
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. According to the Fairfax County Comprehensive Plan, “If current trends continue, the supply of land presently planned for residential development will be all but exhausted shortly after the turn of the century [2000].”¹ As the county approaches this “buildout,” 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 added and 8,227 single family homes added to the Plan. This clearly demonstrates the increased intensity planned for the county.

In May 2012, the county issued a new report entitled *State of the Plan—An Evaluation of Comprehensive Plan Activities Between 2000-2010*². This report describes changes that have been happening in our approach to planning as the county transitions over time. Excerpts are included in this chapter, but the full report provides details beyond the summaries referenced herein.

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 growth³, 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 second most congested in the country. In 1982, the average metropolitan resident spent 16 hours in congestion; by 2007 that ballooned to 62 hours wasted in congestion. That can be translated into \$2.8 billion, 133 million hours and 90 million gallons of gas in lost productivity and wasted fuel.⁴

During 2012, much progress was made on transportation mega-projects, including the Dulles Rail, I-495 Express Lanes and I-95 high-occupancy toll lane expansion,

¹ Fairfax County Comprehensive Plan, 2007 Edition, Land Use Chapter

² http://www.fairfaxcounty.gov/dpz/projects/state_of_the_plan.pdf

³ “Where We are Growing”, Southern Environmental Law Center, 2002

⁴ Texas Transportation Initiative, 2009 Urban Mobility Report

also known as the HOT 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 thinking⁵ that combines land use and transportation into a new planning paradigm for the county. Tysons Corner will soon have 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, which will open in late 2012, and the future I-95 HOT 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 HOT lanes. There is a potential to get environmental benefits by providing transit options using the HOT 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 down 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.⁶ Public transit is clearly an important part of the future.

The buildout of the county's land use plan 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 much needed data to plan for the future and incorporate future population and trends. It clearly points out 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 affect quality of life, health and natural experiences. The Comprehensive Plan specifically provides strategies and practices that can address land use and transportation together. Mixed-use development is an important tool to combine residential and commercial

⁵ Doug Carter citing Rick Smyre's term at the Evolution of Fairfax Lecture, June 27, 2012.

⁶ Washington Metropolitan Area Transit Authority, http://www.wmata.com/community_outreach/kids_zone/

development to “enhance the sense of community” and to “increase transportation efficiency.” It provides an opportunity for residents to live and work in the 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 becoming more 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.

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 10 years, the county has made great strides in integrating land use and transportation planning and decision making, as evidenced by many of the programs and projects detailed in this chapter. The challenge will always remain, however, in part because the county and individual landowners have primary authority for land use while the state has primary authority for transportation. The issues stemming from state control over practically all of the roads in the county will remain a major stumbling block. The challenge will also remain as an effect from the necessity of breaking down complex issues in order to manage them, to the point of establishing organizational structures based on the pieces, but not having the resources or authorities to put them back together in a comprehensive manner. The I-95 Express Lanes introduce yet another wrinkle, with a private corporation building a significant for-profit component to our infrastructure.

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.

This chapter provides:

- Background on current trends and concepts.
- An overview of planning technology.
- A discussion of county land use characteristics and planning tools.
- An overview of major transportation programs.
- A section that demonstrates the county's integration of land use and transportation through ongoing projects and programs.

The chapter closes with sections on environmental stewardship, accomplishments and EQAC's comments and recommendations.

1. Trends and Concepts

The Department of Planning and Zoning has the lead responsibility for land use planning in the county. Over the past several years, there has been a concerted effort to improve how the county plans for development and redevelopment. This culminated in 2012 with the Fairfax Forward⁷ project to modernize the planning process. In the past, the Comprehensive Plan was updated every several years through a process known as the Area Plans Review. The APR process reviewed new changes to the plan initiated by private parties. Over time, the APR process was augmented by special studies that addressed the full array of changes necessary to revitalize a neighborhood. The special studies were much more effective, and running both processes was a burden on our professional resources.

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 professional assistance from county staff, a world-recognized urban design firm, experts in transportation and modeling and advisors on communications.

⁷ <http://www.fairfaxcounty.gov/dpz/fairfaxforward.htm>

Technology was incorporated throughout the process with models and digital mockups that showed massing and expected growth projections. These were shared with members of the community to help them visualize the proposed vision. With the plan approved, new mechanisms will need to be adopted that encourage and monitor the vision and provide the ability to monitor the macro effects and provide mitigation options to make sure the reality aligns with the vision.

Fairfax Forward is a much needed program to address the transition from build-out to revitalization. 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 website⁸ defines sustainability as follows:

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.

⁸ <http://www.epa.gov/sustainability/basicinfo.htm>

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.

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

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.⁹ 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

⁹ Charter of the New Urbanism at: <http://www.cnu.org>.

commercial or residential purposes). Such codes also provide incentives for developers to adopt them. They have been successfully adopted as part of the Columbia Pike revitalization in Arlington County. The community worked through a series of **charrettes** with a planning consultant to create a vision for the new “pike.” Form Based Codes provide clear direction on the adopted vision, while incentives encourage developers to adopt the form as the Pike is redeveloped. In particular, developers who follow the codes have an expedited review and approval process.

The county has been adopting the use of **facilitated planning** for many of the special studies. The Tysons Corner Task Force utilized a private consultant, PB Placemaking, to facilitate community sessions. The Urban Land Institute has been assisting with the several other studies.

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.¹⁰ 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 is another approach to creating walkable, livable communities. TOD encourages increased multi-use density

¹⁰ Greenbelt Alliance, [Smart Infill: Creating More Livable Communities in the Bay Area](http://www.greenbelt.org/research-news/publications/smart-infill/), at <http://www.greenbelt.org/research-news/publications/smart-infill/>

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 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 is an approach that reduces the impact of development on a site. The goal of LID is to better integrate the natural environment 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.¹¹ 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.

High Occupancy Toll 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 improvements¹², 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:

¹¹ Low Impact Development Center at: <http://www.lid-stormwater.net/background.htm>

¹² 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

- 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 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 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. As this development is completed and fully occupied, the results of the TDM plan will be monitored and adjusted as necessary.
- 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 utilizing technology to better understand, explain and predict changes within our borders. The centerpiece of the technology is the Geographic Information System. GIS provides a capability to “see” the county through maps, imagery and other geospatial data. To complement 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** 3-D application is a wonderful example of the power of digital technology. EQAC strongly applauds the county for making Virtual Fairfax available to residents on the Internet. Besides being fascinating to fly through our neighborhoods, it is very practical for boards and commissions to visualize proposed changes and make more informed decisions and recommendations.

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 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:

- The GIS and IPLS capability—these are the technical systems that gather, move, manipulate and display information based on geographic location.

- Data that are geographically located, also called spatial data—this is an expensive component that needs to be constantly updated 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.
- Models and applications that can use the data to prepare for future scenarios and advanced visualization tools to help with decision making. The Visual Fairfax 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.

1. GIS and Integrated Parcel Lifecycle System

The IPLS is now available and staff has been doing outreach to train users across agencies on how to leverage the capability. The main transformation is that IPLS provides users with relevant data that can be used for analysis. Prior systems would produce a report that summarized the data. This opens new possibilities for understanding and innovating with information.

The current parcel data include:

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

All data are spatially enabled and can be analyzed with the GIS tools.

This 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. Staff is also able to produce reports in a GIS environment using user-defined geographies. Reports can be generated for population density, population forecasts, housing starts and completions, vacant land and underutilized land.

The uses of these data clearly go beyond the scope of EQAC but illustrate the interconnectedness of the systems. EQAC’s recommendation was narrowly

focused on improving the county's land use planning capability to enable better integration of land use and transportation. It turns out that many other organizations and departments also benefit from this capability.

EQAC commends the Department of Neighborhood and Community Services for its leadership and advocacy on the IPLS. EQAC also congratulates its predecessor agency, the Department of Systems Management for Human Services, on receiving the 2007 GIS Excellence Award for the Best GIS Integration or Application Development.

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 existing categories are no longer appropriate, especially as the county adopts more transit-oriented designs that incorporate mixed use development. Parcels in a mixed use development cross categories and parcels with multiple stories of mixed use further complicate simple analyses.

With IPLS in place, 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 GISs 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 in particular:

- Planimetric data—features you can see, such as buildings, driveways, pools, railroads, ponds, trees.
- 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. Examples include: buildings; hydrographic features such as lakes, streams, paved ditches, and wetlands; transportation facilities such as roads, trails, parking areas, and driveways; street centerlines and sidewalks; railroads; recreation facilities; airports; and utility features such as transmission lines and towers. While significant updates of some of the planimetric data in the county's GIS have

been pursued since initial data acquisition from 1997 aerial photography, there has been no systematic maintenance/updating of these data until now, despite the fact that planimetric features are one of the most frequently used categories of GIS data.

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.

Status of the project

The state of Virginia captured aerial photography at one- and two-foot resolutions for the entire state in March 2007 and again in March 2009. Fairfax County cost-shared with the state to increase the imagery resolution to one-half foot. The higher resolution increases the positional accuracy of features captured from the aerial imagery; it also makes more detail available to users of the imagery (for instance, in many cases, manholes can be identified). The base set of planimetric features that would need to be updated includes all of the planimetric features originally compiled in 1997. New features that have been added to assist in environmental and transportation needs include:

- Driveways.
- Sidewalks.
- Pools.
- Patios.
- Decks.
- Sheds (over 200 square feet).
- Tennis & basketball courts.
- 2-foot Contours (currently have 5-foot Contours).
- Bus-stop pads.
- Building heights.
- Multi-level parking garages.

These features were identified in the user survey as assisting county operations.

Two approaches had been identified to keep the planimetric data layer reasonably up to date. The first approach would focus on a single update process through which the entire county would be updated at once. This would update all of the data at one time, but the next update would not be programmed and therefore there would be considerable uncertainty regarding the timing of this update. The second approach would establish a

continuing four year cycle through which one quarter of the county would be updated each year (but using the same imagery set for all four quarters). While this approach would provide the best guarantee for updating since it does not require a massive one time funding (it would instead be an ongoing project), it would mean that some of the planimetric data could be five years old by the time they would be updated.

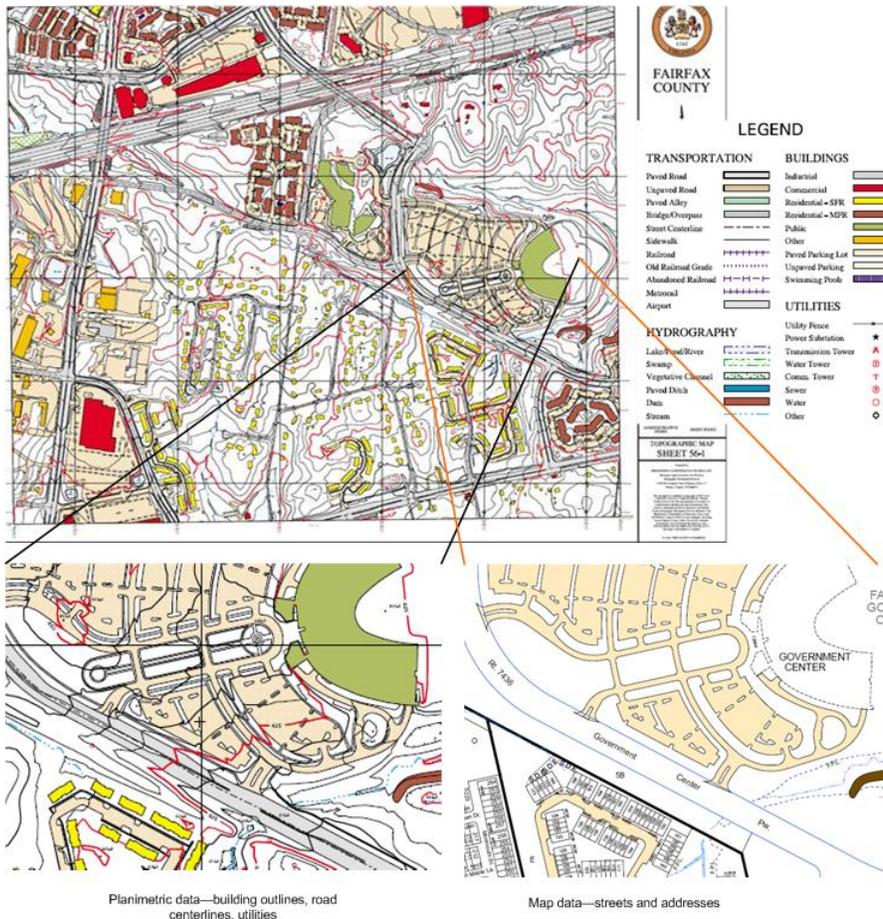
The second approach was decided upon in FY 2007. Through combined funding from stormwater management and DIT special projects, sufficient funds were allocated (based on some contractor estimates) to update 25% of the county annually. The first quadrant (southeast) update, using 2007 aerial imagery, was completed and delivered in August 2010. Because of project schedule slippage, 2009 imagery became available and the remaining updates are being done with the newer 2009 imagery. The second quadrant commenced in December 2010 and the final data were delivered in January 2012. (The original subcontractor did not continue on the contract. As a result a new one had to be found and then worked with to train its staff. This resulted in the additional time.) Work on the third quadrant (northwest) commenced in January 2012 and final data were delivered in September 2012. Work on the fourth quadrant is under way and is scheduled to be completed in January 2013.

Now that the first three quadrants (northeast, northwest and southeast areas) are complete and delivered, it is interesting to look at some project statistics on features added or updated:

- 100,008 buildings (78% are residential)
 - 302 are multi-story garages (new feature)
- 198,179 paved driveways (new feature)
- 3,651 unpaved driveways (new feature)
- 3,294 miles of sidewalks
- 199,609 building additions (deck, patio, pool, other) (new feature)
- 4,190 recreational features (tennis, basketball courts, other) (new feature)
 - 967 Tennis courts
- 166,803 new spot elevations
- 80,927 miles of 2' contours (new feature. Previously had 5' contours)
- 3,032 linear miles of hydrography
- 391 storage tanks were added (new feature).

Overall, 3,587,965 new/updated features were added to the GIS database. Considering that the entire GIS database before the start of this project had 1,512,432 features, it is projected that the total features in the database when all four quadrants are complete will exceed 4,000,000.

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



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 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 and planning. Figure II-2 is a sample oblique image of the Government Center.

Oblique imagery begins to enable three-dimensional models and can have wide applicability beyond the county operations to public participation. In particular, the Area Plans Review process can benefit from better understanding three-dimensional areas around sites subject to proposed amendments.

