



## TRANSPORTATION

Tysons is located at the intersection of two major regional highways, the Capital Beltway (I-495) and the Dulles Toll Road (DTR), and centers on the intersection of two major arterials, Leesburg Pike (Virginia Route 7) and Chain Bridge Road (Virginia Route 123). These major highways and arterials, as well as other arterials, have historically served the vast majority of trips to, from, and through the Tysons area. Although extensive, this roadway network has become increasingly strained as the Washington, D.C. region has grown and Tysons has become one of the largest office and retail markets in the country. Planned road improvements will abate some of the increase in traffic congestion in and around Tysons but this strategy is not sustainable in the long term. Right-of-way limitations, the high cost of adding highway capacity, and limits in the accommodation of vehicle traffic in a dense urban environment, such as what is planned for Tysons all constrain the ability to widen and expand the roadway network.

~~In 2010, the vast majority of people traveling to, from, within and through Tysons do so using private automobiles. While still accommodating automobiles, the transportation system in the future must give people choices for making these trips to, from, within and through Tysons. Providing choices requires a balanced transportation system that: a) provides attractive public transportation connections between Tysons and other locations; activity centers; b) moves people within Tysons via an enhanced connected network of walkable streets, bike lanes, and a robust transit network; and c) moves automobile traffic more efficiently, to, from, and within Tysons. The planned extension of the Metrorail system, with four Metrorail stations in Tysons, offers an opportunity for to create a well-balanced, interlinked, multimodal transportation network in Tysons.~~

To be successful, a transformation of the Tysons Transportation System, at the fundamental level, is required. This is anticipated to take many years, but its implementation will result in a vastly improved network that will accommodate all modes of travel. Remaking Tysons into a transit-oriented, urban center requires a balance among safety, mobility, community and environmental goals in all planning for Tysons. For example, streets help define the quality of the public realm, supporting the needs of pedestrians, bicyclists and transit users. In many circumstances, creating a livable and walkable place will require that the needs of pedestrians, bicyclists, and transit users an effective circulation system be given preference in

~~many circumstances over the need to move people exclusively by automobile. Streets help define the quality of the public realm in addition to accommodating vehicular traffic. Remaking Tysons into a great transit-oriented urban center will require a balance among safety, mobility, community and environmental goals in all transportation planning for Tysons.~~

~~In order to be successful, a fundamental transformation of Tysons' transportation system will be required. In order to complete this transformation, several transportation elements must be created and/or enhanced. They include the following:~~

- ~~• The current superblock street network should be transformed into a grid system of smaller, connected streets to provide alternative pathways for traffic flow. This will also provide a safe, accessible pedestrian and bicycle environment.~~
- ~~• Streets should become "complete streets," designed to create a sense of place, and promote walking, and the use of bicycles and transit services.~~
- ~~• Regional transit service should continue to be provided. The transit system will serve regional trips through with Metrorail and buses to Tysons.~~
- ~~• For trips within Tysons, a Circulator System that allows frequent, quick and inexpensive movement, as well as easy connections to regional transit service, systems is needed. The existing Circulator System will initially be operating when Metrorail opens. Initially it will currently operate on-street, in mixed traffic. In future years, the Circulator System will contain with segments and later on-street that will operate on its own rights-of-way.~~
- ~~• A neighborhood feeder bus network should connect nearby communities to Tysons.~~
- ~~• Enhancements to the automobile network, such as a grid of streets, improved Beltway crossings, additional connections to the Dulles Toll Road, and state of the art traffic management systems should be provided.~~

~~Tysons Corner is located at the intersection of two major regional freeways, the Capital Beltway (I-495) and the Dulles Toll Road (DTR) and surrounds the intersection of two major arterials, Leesburg Pike (Virginia Route 7) and Chain Bridge Road (Virginia Route 123). These major highways as well as other arterials have historically served the vast majority of trips to, from, and through the Tysons area. Although extensive, this highway network has become increasingly strained as the Washington, D.C. region has grown and Tysons has become one of the largest office and retail markets in the country. Although planned road improvements will reduce the increase in traffic congestion in and around Tysons, this strategy is not sustainable in the long term because of right-of-way limitations, the high cost of adding highway capacity, and limits in the accommodation of vehicle traffic in a dense urban environment such as what is planned for Tysons Corner.~~

