.

F. ACCOMPLISHMENTS

While there is still much to be done, EQAC is pleased to recognize that several recommendations have been completed and significant long term projects are coming to fruition.

1. Silver Line Service to Dulles

Last year saw the Silver Line begin service to Reston. This year, work continues on extending the line to Dulles Airport. This is one of the last mega-projects to revamp our aging infrastructure and extend core services.

2. State of the Plan and the Evolution of Fairfax

EQAC has long advocated for an update to the *State of The Plan, An Evaluation of Comprehensive Plan Activities between 1990-1995 with an Assessment of Impacts through 2010* (published in 1996). The update was published in 2012. Notable is the process by which data were gathered for the report, using applications that leveraged IPLS and GIS. This report summarizes the changes to Plan potential that enables the county to continue growing beyond build-out.

In 2012, the Chairman of the Board of Supervisors, the Fairfax Federation and the Chamber of Commerce hosted a fascinating lecture series on the Evolution of Fairfax: changes to the county in the past, present and the future. The series is available for replay at: www.fairfaxcounty.gov/chairman/evolution.htm.

In 2013, the same hosts followed with an Evolution of Transportation evening. Together, the events provide a valuable archive and prediction of the future for land use and transportation in Fairfax County. The evening is available for replay at: www.fairfaxcounty.gov/chairman/evolution-of-transportation.htm

3. Update to the Comprehensive Plan Map

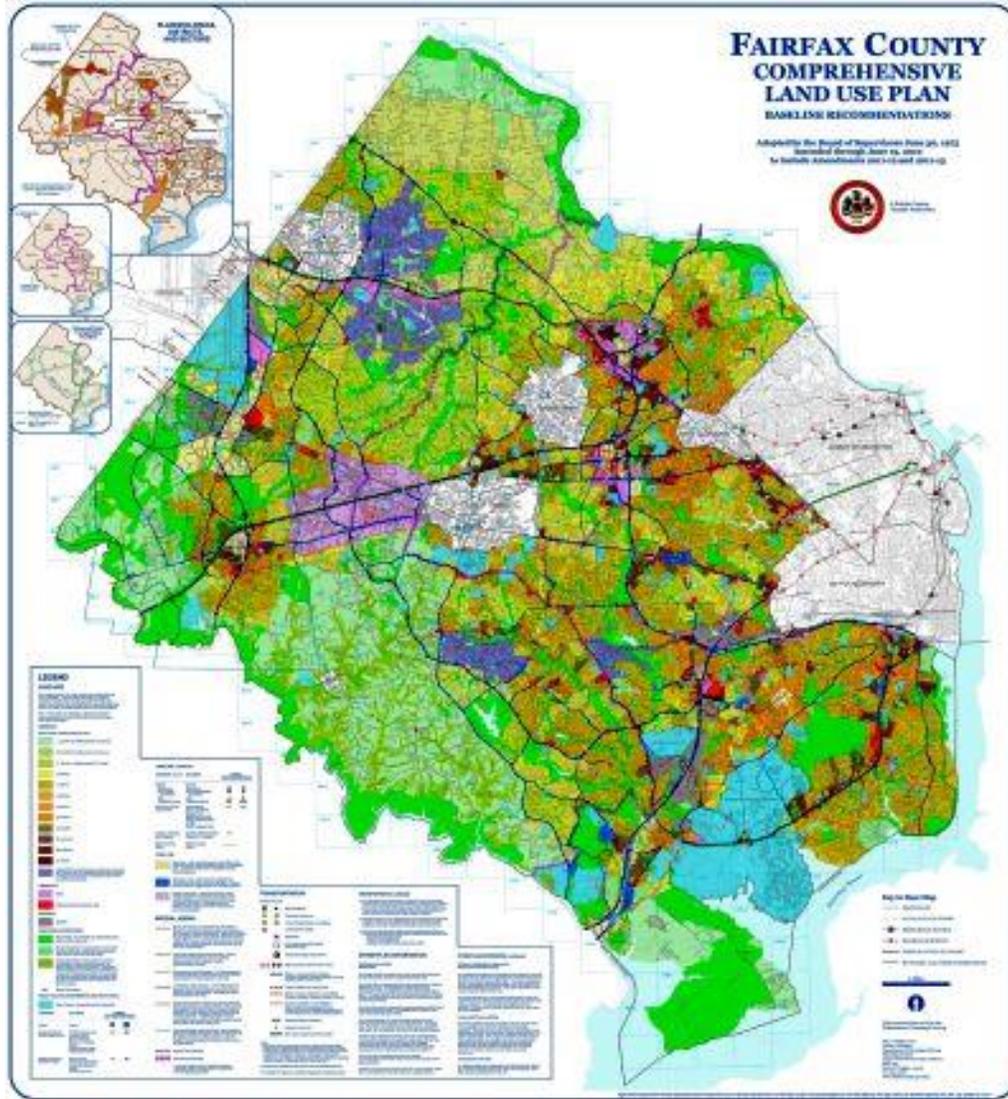
The Comprehensive Plan map was updated by the Board of Supervisors on June 19, 2012 and is available on the Internet at: www.fairfaxcounty.gov/dpz/comprehensiveplan/compplanmap.htm.