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



Looking into the future, it is possible to begin accepting Land-Use proposals with three-dimensional Computer-Aided Design and Drafting data. The CADD models can be combined with oblique data to provide accurate 3-D representations of the changes. In effect the county can begin examining proposals using fly-through technology overlaid on ground truth. This will be much more illustrative than artistic interpretations.

The county has oblique imagery collection in the current information technology plan. The current contract for oblique imagery expired in August 2012 and a new procurement is scheduled to conclude in October/November 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

In 2006, county staff began a series of discussions to determine which agencies currently possess ecological data and whether or not other agencies could utilize various ecological data as a shared resource. These data include Resource Protection Areas, wetlands, vegetative communities, hydric soils, tree cover and open space as well as archaeological and cultural resources. The Park Authority has spearheaded the effort to identify data resources and to develop analysis models to evaluate these data. Once appropriate models and protocols have been developed, they

may be used in the future to identify areas that could be targeted for conservation or protection. Currently, the final product of this endeavor is envisioned as a model that will allow county staff to evaluate ecological resources. Also included will be a detailed report listing data sources needed and a plan to consolidate these data and recommendations on the applicability and appropriateness of the model and its limitations.

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. The county regularly uses transportation and traffic models to analyze congestion. Some of this information is reviewed in this chapter.

Computer models are complicated and expensive. However their use is becoming more important and expected for the special study planning approaches that are under way. The Tysons Land Use Task force relied on traffic projections for several development scenarios, and the results of these models weighed heavily in the decision to adopt the 2010 Comprehensive Plan for Tysons Corner.

The county made great strides in visualization tools available to the public with the Virtual Fairfax application. EQAC expects this application to greatly enhance the work of Area Plans Review task forces and encourages all new development proposals to include data sets compatible with Virtual Fairfax. Some sample screenshots of the Tysons Corner area are shown below (Figure II-3). 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.

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 Map¹³. The underlying data are primarily stored in the Integrated Parcel Lifecycle System.

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

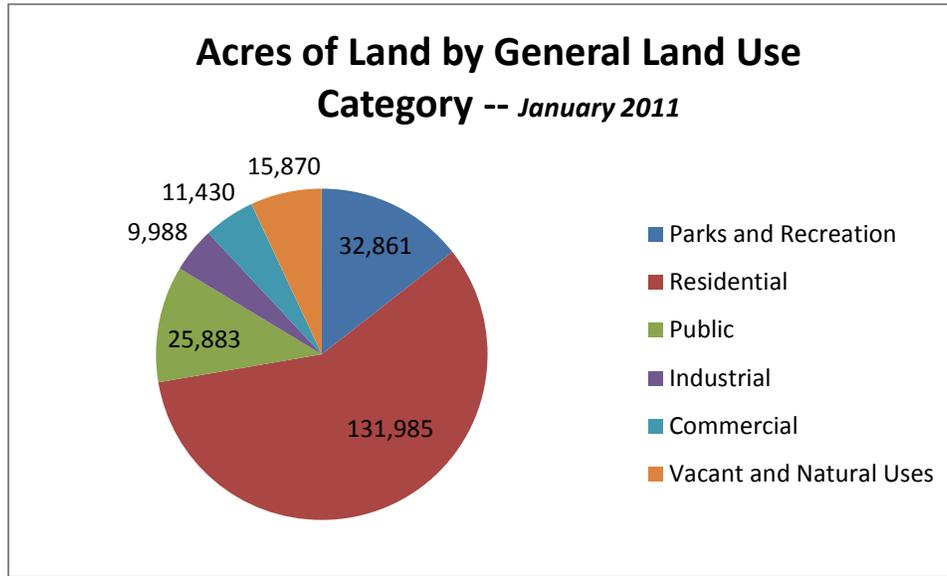
Figure II-3: Virtual Fairfax--Tysons Corner Area



1. How Is Land Used In Fairfax County?

Fairfax County has 228,017 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-4.

Figure II-4: Existing Land Uses in Fairfax County



Source: Fairfax County Department of Neighborhood and Community Services, 2011 <http://www.fairfaxcounty.gov/demogrph/Lusebut.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.

- 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, 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.
- 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. Sections of the Comprehensive Plan are updated periodically to incorporate amendments adopted by the Board of Supervisors. The Web edition of the Comprehensive Plan is the most up-to-date:

<http://www.fairfaxcounty.gov/dpz/comprehensiveplan/>

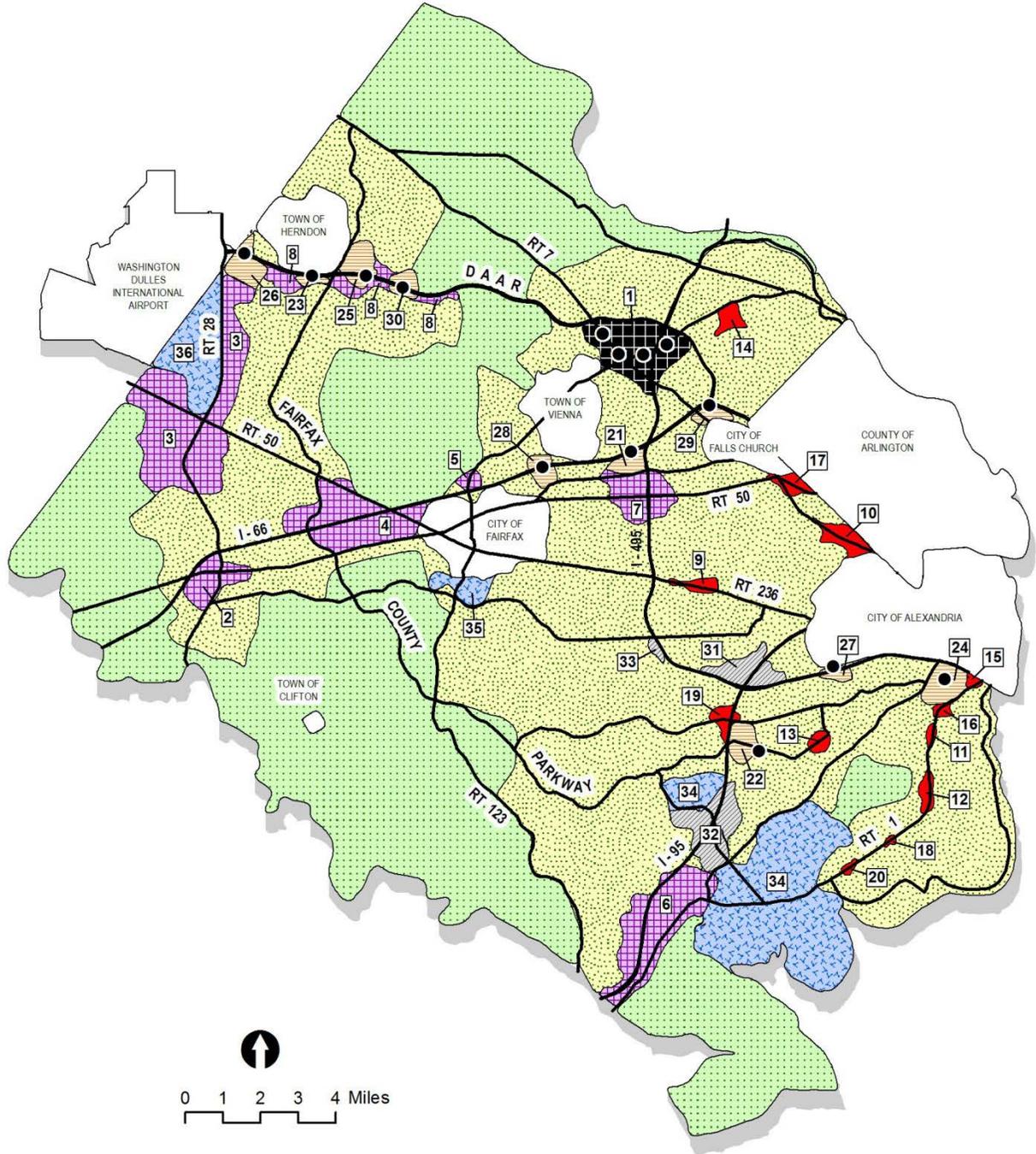
Major Plan revisions took place in 1975 and 1991. The 1991 Plan, which was the foundation for the current 2011 edition, was developed around 18 Goals for Fairfax County (a 19th goal was added later). The 2011 edition of the Fairfax County Comprehensive Plan consists of the Policy Plan, four Area Plans, 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 & Recreation](#)
- [Revitalization](#)
- [Visual and Performing Arts](#)
- [Chesapeake Bay Supplement](#)

a. Concept Map for Future Development

In 1990, the county's Concept Map for Future Development was developed to guide projects. 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-5).

Figure II-5: 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

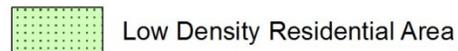
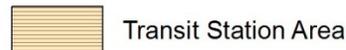
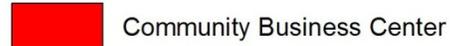
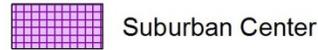
Industrial Areas

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



Currently, 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.

b. Area Plans Review

The Area Plans Review process, which is being replaced through the Fairfax Forward effort, 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.

The APR task force for each district was appointed by the district supervisor. Each task force reviewed proposed changes at a public meeting and submitted a recommendation to the Planning Commission. This was accompanied by a staff recommendation that may or may not have concurred with the task force recommendation.

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 impact on transportation, education and environmental resources of the individual nominations. The cumulative effects--the macro considerations, however, were not analyzed.

Such a concern was the motivation to defer nominations in Tysons Corner and appoint a task force to look at comprehensive changes.

The northern portion of the county, which includes Dranesville, Hunter Mill, Providence and Sully districts, was reviewed in 2009. The South County APR was reviewed in 2010.

c. Recent Special Studies and Selected Amendments to Area Plans

Plan Amendments that have been recently adopted by the Board of Supervisors can be found at <http://www.fairfaxcounty.gov/dpz/comprehensiveplan/planadopted.htm>.

d. District Planning Processes

Several supervisory districts has 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. Land Use History and Buildout 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 2011, with only approximately 6.3 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 Zoned 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
2011	14,278	227,130	6.3 percent
<p style="text-align: center;">Zoned land does not generally include public roads and water Note: Some of the decrease in vacant land between 2000 and 2007/2010/2011 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>			
<p style="text-align: center;">Source: Fairfax County Department of Systems Management for Human Services (IPLS), 2007 and Fairfax County Department of Neighborhood and Community Services, 2010 and 2011</p>			

4. 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.

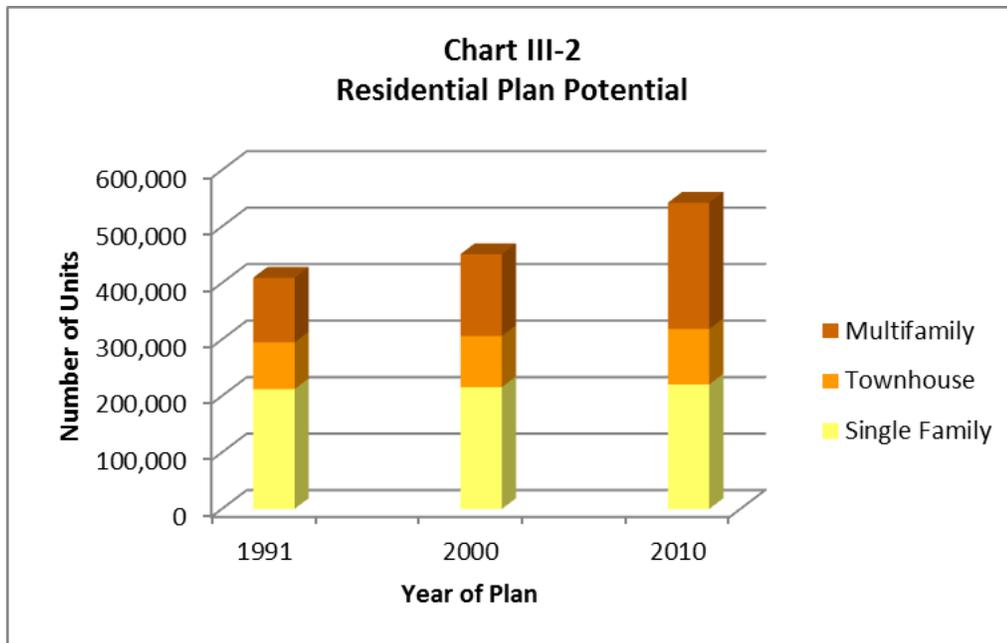
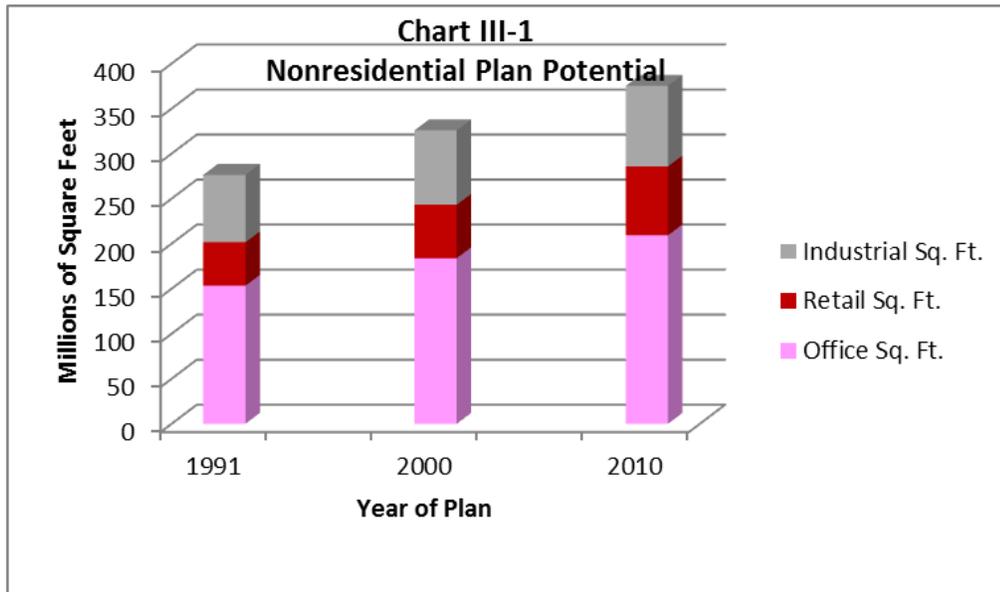
In 2012 the county published a comprehensive review of changes to the Plan over the past 10 years. The study notes that “Between 2001 and 2010, there were a total of 284 amendments adopted to the Area Plans. Of these, 221 or 78% were located in the county’s activity centers.” As changes are made to the 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-6. With the observation that the county is close to build-out, with only 6.3% vacant space available, the Plan 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 Metro. The area most adjacent to the Metro 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 Orange line corridor, but they are also happening in Fairfax County.