~~Alternatives to automobile travel, especially transit, will become increasingly important. In order to maintain a balance between land use and transportation, to ensure tolerable levels of congestion are not exceeded for long periods of time, limit negative impacts to economic activities, and to as well as create a healthier, more sustainable environment, alternatives to automobile travel, especially transit, will become increasingly important. For this reason, alternatives to automobile travel should meet increasingly higher targets over time. In order to achieve this, it is essential to successfully implement the following strategies:~~

- ~~• The provision of the necessary transit infrastructure and services to increase transit use over time.~~
- ~~• The achievement of higher vehicle trip reduction levels over time through transportation demand management programs (TDM), including an increase in~~

carpooling, telework, the application of variable working hours, and reducing the ratio of parking spaces to commercial floor area.

The increase of residential development in Tysons over time will replace automobile trips to and from Tysons with walking or transit trips within Tysons. A monitoring system to verify that these requirements are realized as planned is necessary and the ability to make adjustments if there are variations from the recommendations on how a balance will be maintained is critical. ~~The successful~~ transformation of Tysons is highly dependent on the provision of transportation infrastructure, services, and programs in a timely manner.

These programs are in turn dependent on measured ~~development~~ growth, an optimum mix of land uses, excellent urban design, and the successful integration of development with transportation infrastructure and services. Several significant transportation analyses were done, and will continue to be done, to inform the Comprehensive Plan guidance ~~on~~ regarding this balance between land use and transportation. ~~A~~The Scenario Analysis compared the impacts of different levels of growth. This analysis was done throughout the multi-year planning process. ~~A~~The Beyond 2030 Sketch Planning Analysis provided the target non-SOV mode shares that would be necessary beyond 2030.

A Countywide Transportation Demand Management (TDM) study was conducted, in 2010, to provide the County with the information necessary to institute robust TDM programs. The findings of this study were used to establish the TDM trip reduction goals and the new parking rates for Tysons, shown in their respective sections of this chapter ~~Corner~~. To ensure that the impacts on the areas surrounding Tysons were taken into consideration, a Neighborhood Traffic Impact Study was conducted in 2013. The Neighborhood Traffic Impact Study determined mitigation measures, in conceptual form, and associated right-of-way requirements at select intersections in the vicinity of Tysons. Recommendations from this study are reflected in sections of the Comprehensive Plan covering the areas where each recommendation is located. These improvements, and the associated right-of-way, should be considered when development takes place adjacent to each recommended improvement.

Finally, a Phasing Study, conducted in 2011, provided insight into how the recommended transportation improvements should be prioritized. A comprehensive analysis allowed the conceptual grid of streets to move beyond a concept to a planned grid. Finally, a longer term Circulator Study also moved conceptual Circulator routes to planned routes to be implemented in the future. The monitoring of the implementation and utilization of these provisions over time is essential.

## TRANSPORTATION INFRASTRUCTURE AND SERVICES

### Public Transportation

In order for Tysons to develop into a great urban center, public transportation needs to serve an increasingly higher percentage of trips over time. Specific goals for the percentage of trips served by public transportation at specified development levels are listed below. ~~These~~ goals account for people who work in Tysons but live outside of Tysons, people who live in Tysons and work elsewhere, and those who live and work within Tysons. Metrorail is the most significant public transportation improvement and is expected to carry the majority of public transportation trips in the near term. Metrorail will serve passengers traveling to Tysons from the Dulles Corridor to the west and from Arlington and the District of Columbia to the east; both

directions contain significant residential and employment centers. It will also serve residents of Tysons travelling to these areas, ~~which are also major employment areas.~~

While Metrorail is necessary for Tysons to develop into a ~~more efficient~~ urban center, it is not solely sufficient to support development at the Comprehensive Plan level. Other regional high quality public transportation services, such as express bus routes serving Tysons from the regional network of High Occupancy Vehicle (HOV) and High Occupancy Toll (HOT) lanes, are needed. In addition, two urban rail transit corridors, with significant residential centers, need to connect to Tysons.