A copy of this map is shown as Figure II-9.

Previously, EQAC recommended that changes to the Comprehensive Plan be quickly incorporated on the Plan map. This update and the timely publication of approved

amendments make it easier and faster to find the latest information about the Comprehensive Plan. The Plan map is now an electronic document, and it will be updated on-line as amendments to the Plan are adopted.

Figure II-9. Comprehensive Plan Map



4. Green Buildings

The county is becoming a leader in building green buildings and has adopted Comprehensive Plan policy that includes broad support for green building practices and establishes linkages between the incorporation of green building/energy conservation practices and the attainment of certain Comprehensive Plan options, planned uses and densities/intensities of development, particularly in the county's growth centers.

EQAC commends the county for its commitment to green buildings and the Sustainable Development Policy for Capital Projects that requires building to achieve LEED certification. As of July 2015, the county had a total of 36 green building projects, 17 of which attained certification (15 under the LEED program and two under the Green Globes program). The other 19 projects, all of which have a goal of LEED Silver, are in design or are under construction. In addition, the county managed the LEED Gold Virginia Department of Transportation Administration Building. We are also encouraged to see eight complete projects exceeding the sustainability goal—these were awarded LEED Gold certification. We hope that the county will further its leadership with some projects striving for Platinum certification.

G. COMMENTS AND ONGOING CONCERNS

1. Progress on Mega Projects

The county has seen the successful completion of several mega projects such as the I-495 Express Lanes and Beltway widening and the Dulles Corridor Rail Project. These projects fundamentally changed and improved the transportation flow in the region. EQAC has made recommendations in the past expressing concern about the complexity and interaction of these efforts and the impact on localities. To date, they have kept on schedule and delivered the promised service improvements. We remain concerned that all mitigations promised for these projects be completed to restore the environment to pre-construction conditions and replace the canopy that was removed during construction.

We also advocate that a dialogue begin on the next mega projects which should include:

1. Continued expansion of Metro in the county through additional stops and expanding capacity on the existing lines. With the cancellation of the Columbia Pike Streetcar, that corridor needs renewed focus to build the backbone for the next 20 years.
2. Focus on improving multi-modal options within and between urban centers, especially along the Richmond Highway corridor.
3. Continue working to improve transit utilization through a systematic plan that includes multiple options within a community. This can be combined with pedestrian improvements, more connector bus options and biking trails that together provide a diverse transportation plan.