Figure II-6: Nonresidential and Residential Plan Potential



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

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 implementation of the county watershed management plan and the augmentation and clarification of the Environmental Quality Corridor policy to preserve ecologically sensitive habitats.

5. A Fairfax County Example: the Merrifield Suburban Center

The Merrifield Suburban Center is just starting to emerge as a vibrant transit-oriented place in the county. An EQAC member who is a co-author of this chapter used to live near the Gallows Road and Lee Highway intersection; he reports that the changes in Merrifield have created a new destination, a new place that he looks forward to visiting. 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. New residences adjacent to the Metro are already at 80% occupancy, and new restaurants and shopping venues are opening.

The transition from a sleepy intersection to a transit oriented center has, however, been 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 has persevered. Merrifield, like all suburban areas, has unique challenges and, in this particular 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.

These challenges and advantages have combined to create a transformed place with new residents and amenities. The lessons of Merrifield should be captured to help repeat this success across the rest of the county.

D. TRANSPORTATION

This section examines transportation and transportation decision making in Fairfax County.

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 one of the most significant elements of transportation that has a major effect on the environment and is most closely related to land use and development. In modern times, people have become more reliant on the use of automobiles for business, pleasure and various daily functions and activities. The urban sprawl that has been experienced in Fairfax County has greatly influenced this problem, causing major congestion on roadways, particularly during rush hour as many individuals are commuting long distances to and from their jobs.

Rail and rapid bus transit has long been 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.

- 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. Bus traffic includes school buses, most of which are transporting students during rush hour periods. Many of these buses are old and are a hazard to the environment, because of the type of fuel they use.
- Non-motorized transportation opportunities, namely walking and biking, have been looked upon as viable alternatives for reducing traffic congestion and improving air quality. Not having sufficient infrastructure for walking and biking is a major deterrent to that form of transport, not to mention the frame of mind of the general public that has become automobile-dependent over the years, even for short trips. This component has an important relationship to land use planning and development in order to ensure that adequate facilities (walking and biking trails) are included in the plans.

- “Virtual transportation” has surfaced in recent years as another viable alternative to motorized transportation. Modern technology has created opportunities for people to work out of their homes, using computers for telecommuting and e-commerce to perform their jobs. If these techniques become a more widely accepted means of performing one’s job, it would have a significant positive impact on reducing pollution and improving air quality. Fairfax County is a leader in this field with the Fairfax County Government Telework Program.

2. Vehicular Congestion and Volume to Capacity Ratio Maps

This section examines vehicular transportation options and the associated congestion that is experienced every day by drivers. Vehicle congestion on roadways is typically measured by volume to capacity ratio. The Fairfax County Department of Transportation’s Planning Division created a map for this report that shows the current and projected V/C ratios on major Fairfax County roadways. As V/C increases from zero to one, the volume approaches the road capacity. Over one, there is more volume than the road can support. The Level of Service is a measure of congestion; once V/C reaches one, the road is fully saturated and the LOS is graded an F for failing.

V/C ratios on county highways as of 2002 are shown in Figure II-7. Major portions of the Beltway, I-66 and the Fairfax County Parkway already have a failing LOS.

Projected V/C ratios for 2025 are shown in Figure II-8. This information considers population growth and settlement projections. Comparing the 2002 V/C ratio map with the future V/C ratio map provides many insights into how the transportation infrastructure grows with population.

Some observations:

- The failing highways are still failing, some much worse and others actually better:
 - I-66 West of the City of Fairfax will get increasingly more congested, while I-66 east of Fairfax will get less congested.
 - The Beltway will become considerably more congested, with V/C ratios ranging from 1.5 to over two. Congestion in the “mixing bowl” area (the I-95/I-395/I-495 interchange area) will continue to get worse. The impacts of the reconstructed mixing bowl are not yet factored into the model; however, interchanges are modeled separately from segments and the data may not reflect the current improvements.
 - I-95 outside the Beltway will get significantly worse, with V/C ratios increasing from 1.01-1.04 to 1.76 or greater.

- Major roads closer to Washington D.C. will not change considerably over this period. This includes Route 29 and Route 50.
- Major roads in the western part of the county will get more congested; this includes portions of Routes 28, 123 and 7 west of Reston. This will primarily be induced by commuters from outside the county.

The maps do not include potential improvements from mass transit. In particular, the Dulles Rail extension will impact congestion in the Tysons Corner area, and an Orange Line extension to Centreville will impact congestion along I-66 throughout the county. The maps also do not show changes from the soon-to-open express lanes on the Beltway.

Both of these improvements have a dynamic component and are more difficult to model accurately. One of the recommendations of this chapter is to continue studies to better model the effect of transit on congestion and other dynamic aspects of a modern transit system. The improvements need to be implemented to provide the board with better data to make future transportation decisions.

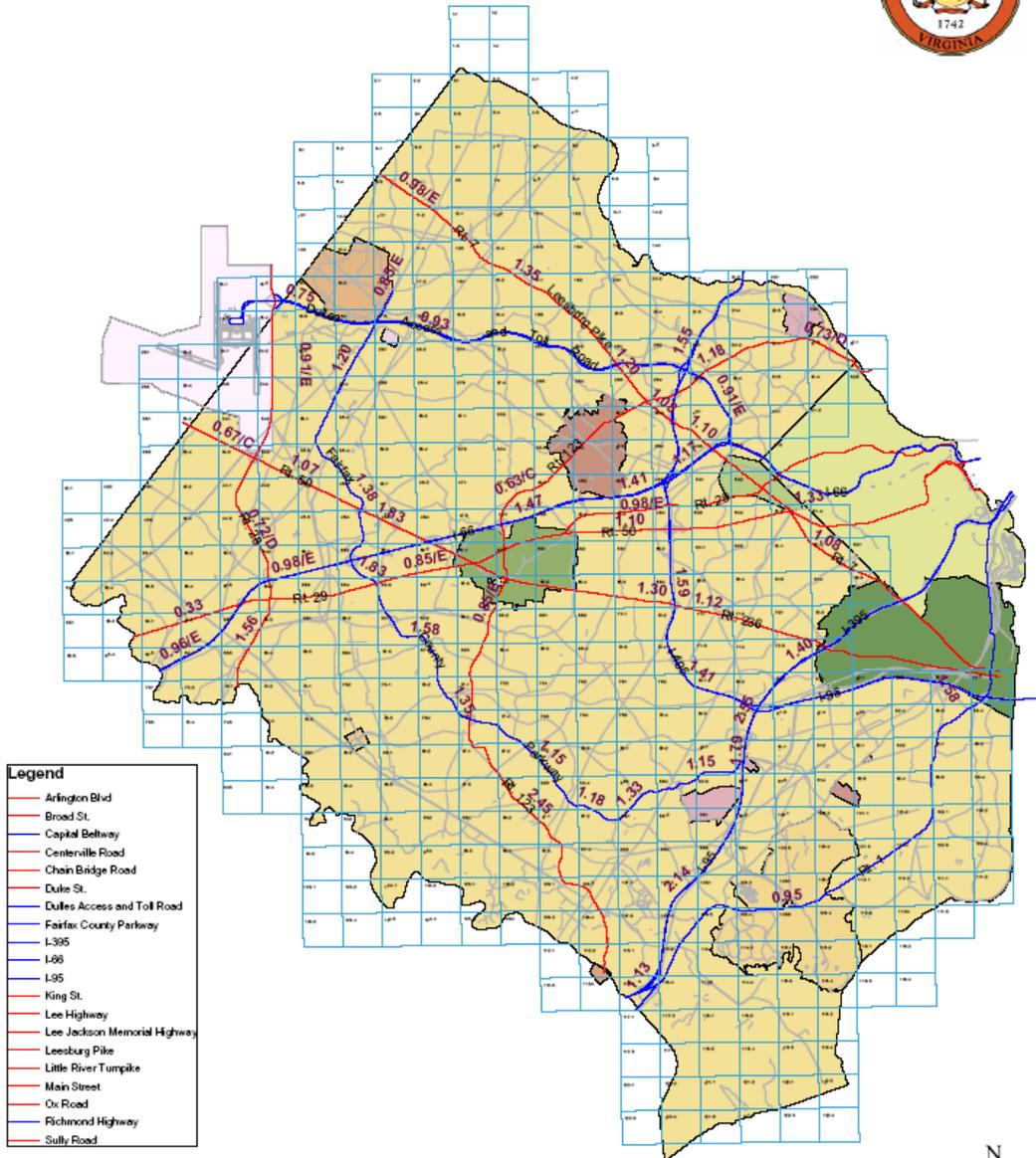
Frequently the focus of transportation congestion is on big projects, such as Tysons or HOT lanes. This needs to be balanced with regular maintenance of the existing infrastructure. An important policy identified by the Coalition for Smarter Growth is “fix-it-first” to ensure that all state maintenance needs are met and to direct funding to fixing problems on existing roads and transit prior to funding new construction.¹⁴ As infill becomes the primary mode of development, the existing infrastructure will demand more resources to accommodate denser developments.

3. Residential Commuting

An interesting statistic on commuter patterns is that over 50 percent of the residents in Fairfax County work in Fairfax County (see Table II-4), with another 17 percent working in the District of Columbia. Similarly, most of the workers in Fairfax County live in Fairfax County (see Table II-5); 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.

¹⁴ <http://www.smartergrowth.net/vision/regions/region.html>

Figure II-7.
Average Volume/Capacity V/C Ratios -
Existing Peak Hour Conditions (2002)



- Legend**
- Arlington Blvd
 - Broad St.
 - Capital Beltway
 - Centerville Road
 - Chain Bridge Road
 - Duke St.
 - Dulles Access and Toll Road
 - Fairfax County Parkway
 - I-395
 - I-66
 - I-95
 - King St.
 - Lee Highway
 - Lee Jackson Memorial Highway
 - Leesburg Pike
 - Little River Turnpike
 - Main Street
 - Ox Road
 - Richmond Highway
 - Sully Road

Note:
 0.00/A: volume-to-capacity ratios/level of service
 All V/C ratios above 1.0 = LOS F



Source: Fairfax County Department of Transportation

Table II-4		
Where do Residents of Fairfax County Go to Work?		
<u>Destination</u>	<u>Number of Commuters from Fairfax County</u>	<u>Percent of Total Commuters from Fairfax County</u>
Fairfax Co, VA	278,064	52.72 percent
District of Columbia	88,908	16.86 percent
Arlington Co, VA	48,670	9.23 percent
Alexandria City VA	27,641	5.24 percent
Montgomery Co, MD	16,943	3.21 percent
Loudoun Co, VA	16,420	3.11 percent
Fairfax City, VA	15,741	2.98 percent
Prince George's Co, MD	9,594	1.82 percent
Prince William Co, VA	7,013	1.33 percent
Falls Church City, VA	4,061	0.77 percent

Source: U.S. Census Bureau, Commuting Patterns of Fairfax County, Virginia Residents, 2000¹⁵

Table II-5	
Where Do Workers in Fairfax County Come From?	
<u>Origin</u>	<u>Number of Commuters</u>
Fairfax Co, VA	278,064
Prince William Co, VA	44,322
Loudoun Co, VA	35,933
Montgomery Co, MD	22,148
Arlington Co, VA	20,476
Prince George's Co, MD	18,258
Alexandria City, VA	14,643
District of Columbia	12,244
Stafford Co, VA	7,249
Fauquier Co, VA	5,499
Manassas City, VA	5,145

Source: U.S. Census Bureau, Commuting Patterns of Fairfax County, Virginia Residents, 2000

The following has been noted by the Metropolitan Washington Council of Governments in its January 2006 publication "Fairfax County and the Washington Region: A Look at Economic and Demographic Characteristics" (see page five):

"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

¹⁵ http://www.fairfaxcounty.gov/demogrph/census_summaries/2000census_commuting.pdf

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, four percent (14,207 housing units) do not have vehicles. For renter-occupied housing units, approximately nine percent do not have vehicles.”

4. Transportation Decision Making

Management of transportation to maximize its usefulness and minimize its adverse impact on the environment is made very difficult because of the complex interrelationships of federal, state, regional, sub-regional and local entities that are all involved in Fairfax County transportation planning and funding. Local initiative in addressing transportation needs is further limited because the commonwealth of Virginia owns and maintains every public road in the county. Even subdivision cul-de-sacs are state roads.

The complexity of solving transportation problems in Fairfax County and mitigating the adverse environmental impact of inadequate or less than optimum projects can be better visualized by reading the *Northern Virginia Transit Funding Resource Guide* issued by the Northern Virginia Transportation Commission. This resource guide describes the many sources of funds that are available for transit projects and lists over 50 federal and 30 state and local funding programs. However, with governments at all levels facing a severely reduced capability to fund projects, they cannot provide funding levels to qualify for matching grants from many of these sources.

A variety of funds are available from the federal government, but they all come with specific requirements. Federal regulations, standards and guidance must be met before consideration will be given as to whether federal share contributions will be made available toward transportation needs.

In Virginia, the **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.

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.

The **Northern Virginia Transportation Coordinating Council** has developed a Northern Virginia 2020 Transportation Plan, December 1999, which is a

comprehensive study identifying a multi-modal transportation solution to provide safe, efficient and economical choices for travel and transport of goods. The plan has become part of the broader planning effort of the Transportation Planning Board of the Metropolitan Washington Council of Governments. Specific projects will be submitted by the commonwealth of Virginia for inclusion in Washington, D.C. region's financially Constrained Long Range Plan as funding streams open up.

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," 5/30/2008, which is available from the Transportation Planning Board of the Metropolitan Washington Council of Governments.

5. Non-motorized transportation

There are many potential environmental improvements that can be brought about by providing greater opportunities for non-motorized means to commute, travel or obtain recreation. They include: reducing air pollution caused by traffic congestion; reducing water pollution caused by roadway and parking lot construction made necessary by traffic demands; reducing noise pollution caused by on-road vehicles; and reducing energy consumption required to operate motorized vehicles. The following sections describe programs that provide options.

a. Walking – the Pedestrian Program¹⁶

Fairfax County's Pedestrian Program was started in 2002 following a spike in pedestrian fatalities. In 2006, the board endorsed a ten-year funding goal of \$60 million for new pedestrian projects. Through FY 2012, Fairfax County has designated \$58 million in federal, state and county funding to construct pedestrian improvements in high-priority areas of Fairfax County. The program includes construction of new or missing segments of sidewalks and/or trails and pedestrian safety and accessibility improvements at intersections around the county. From FY 2008 through FY 2011, the county completed construction on 70 sites/segments, with three under construction and another 38 under design.