A system of circulators buses is necessary to connect ~~other~~ areas of Tysons to the Metrorail stations and to provide a robust internal transit system within Tysons. Finally, local bus routes, ~~will continue to serve Tysons will continue to and these routes connect~~ nearby communities to Tysons for trips that are generally shorter than the trips served by the regional rail and bus networks. All of these public transportation services are described in more detail below.

### Public Transportation Goals

To support the level of development in Tysons forecasted for the year 2050, it is necessary for transit to achieve a 31% mode share of all person trips to, from and within Tysons ~~Corner~~ during peak periods. (Mode share is defined as the percentage of person trips that use a specific mode of transportation.) As the level of development in Tysons increases, the transit mode share should increase, as shown in Table 2, so that a 31% transit mode share can be achieved by the year 2050.

To be able to achieve the increase in transit use as indicated in Table 2, the following transit services should be provided for Tysons ~~Corner~~. The projected timing of these improvements is listed in Table 7.

- The extension of Metrorail in the Dulles Corridor to Loudoun County
- Express bus/BRT routes on I-66, I-95/I-495 and Leesburg Pike east of Tysons ~~Corner~~
- A Circulator System serving Tysons
- Expanded local bus service
- Additional BRT routes and other supporting services, including park-and-ride and feeder bus routes to rail stations.
- ~~At least two~~ additional urban rail corridors with substantial TOD development; for example, a more direct connection to a future Orange Line extension and a Beltway rail line to Montgomery County, both having TOD at their stations.

**Table 2**  
**Transit Mode Share at**  
**Increasing Levels of Development**

Development Levels (total GFA, sq. ft.) and forecast timeframe	Required Transit Mode Share During Peak Periods (person trips, all trip purposes, to and from Tysons-Corner)		
	TOD Areas	Non-TOD Areas	All of Tysons
84 million (2030)	25%	13%	22%
96 million (2040)	29%	15%	25%
113 million (2050)	36%	18%	31%

Note: The required transit mode shares specified in this table are included as a strategy to meet a target automobile trip reduction level to be achieved through transportation demand management. Please refer to Table 5 for recommended transportation demand management goals.

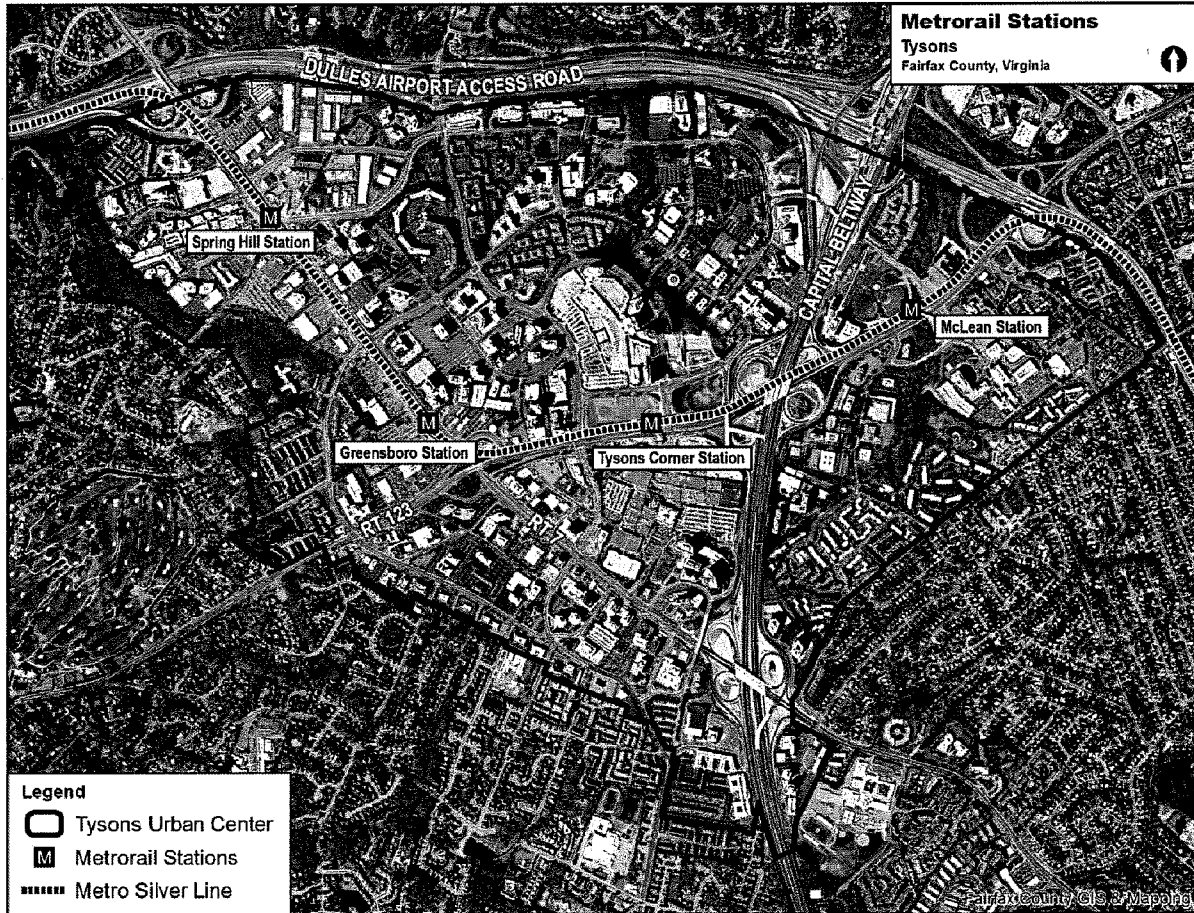
Regardless of mode type, transit improvements should be planned in accordance with estimated trip-making characteristics and should contain the following characteristics that make transit effective and convenient such as:

- Directness of travel
- Simplicity, connectivity, and ease of as few transfers as possible
- Operating flexibility
- Efficient and effective integration with other modes
- Efficient and effective placement of stops and operational facilities

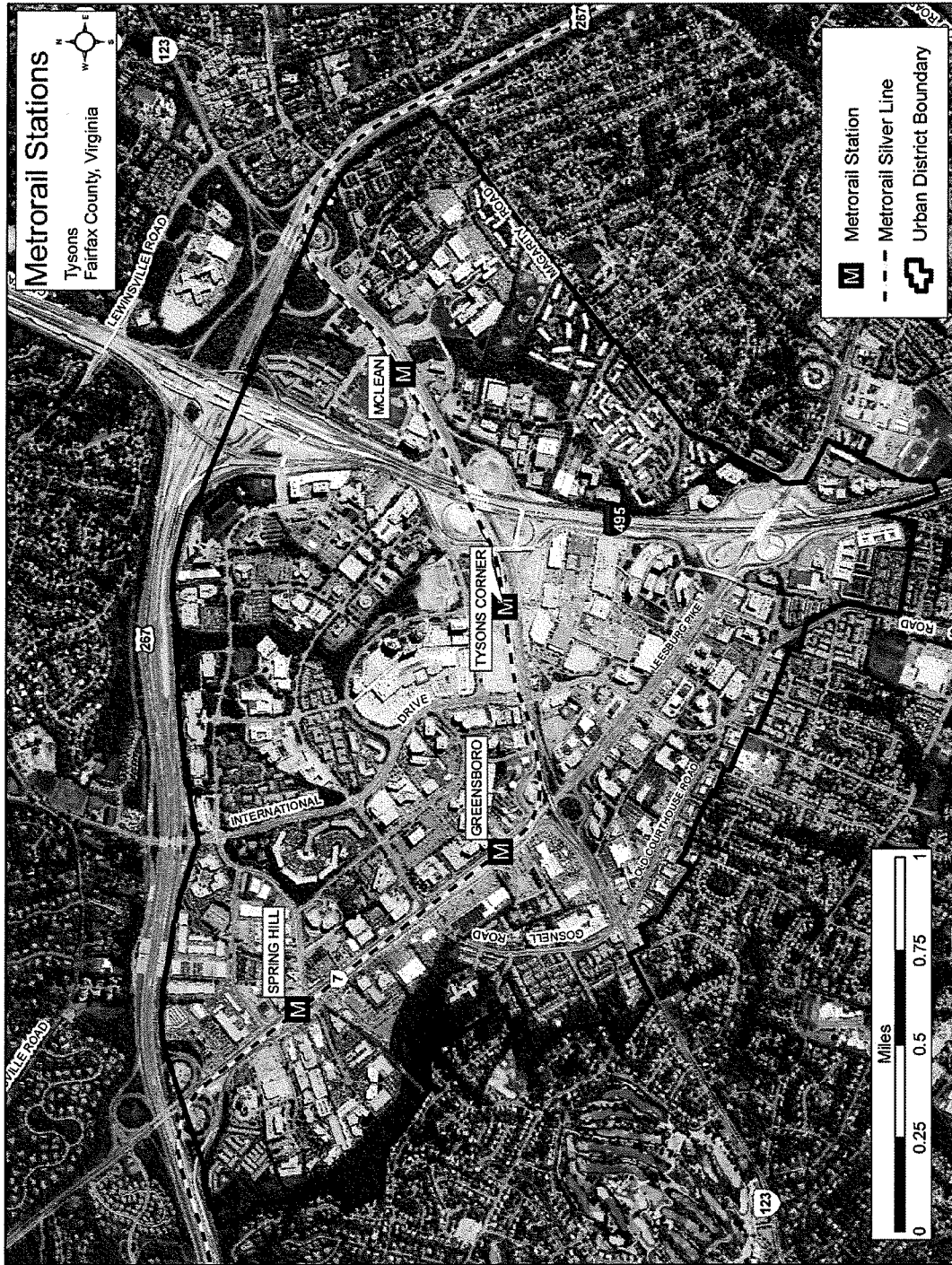
### Metrorail

The extension of Metrorail into the Dulles Corridor, with four stations located within Tysons, will offers mobility and accessibility from many portions of the region to Tysons.- More importantly, Metrorail will provides a necessary alternative to the automobile in order for Tysons to retain its economic viability and achieve its full potential.- The Metrorail service will also provides greater opportunities for people to reside in Tysons and use transit for much of their daily travel. Map 5 shows the locations of the four Tysons Metrorail Stations.

~~Metrorail service is anticipated to operate seven days a week from early morning until late at night. During rush periods, trains will provide frequent and reliable service to commuters and the Tysons workforce. During the midday, nights, and weekends, off peak service will be provided. Metrorail stations in Tysons will also serve as transportation hubs allowing for convenient intermodal transfers, the provision of bicycle storage and rental facilities, and short term rental car spaces.~~



MAP 5



MAP-5



### Express Bus Service/Bus Rapid Transit (BRT)

Express bus service is a high-speed limited-stop service generally operating within transportation corridors oriented to a principal destination. It consists of longer trips, especially to major activity