2. Affordable Housing

EQAC commends the Board of Supervisors for adopting “The Housing Blueprint: A Housing Strategy for FY 2011 and Beyond.” There are many land use and transportation efforts under way with significant relevance to the county’s housing goals. EQAC suggests that the county:

1. Continue to expand options for affordable housing by investing and partnering appropriately in locations that will need increased affordable options as the economy rebounds.
2. Identify vacant offices and homes in locales with good transit options and coordinate with the real estate industry to aid in marketing those properties, thereby supporting new tenants with quality of life perquisites, improved commuting options and better residential/commercial or mixed use utilization.
3. Coordinate with agencies and businesses to inform prospective/new workers of opportunities for desirable commutes and local housing amenities.

3. Comprehensive Planning

EQAC fully supports changes that have been made to the Comprehensive Plan update process and the retrospective analysis of changes that have been realized by the Plan over the past 37 years. The 2012 review of the Plan “*State of the Plan, An Evaluation of Comprehensive Plan Activities between 2000-2010*” (published in 2012) should continue to be updated every 10 years.

EQAC also endorses efforts to focus on revitalization through the Office of Community Revitalization (established in 2007) and the Fairfax Forward process that succeeds the Area Plans Review (APR) process as a new, holistic and integrated approach to plan future development. These changes address the complexities of build-out and redevelopment and bring together the best information and tools to make wiser and more effective decisions.

We are encouraged to see Fairfax Forward as the long term process to update the Comprehensive Plan and completely replace the APR process. We also commend the Fairfax Forward team for providing a wealth of information to the public on the county Web page.

H. RECOMMENDATIONS

1. Continue to Innovate with Social Media

EQAC commends the county for embracing new technology and leveraging the Web to share and interact with public. We recommend that the county continue to integrate social media into the planning process and other outreach efforts. This allows community participation through the Internet technologies and is more cost effective and far reaching than traditional media and outreach. Social media is very powerful for encouraging and educating people about alternative transportation options. The Envision 7 crowd sourcing map is one innovative example that can be replicated:

www.envisionroute7.com/crowdsource/map.

2. Urban Design Guidelines

Urban guidelines are designed to improve the environment, quality of life, balance and safety of a well-planned mixed-use place. These new guidelines are driving the potential in Tysons Corner and can apply equally well to all transit areas, as well as suburban centers and community business centers. EQAC recommends that the county develop one countywide set of urban design guidelines that would have sufficient breadth to address variations in circumstances among mixed-use centers within the county, as opposed to the development of multiple area-specific urban design guidelines. These urban design guidelines should be the baseline expectation for development in mixed-use centers, with exceptions as necessary to accommodate site-specific considerations.

3. Data and Modeling

EQAC is an advocate of the county GIS and the Integrated Parcel Lifecycle System. These applications have proven their value in understanding the county and providing quantitative information to a variety of users.

- a. EQAC recommends that nonresidential development data be comprehensively integrated into the county's Integrated Parcel Lifecycle System and used for forecasting, as demonstrated by residential data that have been harnessed in IPLS for that purpose. Currently, nonresidential data on proposed development projects are captured in disparate systems for zoning and site plan applications, but have not been fully brought into IPLS, and, therefore, cannot be used for forecasting.
- b. EQAC continues to recommend that the Comprehensive Plan be reflected and modeled in the GIS. Applications such as the internal Comprehensive Plan Potential and the Comprehensive Plan Amendment applications (used to gather data for the State of the Plan report) are very useful for understanding the real time status of the Comprehensive Plan. These applications should be available to the public on the Comprehensive Plan website.
- c. EQAC recommends that the county acquire new data sources and incorporate them into the business process. Planimetric data have proven to be both cost effective and transformative. Multi-spectral imagery has the potential to enhance our knowledge of the county by answering questions such as tree species identification and tree canopy density.

4. Transportation

EQAC recommends that the county provide priority for non-motorized/multi-modal transportation options. EQAC supports the goals of Fairfax Advocates for Better Bicycling which include:

- Implementation of the bicycle master plan, which is now complete and ready for implementation.

- Growing the bike share community in Fairfax County.
- Encouraging the Safe Routes to School project with Fairfax County Public Schools.
- Implementation of an outreach and education program for encouraging/promoting bicycling as a transportation mode. This could be called “Bike Fairfax!”

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OTHERS

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