Major sidewalk projects are complete along Route 1, Route 29 and Route 236. Pedestrian intersection improvements are complete along Route 7, Route 28, Route 29, Route 50, Route 123, the Fairfax County Parkway and Old Keene Mill Road. Pedestrian and bike access are being constructed on most of the bridges crossing the I-495 Express Lanes project and will

¹⁶ Transportation Information for EQAC Updated June 29, 2012, Dan Southworth, FCDOT; Fairfax County Pedestrian Program Activity Status Summary presented on August 11, 2010 to EQAC, and EQAC Minutes from the August 11, 2010 Meeting

improve some of the worst barriers to pedestrian and bicycle movement in Fairfax County.

The Fairfax County Department of Transportation has also funded priority roadway lighting projects and countdown signal improvements as part of the Pedestrian Program. In coordination with DPWES, roadway lighting projects are under way at initial project locations including George Mason University, Route 1, Columbia Pike and Oakwood Road at Van Dorn Metro. Fairfax County also has a greater number of modern countdown signals installed than any other jurisdiction in Virginia. The Fairfax County Department of Transportation initially funded VDOT signal upgrades at 150 locations, and VDOT has continued upgrading with state funding.

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 Pedestrian Outreach Coordinator are all involved in community outreach. The Fairfax County Department of Transportation coordinates with other facility resources and departments as appropriate.

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

b. Biking --The Fairfax County Comprehensive Bicycle Initiative¹⁷

The county’s Comprehensive Bicycle Program is managed through the Department of Transportation. The program’s primary goal is to make bicycling a viable transportation mode and to make Fairfax County bicycle friendly and safe.

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, “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 about 6,000 copies in the initial print job and will follow up with another run of approximately 41,000 more

¹⁷ Transportation Information for EQAC Updated June 8, 2011, Dan Southworth, FCDOT; EQAC Minutes from August 11, 2010

as a result of demand for the maps. The Fairfax County Department of Transportation was also awarded a transportation enhancement grant for fiscal year 2010 to complete a bicycle map that highlights a route along historic Civil War sites in Fairfax County. Electronic copies of the “Fairfax County Bicycle Route Map,” map are available for download in PDF format at <http://www.fairfaxcounty.gov/fcdot/bike/bikemap.htm>.

Major activities and achievements for this past year include:

Fairfax County Bicycle Master Plan: Approved in 2010 by the Board of Supervisors, work began in August 2010 to create a bicycle master plan for Fairfax County. This study will provide guidance for the planning and implementation of bicycle facilities as well as policies and programs influencing cycling in the county and increasing the cycling modal split.

In order to address the accelerated comprehensive planning efforts in Tysons Corner, the project was broken into two phases. Phase I focused on the greater Tysons area including segments of McLean, Merrifield, and Vienna; while Phase II will encompass the rest of Fairfax County. Phase I was completed in early 2011; Phase II began in April 2011 and was to have been completed in summer 2012.

Enhanced Bicycle Parking: Efforts to expand and enhance bicycle parking countywide are continuing. Installation of 150 new bicycle racks is almost complete. Ten new bicycle lockers were recently installed at the Reston Town center Transit Center and ten lockers were installed at the Courthouse Complex and made available to employees who bike to work. Bicycle lockers are currently located at the following transit facilities: Sunset Hills Park and Ride; Herndon-Monroe Park and Ride; Reston Town Center Transit Center; and Reston South Park and Ride

As part of the Silver Line expansion of Metrorail, staff is working closely with WMATA and developers on bicycle parking facilities at the new stations. Reston-Wiehle Station will provide a secure bicycle parking room capable of parking over 200 bicycles, including space for bicycle related retail use and future bicycle sharing.

This year, WMATA opened the first of several “Bike and Ride facilities at College Park Metro Station providing convenient and secure bicycle parking. The “Bike and Ride” concept will be expanded this coming year to additional metro stations including Vienna Metro and Franconia-Springfield Metro stations.

Work was initiated on the expansion of the Stringfellow Road Park and Ride Lot. This expansion will include new secure and covered bicycle parking facilities as well as enhanced trail and sidewalk connections.

FCDOT Bicycle Staff provides technical assistance to schools, shopping centers and commercial property owners on the proper installation/location of bicycle racks. Draft Fairfax County bicycle parking guidelines, standards and specifications will be released soon providing additional guidance to both the development community as well as government agencies responsible for the design, installation and maintenance of bicycle racks and bicycle parking facilities.

On-Road Bicycle Lane Initiative: FCDOT has teamed up with VDOT's Traffic Engineering and Maintenance to retrofit roadways with new on-road bicycle facilities. Most of these new segments of bike lanes are accomplished as part of VDOT's summer repaving program. Roadways recently completed include: Soapstone Drive; Sleepy Hollow Road; Lewinsville Road; Sully Park Drive; Dolly Madison Boulevard (southbound only); and Gallows Road Phase II.

Connecting the County: As part of the original four priorities established by the Board of Supervisors, several projects were completed or initiated during 2010. Projects were completed this year include:

- Construction was completed in May of this year on the Pohick Stream Valley Rail-Trail, a joint project of FCDOT and the Fairfax County Park Authority. This 1.5 mile segment of shared use path connects the Burke VRE Station to the Burke Village area. The next phase (designated the Liberty Bell Trail) is funded and currently in the design phase and will extend this trail to Burke Road and the Rolling Road VRE Station.
- Construction was completed on the Trap Road Bike/Pedestrian Bridge over the Dulles Toll Road. This was a joint project between Fairfax County, Virginia Department of Transportation, and the Federal Highway Administration.

Bike the Sites Bicycle Route Map: In late 2010, FCDOT received authorization to proceed with the creation of a bicycle route map defining a family friendly bicycle route centered on historically significant sites in the western area of Fairfax County. The map will provide information about these sites and define public parking where bicyclists can begin their journey. The project was funded with a Federal Transportation Enhancement grant and projected to be complete in 2012.

c. Fairfax County Telework Initiative and Employer Services Program¹⁸

Fairfax County has a teleworking option for the county staff. The support from the Board of Supervisors and the County Executive, plus the marketing and training campaign and technology enhancements, are working. Increased interest in telework is evident in the number of employees who participate in training sessions, ask for information via email and phone and sign up for telework. There are now teleworkers in departments that previously had none. Managers have expressed an interest in telework as a way to continue business operations during inclement weather or emergencies. 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 other businesses on teleworking.

With respect to the county's telework program, the increased publicity and organizational focus on teleworking has resulted in an increase in the number of teleworkers, from 138 in December 2001 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), and the number of teleworkers continues to increase, as there were, as of August 2011, 1,474 county teleworkers. 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 increase the number of county workers who telework and will 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.

Promotion of teleworking is also part of the county's Employer Services Program. This program partners with area businesses to facilitate the creation and implementation of commuter programs. Commuter programs have been shown to improve productivity, make recruitment and retentions easier and improve morale. The Employer Services Program also partners with businesses and the state and federal governments to encourage telecommuting and the use of mass transit, carpools, vanpools, biking and walking instead of drive-alone commuting.

A description of the Employers Service Program can be found on the county's website at: <http://www.fairfaxcounty.gov/fcdot/Employer.htm>.

¹⁸ E-mail from Catherine Chianese, Assistant Fairfax County Executive, Sept 7, 2011

d. The Countywide Transit Network Study

The Fairfax County Department of Transportation is beginning the Countywide Transit Network Study to determine the types of transit systems needed to accommodate desired economic growth throughout the county over the next several decades. The study will develop recommendations for where Metrorail should be extended, where streetcar or light-rail systems are appropriate, and where dedicated lanes that allow buses to move faster could go. The study will also recommend how the system can be phased in and funded over time.

The purpose of the Countywide Transit Network Study is to establish a network of high quality transit corridors in a cost-effective way to serve the county’s needs to accommodate planned growth over the long term.

<http://www.fairfaxcounty.gov/fcdot/2050transitstudy/>

The study has three primary objectives:

- Determine future countywide transit needs.
- Determine travel markets.
- Determine countywide connected transit network.

6. Major Transportation Projects¹⁹

a. Tysons Metrorail Station Access Management Study

In order to create a multimodal access management plan for the Metrorail stations, currently under construction, in Tysons Corner, as well as to get the public to begin thinking about how they will reach the stations, the BOS approved funding for the Tysons Metrorail Station Access Management Study project on June 1, 2009. The ultimate objective of the study was to create a document that can be used as a tool for the BOS to make funding decisions on multi-modal transportation improvement projects, specifically to access the Metrorail stations in Tysons Corner, as funding becomes available.

A TMSAMS Advisory Group was formed to guide the study through its completion, determine what information to present to the public, how best to present the information and how to collect public input. Representing a broad spectrum of interests, the TMSAMS Advisory Group consisted of representatives from each of the BOS district offices that include and encompass Tysons Corner, residents from each of these districts, bicycle advocates, representatives from the business and development community as well as staff from the Fairfax County Park Authority, the Fairfax County Office of Public Affairs and the Chairman of the Board of Supervisors

¹⁹ Transportation Information for EQAC Updated June 8, 2011, Dan Southworth, FCDOT

Office. It was staffed by the Fairfax County Department of Transportation. Along with the Comprehensive Plan for the Tysons Corner Urban Center, the TMSAMS Advisory Group selected three recently completed Fairfax County Department of Transportation studies to provide the basis for recommended alternative mode transportation improvements in the TMSAMS effort. These studies are: the Fairfax County Transit Development Plan, the Tysons Corner Sidewalk Analysis, and the Tysons Corner Bicycle Master Plan.

The Perspectives Group, a private public-outreach consulting firm with extensive Tysons related experience, conducted a comprehensive public involvement process for TMSAMS. This public involvement process included a total of four initial public meetings, approximately 20 key stakeholder interviews and the development of a TMSAMS web site with an online survey. This highly successful public involvement process resulted in over 250 people attending one of the four public meetings and over 1,900 people participating in the TMSAMS online survey.

After this extensive public involvement process was complete, The Perspectives Group compiled the results of the input collected and produced the TMSAMS Final Report, including summaries from all areas of the outreach effort. Section 6 of the report highlights the top ranked bus transit, pedestrian and bicycle facility improvement recommendations, specifically improving access to the four new rail stations, from Comprehensive Plan for the Tysons Corner Urban Center, the Fairfax County Transit Development Plan, the Tysons Corner Sidewalk Analysis and the Tysons Corner Bicycle Master Plan. A final public meeting, with over 95 people in attendance, was held on October 4th, 2011 to present the findings of the TMSAMS public outreach effort.

Also included in this report are recommendations from the TMSAMS Advisory Group for additional improvements, additional analysis and increased use of technological innovations to address transportation related issues not covered by the FCDOT studies that were incorporated into the TMSAMS effort. As previously stated, the ultimate objective of this study is to create a document that can be used as a tool for the Fairfax County Board of Supervisors to make funding decisions on multi-modal transportation improvement projects, to access the Metrorail stations in Tysons Corner. In order to reach this objective, FCDOT staff conducted a thorough assessment of the priorities and recommendations contained in the TMSAMS Final Report and developed the "FCDOT Staff Recommend List of TMSAMS Projects and Associated Cost Estimates" document as well as the "Staff Responses to TMSAMS Advisory Group Recommendations" document. These documents were approved by the BOS during its May 22nd, 2012 meeting and are available on the TMSAMS website:

<http://www.fairfaxcounty.gov/fcdot/tmsams/>.

b. Dulles Corridor Metrorail Project

The Dulles Corridor Metrorail Project has completed three years of construction along the extension between I-66 at the Dulles Connector Road and Wiehle Avenue in Reston. Approximately 72% of the construction activity is complete with major work efforts on the alignment along the entire line, tunnel construction along Route 123 between International Drive and Route 7 in Tysons Corner, and at all five stations. Phase 1 estimated completion cost is \$2.905B \$150M over the project budget of \$2.755B. Passenger service will begin in late 2013 or early 2014.

The DCMP has been working closely with landowners in Tysons Corner to accommodate requests by landowners to provide for direct connections to the Metrorail system. At the Tysons West station, the entry pavilion on the east side of the station will be relocated into the proposed development by Georgelas and Cherner at the intersection of Route 7 and Spring Hill Road. An SAIC request for a direct connection to the entry pavilion on the east side of the Central 7 station has been approved. An agreement has been reached with Tysons Corner Center to adapt the south side entry pavilion at the Central 123 station to accommodate the development conditions placed in their approved rezoning.

The transit oriented, mixed use development at Wiehle Avenue is continuing on schedule. Comstock Companies will construct the development with a below-grade 2,300 space parking garage, 12 bus bays, 45 kiss-and-ride spaces, and 150 secure bicycle spaces for the Metrorail station. The project will include approximately 1.3 million square feet of office, retail and residential uses; 19.5% of the residential units will be affordable dwelling units. The Metrorail facilities will be operational when the DCMP opens for passenger service in late 2013 or early 2014.

The Metropolitan Washington Airports Authority has completed 100% Preliminary Engineering and the Independent Cost Estimate for Phase 2 (March 2012) of the Dulles Corridor Metrorail Extension (Wiehle Avenue to Dulles International Airport and Loudoun County). Fairfax County, Loudoun County and MWAA have all committed to participate in Phase 2. During the summer and fall of 2011, U.S. Department of Transportation Secretary Ray LaHood assisted in the negotiations of a Memorandum of Agreement among the funding partners for Phase 2. The MOA assisted in resolving outstanding issues among the funding partners and provided the framework to execute Phase 2. In December 2009, the Board of Supervisors approved a petition of landowners to form a Phase 2 tax district to provide \$330 million to fund a major portion of the county's portion of Phase 2 of the DCMP. MWAA will initiate Phase 2 final design and construction through a competitively procured design/build contract. This process will result in rail passenger service commencing by late 2016 to early 2017.

On February 23, 2010, the Board of Supervisors approved a Special Exception Amendment for expansion of the West Falls Church Service and Inspection Yard to accommodate rail car storage and maintenance for Phase 1 of the DCMP extension to Wiehle Avenue. The SEA authorized expansion of the yard capacity by 42 rail cars and the addition of maintenance bays in a new annex building. As part of the approval, MWAA and the Washington Metropolitan Area Transit Authority agreed to construct a new stormwater management detention pond and rehabilitate the existing stream that runs through the property. In addition, a \$10 to \$12 million cover box will be installed over the eastern most curved track in the yard to reduce “wheel squeal” that occurs as rail cars are moved within the yard. These improvements will be implemented to coincide with the initiation of passenger service to Wiehle Avenue.

Approximately \$8 million in Congestion Mitigation and Air Quality funds are being used to implement pedestrian and bicycle improvements identified in the Reston Metrorail Access Group study for the Wiehle Avenue station, and intersection improvements in Tysons Corner.

c. The Beltway Express Lanes Project

This project is constructing 14 miles of new HOT lanes (two in each direction) on I-495 between the Springfield Interchange and just north of the Dulles Toll Road. These HOT lanes will allow the Beltway to offer HOV-3 connections with I-95/395, I-66 and the Dulles Toll Road. When completed, buses, motorcycles and carpools and vanpools with three or more people can ride in the new lanes for free. Vehicles carrying two people can either travel for free in the regular lanes, or pay a toll to ride in the HOT lanes. Tolls for the HOT lanes will change according to traffic conditions, which will regulate demand for the lanes and keep them congestion free.

This project will also reconstruct major portions of the 45-year-old infrastructure, replacing 50+ bridges and overpasses, upgrading 10 interchanges and improving bike and pedestrian access. This project is made possible through a public-private partnership between the Virginia Department of Transportation and Fluor-Transurban.

Project construction is ongoing and, as of the date of preparation of this report, over 92% complete. Many of the major traffic switches are finalized with work commencing in the median area. VDOT and the Express Lanes partners have developed a conceptual corridor wide landscaping plan which is available for public review and comment. The project has an estimated completion date of late 2012.

As a part of the Beltway Express Lanes project, construction is in progress on the Springfield Interchange, Phase VIII work, which adds HOT/HOV connections between I-95, I-395 and I-495.

d. The I-95 HOT Lanes Project

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

This new project will create approximately 29 miles of express lanes. This project will: add capacity to the existing HOV Lanes from the Prince William Parkway to the vicinity of Edsall Road; improve the existing two HOV lanes for six miles from Route 234 to the Prince William Parkway; and add a nine-mile reversible two-lane extension of the existing HOV lanes from Dumfries to Garrisonville Road in Stafford County. As a separate project, plans are also 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.

VDOT held the Design Public Hearings for the 95 Express Lanes between Edsall Road in Fairfax County and Garrisonville Road in Stafford County on September 26, 28, and 29. Federal Highway Administration issued a finding of no significant impact on December 5, 2011. VDOT and Fluor-Transurban have come to a principle agreement on the major commercial terms and are in the process of finalizing the agreement. The estimated \$1 billion project is being financed and constructed under Virginia's Public-Private Transportation Act. The private sector is expected to contribute a majority of the project's funding and financing, with support from a state contribution.

The Express Lanes project will link the I-95 HOV lanes to new express lanes on the Capital Beltway, creating a network spanning more than 40 miles and providing HOV and transit service to major employment centers including Tysons Corner, Merrifield, Fort Belvoir and Quantico. The project will also relieve one of the worst traffic bottlenecks in the region where the existing HOV lanes currently end at Route 234 in Dumfries. Carpools with three or more people, vanpools and transit vehicles will have free access to the Express lanes. The express lanes will use adjustable tolls to control congestion based on real-time traffic conditions. It will also deploy video technology to identify accidents and electronic signs to communicate with drivers and state troopers to ensure enforcement. Construction of the project is expected to support 8,000 jobs.

e. The Columbia Streetcar Project (Pike Transit Initiative)

The Columbia Pike Transit Alternatives Analysis was conducted by WMATA and its engineering consultants with the cooperation of Arlington and Fairfax Counties from spring 2004 to spring 2006. The two counties undertook the Pike Transit Initiative to consider the development of an advanced transit system connecting the Pentagon/Pentagon City area with Baileys Crossroads. In May 2006, the Fairfax County Board of Supervisors endorsed the “Modified Streetcar Alternative” recommended in the Columbia Pike Transit Alternatives Analysis as the preferred transit alternative. The endorsement allowed the project to advance to the project development phase to create a financial strategy.

After the conclusion of the Columbia Pike Transit Alternatives Analysis, the project team was awaiting the outcome of Virginia legislative action regarding the Northern Virginia Transportation Authority’s funding assumption that changed due to the ruling of State Supreme Court. Based on the ruling, the project team decided to enter the New Starts/Small Starts program (through the Federal Transit Administration) to assist with financing construction of the project.

Currently, the Pike Transit Initiative has entered the environmental documentation stage. A letter from the FTA agreed with the initial recommendation by the counties and its consultants that the environmental documentation needed for this project is an Environmental Assessment. As part of the EA the project team is also evaluating four alternatives. There is an Alternatives Analysis that was combined with the EA. The four alternatives are: a no build alternative; enhancing the existing bus service with additional buses; replacing some of the existing buses with articulated buses; and replacing some of the existing buses with a streetcar system. The combined AA/EA document will determine the environmental impacts, ultimate alignment, minor preliminary engineering, a financial strategy and a project sponsor/operator to advance the project through full engineering, construction and operation.

The draft AA/EA was approved by the FTA to be released for public comment. The public comment period went from May 22, 2012 to June 21, 2012 with public meetings on June 6 (in Arlington County) and June 7 (in Fairfax County). On July 31, 2012, the Fairfax Board of Supervisors approved a locally preferred alternative (from the four alternatives evaluated) with the expectation that the project will enter the New Starts/Small Starts program in the fall/winter of 2012. A final determination on the environmental impacts is not expected to be issued until preliminary engineering has been completed and FTA has selected the project to receive federal funding.

Funding for this project is anticipated from FTA, local and state transportation fund fees and taxes, as well as other options. Fairfax County's current commitment for the environmental documentation phase is 20 percent. Fairfax County's commitment for the total capital and operating expenses will be determined at a future date. The 2005 total capital costs and operating costs for the board-approved modified streetcar alternative have been updated in the AA/EA document. The capital cost (in 2016 dollars) ranges from \$242-\$261 million and the operating cost (in 2016 dollars) ranges from \$22.5-\$29.6 million.

7. Transportation Alternatives and Accomplishments²⁰

a. Transportation Demand Management

The county has integrated Transportation Demand Management strategies into the land development process and is working to standardize 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 non-attainment of proffered goals. The TDM proffer coordinator negotiates proffers and monitors implementation and performance of existing proffers. In FY 2012, TDM proffers were committed for new developments in Reston, Fairfax, Tysons Corner, Merrifield and Mount Vernon. Proffer monitoring continues for properties throughout the county.

A consultant study on integrating TDM into the land use and approval process is near completion. In June 2012, the recommendations on TDM reductions and parking strategies for transit-oriented development were to have been presented to the board. If adopted, the recommendations will lead to more effective TDM strategies and standardized agreements for TDM proffers. Preliminary findings were used to inform the TDM and Parking sections of the land use plan and zoning ordinance amendments approved for Tysons Corner.

b. Transportation Services Group Programs

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 to continue to reach tens of thousands of people who live or work in Fairfax County with messages about environmentally friendly transportation options. Accomplishments include:

²⁰ Transportation Information for EQAC Updated July 20, 2010, Dan Southworth, FCDOT

- 481 Fairfax County employers have implemented Transportation Demand Management programs--229 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 programs this year reached out to 651 new employers impacting thousands of employees/commuters.
- The RideSources Department received 1,296 on-line applications from commuters looking for car or vanpool matches. 230 program participants were reregistered. RideSources staff assisted the regional Guaranteed Ride Home program by adding 468 commuters.
- Within Fairfax County government, 205 employees participate in the Commuter Benefits Program, taking public transportation to work, and 1,474 eligible county employees teleworked at least one day a week. The County also provides reserved parking spaces for carpools and vanpools at some facilities.
- Information about transportation options such as the HOV lanes, RideSharing, Guaranteed Ride Home, car sharing, using bus and rail and teleworking is disseminated at outreach events throughout Fairfax County. FCDOT-TSG participated in 60 events such as town fairs, employer fairs and public meetings.
- The Fairfax County Transportation Services Group continues outreach efforts for BRAC construction and relocation efforts.
- Fairfax County is working with the VDOT mega projects construction and the Employer Solutions Team to provide transportation alternatives to employers impacted by both 495 Express Lanes and Rail to Dulles construction.
- The Fairfax County Community Residential Services Program has partnered with 155 multi-family complexes, area developers and civic organizations to promote telecommuting and the use of mass transit, carpools, vanpools, biking and walking instead of drive alone commuting.
- The Fairfax County Transportation Services Group supports Transportation Management Associations and other organizations including the Dulles Area Transportation Association, LINK of Reston Town Center, TyTran in Tysons Corner and the Transportation Association of Greater Springfield.
- The Fairfax Connector has made several improvements to reduce emissions: reducing auto shutdown from 30 minutes to 10 minutes; switching from tires filled with air to nitrogen; reducing the average age

of the Fairfax Connector fleet to 3.5 years; and all buses purchased since 2009 are classified as Mini-hybrids, for a total of 113 Mini-hybrids. The Maintenance and Service buildings at West Ox have been converted to landfill gas for heat.

c. Comprehensive Transit Plan/Transit Development Plan

FCDOT initiated a Transit Development Plan study in January 2008. This study, conducted by a consultant team led by ATCS, P.L.C., resulted in a recommended 10-year plan to enhance the efficiency and expand the coverage of bus transit in the county. The service recommendations were completed by the end of December 2009. Four additional tasks related to materials and processes used to provide information about Fairfax Connector bus service were completed by the end of June 2010.

The Virginia Department of Rail and Public Transportation requires that each transit agency in the Commonwealth prepare a six-year financially constrained TDP. DRPT accepted the FCDOT TDP, as the county effort was already well underway when DRPT imposed its requirement. An annual TDP update letter to DRPT, also part of the requirements, will be submitted prior to the end of June 2012.

FCDOT plans to initiate a five-year update to the original aspirational 10-year TDP in FY-2013. FCDOT staff has begun to formulate the scope of work for a task order contract to accomplish this update. This new 10-year document will be called the Comprehensive Transit Plan, to reflect its aspirational nature as well as to differentiate it from the financially-constrained six-year TDP required by DRPT. Major components of the CTP are expected to include:

- Data collection: review relevant prior and current studies; collect and analyze current operating data; collect and analyze stop-by-stop bus boarding and alighting counts.
- Public opinion research: conduct on-board passenger attitudinal survey; conduct telephone survey of county residents, primarily non-users of bus service; utilize other research tools such as focus groups.
- Public outreach: conduct meetings with elected officials; conduct meetings with public advisory groups; conduct meetings with local civic, business, and residential groups; conduct meetings with the general public; maintain project Web page on county site; utilize other Web-based tools.
- Service recommendations: review service changes since completion of 2009 FCDOT TDP; review performance of current services; recommend

changes to current services as appropriate; recommend new services as appropriate.

- Capital project/asset recommendations: review current capital projects and assets; recommend new capital projects and assets to support service recommendations.
- Implementation plan and TDP: develop financially constrained implementation plan for service and capital recommendations; draft TDP for DRPT based on DRPT requirements.

d. Roadway Improvement Program and Four-Year Transportation Program

In 2004 and 2007, voters approved bond referenda totaling \$165 million for roadway, transit, pedestrian and bus stop improvements throughout Fairfax County. Approximately \$71 million in bond funds were directed to roadway improvements and the county initiated a Four-Year Transportation Program. In addition, funds raised through the Commercial and Industrial Revenue Tax are utilized for transportation and transit improvement projects. Significant bond and C&I funds have been utilized to supplement federal and VDOT-managed projects in order to move them to construction. These include Stringfellow Road widening, Fairfax County Parkway/Fair Lakes Parkway/Monument Drive interchange, Route 29/Gallows Road intersection improvements, Centreville Road widening, and BRAC related roadway improvements such as the extension of Mulligan Road and widening of Telegraph Road.

Through FY 2012, all major and spot roadway improvement projects noted in the first 4YTP, managed by the county, have been completed. Of the major and spot roadway improvement projects noted in the second 4YTP which are managed by the county, two have been completed and six are under design. Additionally, 11 major and spot roadway improvement projects, funded by C&I revenue, are currently under design, and one is under construction.

The first 4YTP (2004 to 2007) did include several major roadway projects that are being managed by VDOT, which are not yet complete. The Beltway Express Lanes project is under construction and is scheduled for completion in December 2012; the Route 29/Gallows Road intersection improvement is under construction and is scheduled for completion in November 2012; the Stringfellow Road widening project is in the utility relocation phase; completion of construction is anticipated in December 2014.

The second 4YTP (2008 to 2011) included three VDOT-managed projects that are still in construction: the Springfield Interchange Phase VIII (part of the Beltway Express Lanes project) which is scheduled for completion in December 2012; the Telegraph Road interchange (part of the Woodrow Wilson Bridge project) which is scheduled for completion in 2013; and the Fairfax County Parkway/Fair Lakes Parkway/Monument Drive interchange, scheduled for completion in October 2013.

e. Bus Stop Improvement Program

A comprehensive inventory and study of all bus stops in the county identified undesirable bus stop conditions for priority action. The board identified \$2.5 million from the general fund and \$7.75 million in the 2007 Transportation Bond for improvements to the priority stops identified in the study. A total of 164 sites have been completed since the bus stop improvement program began. There are currently 27 sites in project development, 68 in design, seven in land acquisition and 25 under construction.

f. Bus Shelter Advertising Program

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 in FY 2013 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.

A total of 60 existing bus shelters have been retrofitted with advertising, and 60 sites are currently being scoped for new shelter and infrastructure improvements for FY 2013. The program has raised \$34,250 in revenue to date.

g. Richmond Highway Widening through Fort Belvoir

Richmond Highway will be widened from Telegraph Road to Mount Vernon Memorial Highway (approximately 3.4 miles) to six lanes with intersection improvements and provisions for bicycles, pedestrians and current transit; right-of-way will be reserved for additional future transit. The project is in planning stages, with FHWA currently managing NEPA compliance through preparation of an Environmental Assessment and Fairfax County preparing preliminary engineering documents in support of the EA. The design-build project will be administered by FHWA in cooperation with the county, VDOT and US Army Garrison Fort Belvoir. FHWA issued a Request for Qualifications in April 2012 and was to have issued a Request for Proposal for a design/build contract to qualified

contractors on completion of the NEPA documentation. Target award of a design-build contract is 4th quarter of 2012. 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. It needs to provide residential, commercial and transportation options for more people while increasing environmental stewardship.

As the concept plan becomes realized, the transportation infrastructure must be in place to accommodate those new living and working populations. With the county reaching build-out, the transportation options are constrained. Dense options, such as Metrorail and HOV, are enablers of future growth. Alternatives and choices, such as mixed-use development, transit-oriented development, telecommuting and flex-work, reduce the amount of transportation that is required.

Combining the land use projections with transportation planning is essential for the county to continue to grow and prosper in a way that is sustainable. By considering the land use and transportation facets of future decisions together, the county can continue to maintain a high quality of life. Conversely, when land use or transportation decisions are made in isolation, they will exacerbate the problems of build-out and congestion and negatively impact quality of life.

The county is well along this path with the designation of Urban, Suburban and Transit centers, as well as changes to the Concept Map for Future Development. The Board of Supervisors has adopted Comprehensive Plan guidance for several areas based on the recommendations of board-appointed task forces. The comprehensive results of these efforts have been impressive, and EQAC anticipates similar results from ongoing and future task force efforts. Equally important are

policy changes that encourage more comprehensive planning, such as Transportation Demand Management.

1. Programs, Projects and Analyses

This section reviews projects that have combined elements of land use and transportation via special studies or revitalization districts that incorporate mixed use and transit oriented development. They are in various stages, from conceptual to planning to implementation, and provide valuable lessons for future projects. A consistent thread that runs through them is the holistic integration of land use and transportation that has contributed to public acceptance and enhanced utility.

Fairfax County's role in the redevelopment and reinvestment of the older commercial areas specifically supports the county's 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 further provides an opportunity to replace or upgrade existing land uses and transportation networks with modern, more efficient systems that often have less environmental impact; a result, for example, can be reduced impervious surface on a site. The Comprehensive Plan and Fairfax County's Sustainable Development Policy for Capital Facilities provide guidance for incorporating the use of the U.S. Green Building Council's Leadership in Energy and Environmental Design standards in the design and construction of buildings and associated landscapes to use energy and water resources efficiently and to minimize short and long term negative impacts on the environment and building occupants. In general, recent planning efforts within the revitalization districts support compact, walkable, mixed-use centers which reduce the need for automobiles, increase access to transit and support other modes of transportation like bicycling, and walking.

2. Fairfax County Office of Community Revitalization

OCR facilitates strategic redevelopment and investment opportunities in Fairfax County's older commercial activity centers that align with the community vision, and improve the economic viability, appearance and function of these areas. Since 2007, Fairfax County's Revitalization Program, at the direction of the Fairfax County Board of Supervisors and through OCR, has taken on a countywide perspective beyond the designated Commercial Revitalization Districts/Areas of:

- Commercial Revitalization Districts - Annandale, Baileys Crossroads-Seven Corners, McLean, Richmond Highway and Springfield.
- Commercial Revitalization Areas - Lake Anne Village Center and Merrifield.

As such, OCR also provides assistance to activity areas and projects that will affect Fairfax County as a whole, such as Tysons Corner, the redevelopment of the Springfield Mall, Wiehle Avenue Metro Center, the north and east county governmental centers and the Laurel Hill Adaptive Reuse Project. For more information, go to www.fcrcv.org. Much of the discussion below regarding revitalization projects has been taken from this website and from guidance provided to EQAC directly from OCR.

3. Revitalization Projects

Tysons Corner Urban Center

By 2050, the 2,100 acre Tysons Corner 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. There are financial and economic costs and benefits associated with the redevelopment of Tysons; there are also non-monetary benefits such as cleaner air, better water quality, sustained economic vitality and improved quality of life that will result from the implementation of the vision for Tysons. To achieve this vision, it will be necessary to implement several 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, and redevelopment efforts within Tysons will provide opportunities to build upon this foundation.



The concept of transit-oriented development is being promoted for Tysons. TOD is a land use pattern which emphasizes compact, dense, walkable neighborhoods focused around transit stops. National studies have shown that TOD provides increased transit ridership. TOD also improves the efficiency and effectiveness of transit service investments significantly and has proven to lower annual household rates of driving for those living, working, and/or shopping within transit station areas. By providing safe and easy pedestrian access to transit, TOD has produced lower rates of air pollution and energy consumption. TOD can also reduce rates of greenhouse gas emissions. Further, aggressive transportation demand management programs, including parking management, are also 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 also has a unique opportunity to become a leader in environmental stewardship through protecting and improving the existing man-made and natural environments. Improvement through enhanced stormwater management and promotion of green buildings and a green network of parks and open spaces will all contribute to this stewardship.

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 in Tysons. These will be connected by a "greenway" - a network of trails for pedestrians and bicyclists. In particular, a park network, composed of a central signature park, a large multipurpose park, multiple urban parks, stream valley parks and trails will complete the Green Network and further the environment stewardship goal.

Tysons Partnership

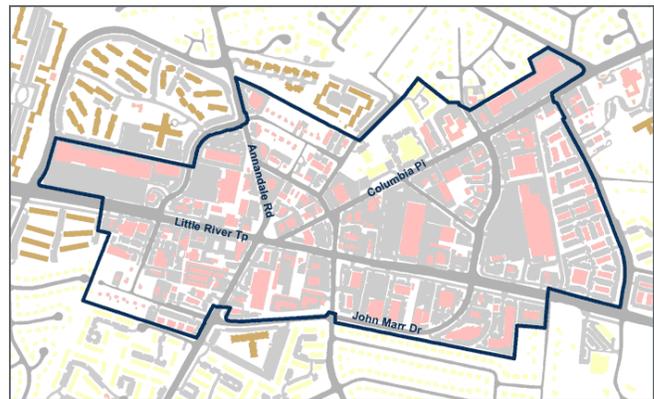
In 2010, OCR worked with stakeholders in Tysons to form the Tysons Partnership. The Tysons Partnership is dedicated to an inclusive and collaborative process to achieve the successful redevelopment of Tysons Corner into a pedestrian-oriented and economically vibrant urban place. The Tysons Partnership is a membership organization representing employers, landlords and developers, retail and hospitality representatives and resident organizations; it also has non-voting participation from the county, professionals/consultants and neighbor organizations. The Tysons Partnership is organized into six councils that address: Marketing and Branding; Transportation; Public Facilities and Community Amenities; Urban Design and Planning; Finance; and Sustainability Initiatives. Since its incorporation in 2011, the Tysons Partnership has continued to focus efforts on transportation (circulator, grid of streets), transportation infrastructure financing, urban design and the provision of public facilities.

Tysons Corner Urban Design Guidelines

In January 2012, the BOS endorsed the [Tysons Corner Urban Design Guidelines](#) that provide area-wide 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's 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 within Tysons. The guidelines have been used successfully by each of the 15 pending applications within Tysons to inform the siting, building design and master planning of each project.

Annandale CRD

The 200 acre Annandale CRD is located around the junction of Columbia Pike and Route 236. The Annandale business core is a culturally diverse hub that contains more than two million square feet of commercial space, including shops, restaurants and service businesses that draw customers from throughout the Washington, D.C. metropolitan area.



Annandale Community Business Center (CBC) Plan Amendment

Informed by previous analysis and the May 2010 Annandale Transportation Study that provided transportation plan recommendations, the Fairfax County Comprehensive Plan, adopted in July 2010, outlines several objectives related to future redevelopment of the Annandale CBC, including all of the Annandale CRD. The Plan uses a new form-based approach that provides flexibility by using building form and height to guide development instead of the more traditional floor area ratios. The land use guidance recommends a proactive and comprehensive transformation of the existing, suburban form into a walkable, urban and active mixed-use center. Innovative urban design, streetscape, placemaking and context-sensitive techniques are also included. These techniques will enhance the pedestrian presence, integrate a diversity of land uses and create a distinct built form that better relates to the streetscape. The built form will relate to a network of usable and public urban plazas and parks at a variety of scales and functions and to planned transit services and facilities. These design and transportation elements will contribute to and establish a cohesive and unique identity; together they will support revitalization efforts in Annandale.

Annandale Urban Design Guidelines

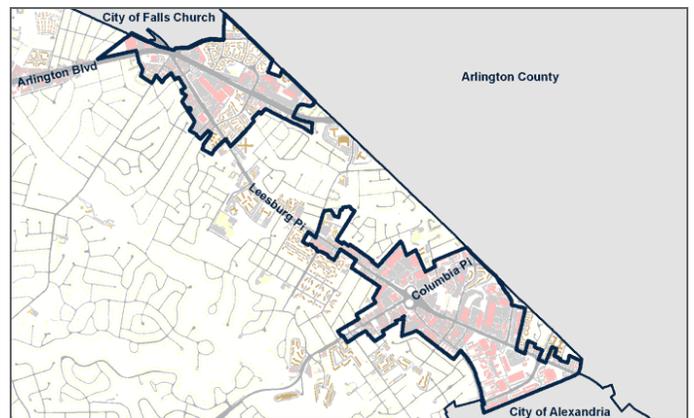
In May 2011, OCR in collaboration with the Annandale Central Business District Planning Committee produced the Annandale Urban Design Guidelines to provide design direction to enhance the visual quality of the Annandale CBC. The organization of the guidelines corresponds to the two elements of Plan’s urban design concept: 1) Building and Site Design, and 2) Streetscape Design. The guidelines expand upon the urban design concept by breaking down these two elements into their individual components and by providing specific design suggestions for incorporating each component into development proposals.

The guidelines will be primarily used by an owner or developer of a property within the CBC, who is considering developing a new building or improving an existing building.

The guidelines conclude with a list of resources that should be referenced during the design, development review and permitting processes.

Bailey’s Crossroads/Seven Corners CRD

The 700-acre Bailey’s Crossroads/Seven Corners CRD is located at the eastern edge of Fairfax County. The Bailey’s Crossroads/Seven Corners CRD includes two dynamic business centers which capitalize on their close proximity to Arlington County, the City of Alexandria, and downtown Washington, DC. Commercial and retail activity is concentrated along Columbia Pike (Route 244) and Leesburg Pike (Route 7). The core of the district includes Skyline Center, national chains and a diverse array of locally owned stores and restaurants. Neighborhoods of single-family homes and apartments house the diverse population. Great redevelopment opportunities exist for Bailey’s Crossroads and Seven Corners; a more urban character that is more pedestrian and transit accessible is envisioned.



Bailey’s Crossroads CBC Comprehensive Plan Amendment

On July 13, 2010, the BOS approved the Bailey’s CBC Plan Amendment, which covers approximately 530 acres, including portions of the CRD. This Plan Amendment sets forth a concept for future development that encourages a transition from a predominately retail environment to one that balances retail, office, residential, civic uses and open space. The plan also supports redevelopment of a “Town Center” to take advantage of the proposed transit

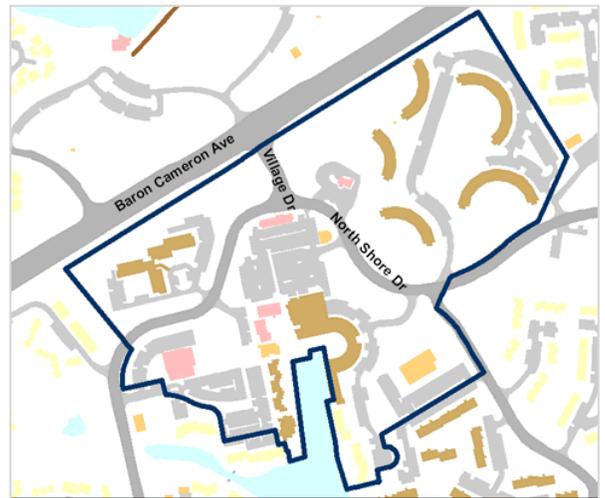
stops for the Pike Transit route from the Pentagon to Skyline. The recommended transportation improvements are intended to balance land use with infrastructure and to provide intermodal connectivity. Guidance regarding open space and urban design is also provided in the new plan.

Seven Corners

Fairfax County is undertaking a re-assessment of the Seven Corners area. In spring 2012, local residents, property and business owners, community and civic organizations and others were invited to participate in an open discussion. A series of public workshops explored the opportunities and challenges facing Seven Corners and provided a forum for the community to share its ideas about the future of the area. A planning process is now getting underway that provides the community with an opportunity to develop a vision for the future and to formulate recommendations and strategies for achieving the vision. It is envisioned that these recommendations will ultimately be incorporated into the Comprehensive Plan.

Lake Anne Village Center CRA

The 45-acre LAVC CRA, which includes the Historic Overlay District, is bounded by Baron Cameron Avenue (Route 606) to the north, Lake Anne to the south, North Shore Drive to the west and Moorings Drive to the east.



Crescent Apartments Property Redevelopment

The county is seeking to redevelop the county-owned Crescent Apartments property located in the LAVC through a solicited Request for Proposal under the Public-Private Education and Infrastructure Act of 2002. It is expected that a developer will be selected in FY2013.

In addition to providing a significant number of new residences, the redevelopment will preserve the existing 181 affordable housing units and create additional workforce housing. While the ideal scenario would be for adjacent land owners to participate collectively in consolidation, land assembly and redevelopment, this is not a prerequisite for the success of the Crescent redevelopment. It is expected that the redevelopment of the Crescent property will be an innovative and imaginative mixed-income residential development that will:

- Embrace the objectives of the Comprehensive Plan to bring more residents and day-time employees to Lake Anne to promote a vibrant community where people can live, work and play.
- Create a development that complements the existing Lake Anne community.
- Result in a high-quality development in terms of site design, building design and materials and appropriately sited open space.
- Ensure that diverse housing options exist in Lake Anne, including senior, workforce and affordable housing.
- Enhance pedestrian and bicycle connections throughout the LAVC area.
- Result in an innovative development in terms of sustainable energy efficiency and conservation of resources.

Commercial Reinvestment Plan

Completed in April 2011, the Commercial Reinvestment Plan provides short and long term reinvestment strategies for LAVC non-residential uses which are intended to increase the viability of the LAVC as a mixed-use center and to facilitate the longer-term community goal of redeveloping the property adjacent to Washington Plaza with compatible mixed-use development. CRP recommendations pertaining to administration, organization and marketing events and promotions are being successfully implemented by stakeholders. Additionally, the CRP includes a strategy to establish the LAVC as a regional leader in sustainable development through replacing or expanding the Reston Lake Anne Air Conditioning Corporation's closed chilled water cooling system with geothermal technology, or other sustainable energy systems, and by improving the energy efficiency of existing buildings with retrofit of their structural and mechanical systems. These improvements will achieve multiple goals, including a smaller carbon footprint, lower operating and maintenance costs and enhanced visibility as a community on the forefront of innovation in the use of green technology.

McLean CRD

The 265-acre McLean CRD is centered at the intersection of Chain Bridge Road and Old Dominion Drive in Fairfax County, Virginia.



Streetscape Projects

Focused around the key intersection of Chain Bridge Road and Old Dominion Drive, the McLean Utilities project broke ground in summer 2012. The removal of overhead utility lines along Chain Bridge Road to Laughlin Avenue, and extending along Old Dominion Drive to Center Street, will improve the McLean CRD physical character and reliability of service. The project will be coordinated with the Chain Bridge Road Corridor Enhancement Project which will redesign the Chain Bridge Road/Old Dominion Drive intersection and construct pedestrian and streetscape improvements.



Current Conditions



McLean Utilities and McLean Signal Replacement Projects Concept

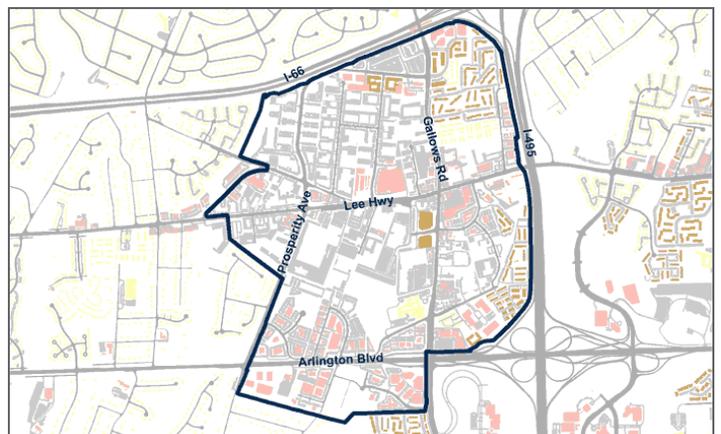
Mast arms and signals will be installed at the intersection of Chain Bridge Road and Old Dominion Drive as part of the McLean Signal Replacement project.

A design contract to complete streetscape improvements in the public right of way of Chain Bridge Road and Old Dominion Drive is anticipated to be awarded in 2012. The streetscape will include new pavers, lights, landscaping and other options which are acceptable to VDOT maintenance and the McLean Design Standards.

The design of a McLean Gateway Sign is complete. Funding to construct the gateway sign and landscape the median along Old Dominion Drive at the entrance to the McLean downtown area is pending approval.

Merrifield CRA

With the Dunn Loring-Merrifield Metrorail station and regional and local access from I-66, I-495, Route 29, Route 50 and Gallows Road, the 775-acre Merrifield



CRA is one of the most centrally located and easily accessible areas in Fairfax County.

The Merrifield Suburban Center

On June 11, 2001, the BOS adopted an amendment to the Comprehensive 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 a town center south of Route 29. A new “Main Street” would connect the two core areas.

Merrifield is envisioned to be a thriving mixed-use area attracting new residents, while also supporting the surrounding existing neighborhoods. This evolution is under way as recent mixed-use developments have brought additional residential, retail and office space while also providing amenities such as improved pedestrian connections and open space with the construction of Merrifield Park. On April 27, 2009, the BOS created the county’s first Community Development Authority for the proposed Mosaic at Merrifield development.



Mosaic District CDA

In 2011, OCR continued to lead a county staff and consultant team that partners with the developer (Edens) of the Mosaic at Merrifield development. The Mosaic District CDA is the first and only CDA in the county.

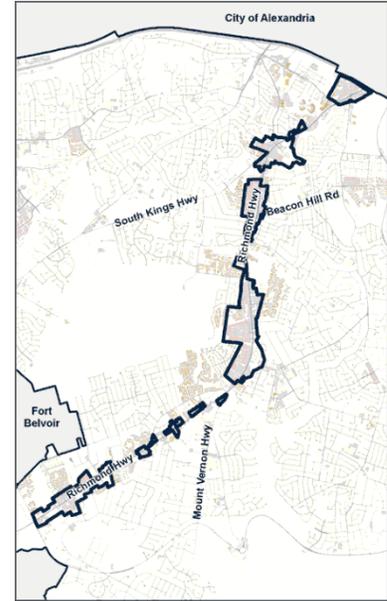
In June 2011, bonds were sold to:

- Fund a 30 million dollar portion of the public facilities to be constructed on the site through a 30-year bond to be issued by the CDA, whose debt service will be paid by a self-assessment.
- Fund a 42 million dollar portion of the public facilities to be constructed on the site (road improvements, parks and a small portion of the parking garage) through a 22-year bond also issued through the CDA whose debt service will be paid through incremental real estate tax revenues. Liability for the debt service will be secured by the CDA, not the county.

The project is under construction, has numerous signed tenant leases, has a number of sales contracts on the townhouse portion, and, as of the date of preparation of this report, has begun to open.

Richmond Highway Corridor CRD

The Richmond Highway CRD is located along a 7.5-mile segment of Richmond Highway from the Capital Beltway in the north to Fort Belvoir in the south. The Richmond Highway CRD, which encompasses 700 acres, is not continuous; it consists of six CBCs which include: North Gateway; Penn Daw; Beacon/Groveton; Hybla Valley/Gum Springs; South County Center; and Woodlawn. Each commercial area can generally be characterized as predominately local-serving retail, with a mix of stand-alone retail as well as strip commercial centers.



Southeast Fairfax Development Corporation (SFDC)

Since 1981, the SFDC has had a Memorandum of Understanding with the Fairfax County BOS, which outlines the goals of the SFDC and the terms and conditions for its receipt of funds from the BOS. The SFDC is a public/private non-profit economic development corporation established to guide and assist businesses with locating or expanding onto the Richmond Highway corridor and to work with county efforts to facilitate revitalization of the Richmond Highway corridor. The SFDC is focused on three key areas: marketing; economic restructuring; and urban design.

Penn Daw Special Study and Comprehensive Plan Amendment

In May 2010, the BOS authorized a Penn Daw Special Study Plan Amendment to develop a final concept and recommend Plan language for a 15-acre land area west of North Kings Highway and south of School Street, as well as the adjacent triangular-shaped land area located east of North Kings Highway and west of Richmond Highway.

The task force completed its work in February 2012. On April 10, 2012, the BOS adopted an amendment to the Comprehensive Plan that adds an option that would allow a maximum of 735 dwelling units and a minimum of 40,000 square feet of retail development. The redevelopment option supports the goal of directing growth along the corridor to the CBC and limits commercial encroachment into the surrounding stable neighborhoods.

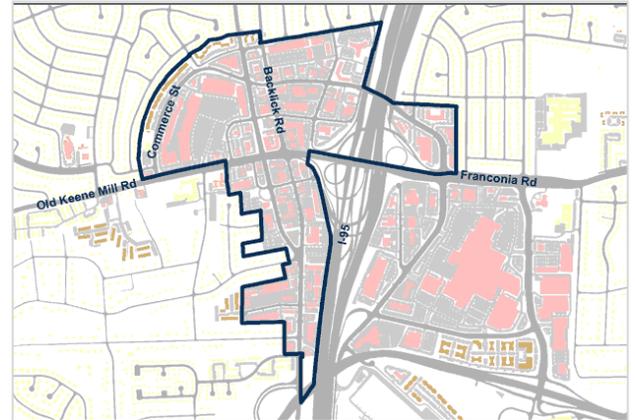
Residential Development on the Rise

There has been an uptick in residential development activity on the Richmond Highway and Huntington Avenue corridors, all at medium to higher densities. In the Penn Daw CBC, as of the date of preparation of this report, on one site, a zoning case is currently pending and, on another site, an out-of-turn Plan

Amendment has been authorized to allow for multifamily residential development in the CBC. Townhouses and multi-family residential was recently approved for a site at the intersection of Buckman Road and Richmond Highway. Lastly, a rezoning application is pending for multi-family, office, retail and hotel development on a site across from the Huntington Metro station, and there are other sites along the Huntington Avenue corridor that have recently been replanned or may be replanned to allow for additional multi-family residential development.

Springfield CRD

The 250-acre Springfield CRD consists of a variety of retail, commercial, office and residential activities clustered at the Franconia Road - I-95 Interchange, accessed via the Old Keene Mill Road, Backlick Road and Commerce Street roadway network. The rebuilt I-95 Interchange, ramps and Metro access at the Franconia-Springfield Transit Station provide the Springfield CRD tangible market benefits attributed to its prime location and regional transportation advantages.



The transformation of the central business area into a walkable village town center convenient to well-located and maintained neighborhoods continues to advance. A number of older and/or vacant retail structures have been removed and replaced with new uses or updated structures, such as a Homewood Suites extended stay hotel and new eating establishments (e.g., Panda Express, Chick-Fil-A, and Noodles & Company). Older apartment buildings are expected to be renovated with new market rate and workforce housing. The new vision and redevelopment opportunities were adopted in the Springfield Connectivity Plan Amendment, approved by the BOS in January 2010. The Comprehensive Plan changes included raising land use and intensity within the CRD to spur redevelopment, new transportation infrastructure improvements and detailed guidance with respect to urban design, streetscape and placemaking concepts.

Springfield Mall

Springfield Mall, approved by the BOS in 2009 for redevelopment, is currently moving forward with initial redevelopment plans for the site. The current phase is focused on: renovation of the interior retail space; 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 renovation of the 2.1 million square foot Springfield Mall as well as 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.

Community Education and Outreach

OCRences

OCR produces a quarterly newsletter to inform community and industry stakeholders of CRD/CRA and countywide revitalization activities and opportunities created by these activities.

Community Outreach

OCR conducts public outreach programs to educate and inform stakeholders and to obtain feedback regarding revitalization activities and opportunities in Fairfax County.

www.fcrcv.org

OCR's website provides information and resources pertaining to the CRD-CRAs, Tysons Corner and other catalytic projects.

4. Region Forward Coalition

In 2011, the COG 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. 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 full Coalition has met four times in the past year.

The Coalition established several task forces to focus on specific implementation needs, including the Baseline Performance Team to monitor the targets and indicators; the Complete Communities Team, working with the Planning Directors to update the Regional Activity Centers maps; and the Impact Team, working to identify specific current opportunities or needs.

The Baseline Performance Team, working with COG and TPB staff, has completed the first Region Forward Baseline Progress Report, assessing the region’s work to achieve the 28 adopted goals, targets and indicators of Region Forward.

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, which is both reflective of concern for sustainability and efficiencies in the provision of infrastructure and facilities and consistent with the Washington Council of Governments Region Forward 2050 plan (a comprehensive vision for the National Capital Region that sets forth regional goals, a compact agreement, and targets and indicators to measure success related to accessibility, sustainability, prosperity and livability). Fairfax County is expected to increase both population and jobs by about 225,000 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 perceived. By continuing to integrate land use, transportation and sustainable planning, the county can change and grow without sacrificing our quality of life.

F. STEWARDSHIP

The array of forces that influence, drive and guide transportation and land use, including individual and corporate interests and behaviors, government regulations and processes, urbanization, climate change and cultural behaviors are highly interactive and complex, but manageable. This report focuses predominantly on the government role in managing these forces, but individual and corporate activities and behaviors are the predominant factors in the success or failure of environmental stewardship.

Fairfax County residents have a huge selection of opportunities to engage in environmental stewardship ranging from personal activities in their daily lives and work, to active participatory citizenship, to serving as a volunteer with government or non-profit organizations. A well-informed, active citizenry is fundamental to good government and livable communities – everyone should know how his or her government operates, what we as a community are up against, where our taxes go in “one of the best-managed jurisdictions in the region” and exactly what government functions are diminished or lost with revenue losses. The county provides extensive opportunities for residents, employers and employees to learn about issues and the functions of government and extensive opportunities to participate. The Fairfax County website is a wealth of well-organized information that can serve as a starting point for stewardship resources and to get involved. The county also performs extensive public outreach for a wide array of programs and development

projects, bolstered by project specific efforts like the Reston Land Use College and the Tysons Task Force.

1. Stewardship Responsibilities and Opportunities for Individuals

a. Transportation

Current transportation challenges in the county require critical stewardship activities from every household. According to the *2010 American Community 1-year estimate survey, Area: Fairfax County*²¹:

Of the 580,604 workers, 16 years and over, who live in Fairfax County:

- 418,778 or 72.1 percent drove alone to work in a car, truck or van.
- 59,285 or 10.2 percent commuted via carpool or vanpool.
- 13,563 or 2.3 percent walked to work.
- 8,619 or 1.5 percent used other means, including bike.
- 29,070 or 5.0 percent worked at home. (This number may not fully represent the true number of teleworkers in Fairfax County.)
- 51,279 or 8.8 percent used Public Transportation (excluding taxicabs).

Everyone who uses transportation systems in the county can protect and nurture a healthy environment by assessing their needs and habits and looking into the growing number of alternatives to our current traffic volumes. Some examples of these alternatives, from the county website, include the following:

Bike Program: In 2006, the Fairfax County Board of Supervisors approved the comprehensive bicycle initiative--a program committed to making Fairfax County bicycle friendly. The program addresses the needs of bicyclists through construction, planning, and public information.

Community Residential Program: The Fairfax County Community Residential Program partners with residential developments, multi-family complexes and associations to promote use of alternative modes of transportation including public transit. CRP is dedicated to encouraging people who live, work or commute through Fairfax County to use mass transit, carpools, vanpools, walking, biking or teleworking instead of driving alone.

Employer Services: The Fairfax County Employer Services Program helps businesses and employees find transportation solutions that will

²¹ <http://www.fairfaxcounty.gov/demogrph/censusacs.htm>

not only make companies more successful, but will improve the economic vitality and quality of life for the entire region. The Employer Services specialists work on-site with businesses to help them realize the bottom-line benefits of commute alternatives.

Guaranteed Ride Home: The Guaranteed Ride Home Program is for commuters who regularly take the bus, rail, vanpool, carpool or bike or who walk to work. The program is designed to serve commuters who are worried about how they'll get home when an emergency arises.

Pedestrian Program: Through FY 2012, Fairfax County has designated \$58 million in federal, state and county funding to construct pedestrian improvements in high-priority areas of the county. The program includes construction of new or missing segments of sidewalks and/or trails and pedestrian safety and accessibility improvements at intersections around the county. From FY 2008 through FY 2011, the county completed construction on 70 sites/segments, with three others under construction and another 38 under design.

Ride Sources: The RideSources Program is operated by the Fairfax County Department of Transportation and is a member of Commuter Connections. The RideSources program provides commuters with free ridesharing information, including ridematching assistance to form or join carpools or vanpools.

Travel Training - MATT Bus: This is a unique Fairfax Connector bus that has been renovated and designed for training senior citizens to travel safely and independently on regional transit systems.

The county also offers periodic events or opportunities for commuters to test alternatives. For example, in September 2010, Fairfax County participated in Try Transit Week, a statewide event sponsored by the Virginia Department of Rail and Public Transportation to encourage everyone to avoid driving solo and give transit options such as bus, rail, carpools, vanpools and telework a try. Car Free Day is an international event celebrated every September 22 in which people are encouraged to get around without cars and instead ride a train, bus, bicycle, carpool, subway, vanpool, walk or telework. Car Free Day is open to all commuters, students, homemakers and seniors in the Washington metropolitan area.

b. Land Use

Residents may practice stewardship with regard to land use in three significant arenas: first is on their own properties, condo/homeowners association properties or apartment complexes; the second is in regard to development and revitalization activities in the county; and the third is

through volunteering with organizations that have a stewardship mission. Residents can all do their parts at home by becoming aware of the impacts of their activities and the buildings in which they live. Residential stewardship may be as simple as planting a tree or small garden or choosing more efficient appliances and as complex as retrofitting with green features, reducing impermeable surfaces or creating a certified wildlife habitat.

Land use issues, in terms of development and revitalization, are generally focused through the county's planning and zoning, community revitalization and public works programs, and the county website provides an excellent starting point. LDSnet, which provides access to information in the Fairfax County Land Development System is comprised of the Zoning and Planning System ([ZAPS](#)) and the Plan and Waiver System ([PAWS](#)). Through LDSnet, it is possible to search for individual zoning applications and/or plans and studies submitted to the county to perform land-disturbing activities. In addition, the LDS database can be searched for zoning applications or construction plan submissions meeting any combination of the thirty-one search criteria. The Northern Virginia Soil and Water Conservation District is an excellent starting point for residents wishing to learn more about stewardship practices and is also an entrée to other stewardship organizations.

Fairfax County provides a number of online tools for residents to use to learn more about their own properties and as well as countywide efforts. These include county land use applications such as [iCare—Real Estate Assessments](#), the [Land Development System](#), and [My Neighborhood](#).

Volunteers are increasingly crucial to environmental stewardship, and residents and other volunteers can broaden their knowledge while serving. There are a wide variety and number of environmental organizations from which to choose and the Fairfax County website, at <http://www.fairfaxcounty.gov/volunteering/> and Volunteer Fairfax, at <http://www.volunteerfairfax.org> are good places to start.

2. Stewardship Responsibilities and Opportunities for Corporations

The Fairfax County Economic Development Authority held a conference in June 2009 called “The New Urban Economic Model: The Transformation of Fairfax County.” The conference was held to “highlight what suburban communities can and should do to be well-positioned as the strong business communities of the future.” According to a national survey commissioned by EDA in preparation for the conference, of the respondents who work in the suburbs, nearly half (47 percent) wish that their working environment offered more, such as: more parks and other open spaces nearby; a broader array of employers and work environments; access to convenient public transportation;

greater cultural diversity; a more walkable environment; and proximity to housing options. Fairfax County already has many of these characteristics; however, as this EQAC report indicates, these characteristics may be in jeopardy without informed and concerted environmental stewardship.

As environmental stewardship has become more mainstream, the awareness and practice of corporate social responsibility have developed to address employee sensibilities, community relations and the “double bottom line.” There are tremendous opportunities in Fairfax County for partnerships across the sectors to join resources, interests and expertise to protect and enhance our quality of life. In every major development, and many minor ones, opportunities exist for the environmental and social services agencies to work with EDA, developers, the real estate industry and future corporate tenants in new or revitalized developments. Tysons, the Dulles Corridor and other transportation oriented development projects are good examples of success and foundations for extending strategic stewardship partnerships. Issues such as affordable housing and an aging population in the county have land use and transportation components; these can be folded into broader land use and transportation issues to create broader solutions.

The involvement of business leaders in crafting a set of locally supported solutions would seem to be a very important element in the future. At the strategic end, business leader actions take the form of information development and communication with the public and decision-makers to emphasize the role of transportation in the state and regional economy. On the tactical end, business and community leaders can make the case for small-scale improvements that may not be evident to the operating agencies. And they can support individual workers who wish to choose carpooling, public transportation, flexible work hours, telecommuting or other route or mode options.²²

G. ACCOMPLISHMENTS

As the chapter authors have participated in Land Use and Transportation discussions over the past 10 years, the county has continuously impressed us with consistency, foresight and progress in the face of economic and political challenges. While there are still lots to be done, we are pleased to recognize that several recommendations have been completed at the same time that several very long term projects are coming to fruition.

²² 2009 Urban Mobility Report, Texas Transportation Institute, July 2009

1. 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 this year. 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.

Along the same lines, a fascinating lecture series that discussed changes to the county in the past, present and the future was sponsored this year by the Chairman of the Board of Supervisors, the Fairfax Federation and the Chamber of Commerce. The series is available for replay at:
<http://www.fairfaxcounty.gov/chairman/evolution.htm>.

Both of these resources are a useful reference for those working with the Comprehensive Plan and participating on boards, councils and task forces. EQAC has specific recommendations along these lines below.

2. 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:
<http://www.fairfaxcounty.gov/dpz/comprehensiveplan/compplanmap.htm>.

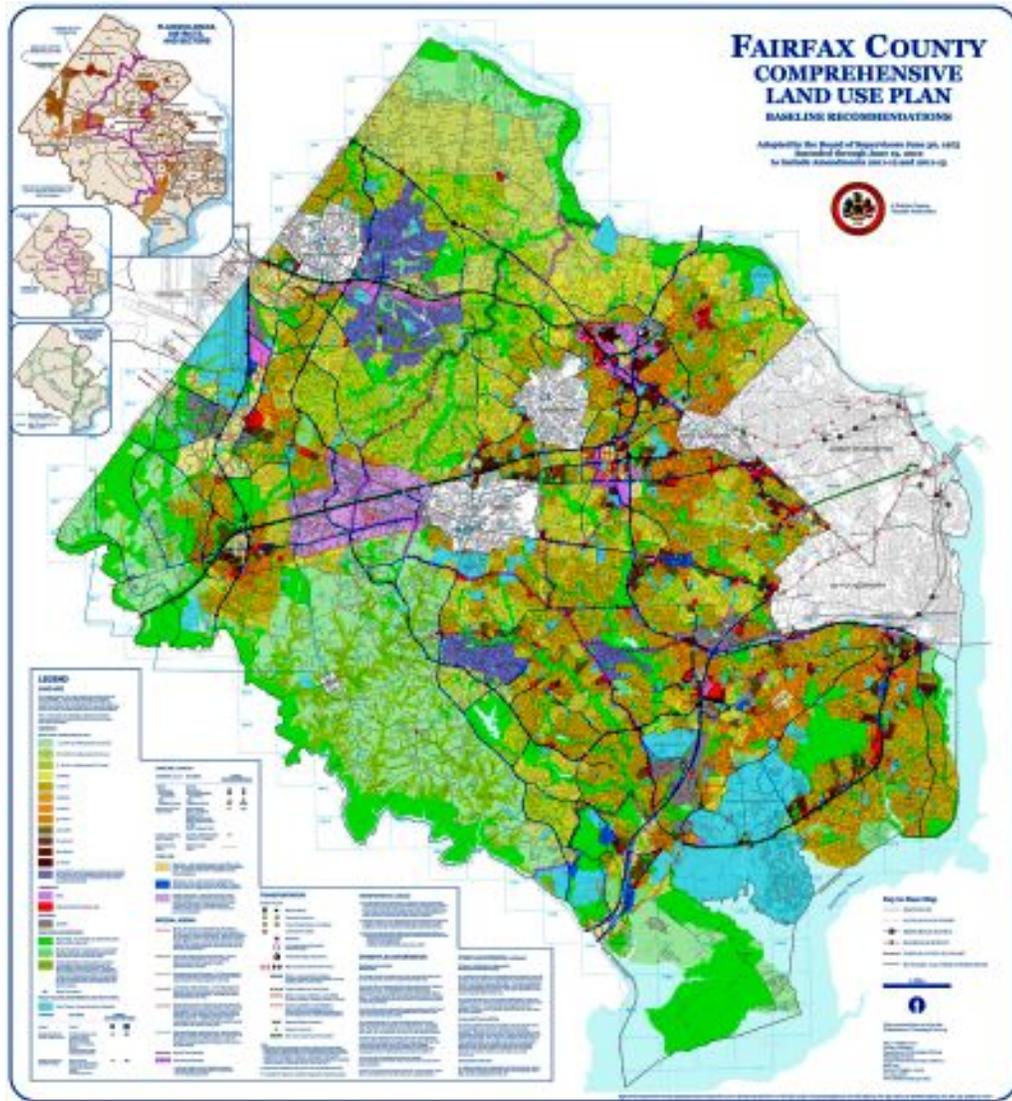
A copy of this map is shown as Figure II-9.

Last year EQAC recommended that changes to the plan be quickly incorporated in 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.

3. Merrifield Town Center Opening

This year also saw the long awaited opening of the Merrifield Town Center. Merrifield has long held potential as a transit oriented hub. The first concept planning for the new projects occurred nearly 18 years ago as a mixed-use transit oriented barbell. The new Mosaic development along with the Halstead Complex and the Trammel Crowe development at Dunn Loring Metro are the anchors for an exciting community. EQAC commends the county and its partners for revitalizing this community from a sleepy intersection into a modern transit oriented development. Below we have recommendations to capture the lessons from Merrifield for other revitalization efforts.

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 designing all new construction projects to meet at least LEED Silver certification. As of October 2012, the county had a total of 29 green building

projects, 14 of which attained certification (12 under the LEED program and two under the Green Globes program). The other 15 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 encouraged to see that seven complete projects (including the VDOT Administration Building) exceeded their LEED goal level and were awarded Gold certification. This confirms that green buildings can be affordably constructed with long term savings. We hope that the county will further its leadership with some projects striving for Platinum certification.

H. COMMENTS AND ONGOING CONCERNS

1. Progress on Major and Mega Projects

The county continues to see progress on mega projects. These include the 495 Express Lanes and Beltway widening, the Dulles Corridor Rail Project and BRAC. EQAC has made recommendation 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 will provide new options for transportation across the county. 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.

2. Improve Transit Utilization

EQAC encourages the county to continue working to improve transit utilization through a systematic plan that includes multiple options within a community. For example, the Virginia Railway Express Burke Centre EZ Bus provides a convenient alternative to commuting to the Burke Centre VRE station. This can be combined with pedestrian improvements, more connector bus options and biking trails that together provide a diverse transportation plan. Next year, EQAC plans to conduct a deeper analysis of transit and alternative transportation options.

3. 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:

- Continue to expand options for affordable housing by investing and partnering appropriately in locations that will need increased affordable options as the economy rebounds.

- 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.
- Coordinate with agencies and businesses to inform prospective/new workers of opportunities for desirable commutes and local housing amenities.

4. Comprehensive Data Holdings and Models

EQAC has advocated for public access to GIS tools and commends the county for providing public access to many sources; EQAC recommends that this effort be continued as appropriate and feasible. We look forward to the next iteration of My Neighborhood and Virtual Fairfax. In addition, EQAC commends the county for continuing to update the ortho imagery, oblique imagery and planimetric data. These have proven useful for many applications and are on a practical refresh cycle.

While the base data have been carefully maintained, EQAC is still concerned about macro changes to the county and with the tools available to analyze macro effects and to model future scenarios. Some particular capabilities to consider:

- Model the effect of a Comprehensive Plan or zoning change against a larger region, in particular stormwater impact and transportation congestion.
- Forecast future growth and align planned developments with economic viability and housing options.
- Develop a deeper understanding of mixed-use development that combines residential and non-residential uses in the same parcel. This is becoming common in the new revitalization projects and we expect that other major urban counties and cities have developed technology and processes for incorporating mixed-use developments into their comprehensive plans.

I. RECOMMENDATIONS

1. Comprehensive Planning

Background

The Fairfax County Comprehensive Plan is a fundamental document for Fairfax County that has been continuously updated as the county has grown and transitioned from a rural/suburban county to a mixed-use urbanizing community. There have been two comprehensive plan reviews, first the “*State of The Plan, An Evaluation of Comprehensive Plan Activities between 1990-1995 with an Assessment of Impacts*”

through 2010” (published in 1996) and more recently the “*State of the Plan, An Evaluation of Comprehensive Plan Activities between 2000-2010*” (published in 2012.) These important documents explain the changes happening over the past 37 years and how the county has responded to the changes and expanded our potential to continue growing into the future.

In particular the summary and conclusions of the latest report bear repeating:

“Taken as a whole, amendments to the Area Plans volumes of the Comprehensive Plan may be grouped into a few themes. Most prominent among these are the following:

- *Encouragement of intensity and land use flexibility in mixed use centers;*
- *Protection of low density residential neighborhoods; and*
- *Retention of industrial areas.*

...

Future planning challenges are likely to continue to become more complex. The Comprehensive Plan will need to balance new development and redevelopment with maintaining and improving the quality of life for all residents. In terms of the environment, improving the quality of life will include implementation of countywide stormwater management plans and recommendations. In terms of the economy, continued efforts to increase the supply of housing in activity centers are needed to improve the jobs/housing balance. Lastly, in terms of the community, challenges include continuing to extend the county’s system of trails, parks and recreational facilities.”

EQAC endorses the conclusions of the evaluation. EQAC also endorses efforts to focus on revitalization through the Office of Community Revitalization (established in 2007) and the Fairfax Forward project that succeeds the APR Retrospective to update the model used to plan future development.

Recommendation

EQAC recommends that the county prioritize the Fairfax Forward work plan. EQAC also recommends that the county establish a stakeholder task force to work with the Fairfax Forward team to build familiarity and support for the new approach.

EQAC also recommends that the county continue to refine and formalize process for revitalization, especially in mixed-use centers. There are several success stories across the county, such as Merrifield, that have been through a sustained transformation and have a wealth of lessons learned. Topics such as transportation modeling, land consolidation, public/private partnerships, mixed use development and transit connectivity apply across the county. Capturing these techniques into processes to reapply will increase the success of the new revitalization efforts.

This formalization should include incorporating GIS technology directly into the planning process and expanding the use of modeling to help understand future conditions and scenarios.

2. 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 the county push to have all land use and parcel based data tied into the GIS. We are looking forward to the proposed Land Development Information data warehouse to continue integrating information through GIS.
- 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.
- a. IPLS has made great strides with the housing base, but other systems need to continue to be brought up to date. New nonresidential pipeline data should be incorporated in IPLS. This would be very useful for forecasting and analyzing with existing data. We understand this may require changes to the Land Development System.

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