centers during peak commuting hours, and operates long distances without stopping. Bus Rapid Transit (BRT) is a limited-stop service developed in the 1990s that relies on technology to help speed up the service. It combines the quality of rail transit and the flexibility of buses. Bus Rapid Transit can operate on exclusive rights-of-way, within high-occupancy-vehicle (HOV) lanes, on expressways, or on ordinary streets.

In November 2012, The opening of the Beltway High Occupancy Toll (HOT)/Express Lanes opened with three new connections to Tysons providing an opportunity to serve Tysons with a significant express bus network while extending on the regional HOV/HOT network to destinations such as the I-95 corridor and the I-66 corridor. These corridors are identified as “Enhanced Public Transportation Corridors” in the Fairfax County Transportation Plan. This designation indicates that major public transportation facilities could be added to these corridors based on a comprehensive alternatives analysis at some point in the future.

Along with Metrorail and light rail, Bus Rapid Transit and express bus services are potential transit options for Tysons. Serving Tysons with robust express bus service is needed to complement Metrorail. Existing these express buses are likely to use the Metrorail stations as terminal points allowing and having passengers to transfer there to an internal Tysons circulation system just like Metrorail passengers.

### System of Circulators

In order to increase the use of Metrorail for trips to, from and within Tysons, it is essential to provide a system of transit circulators is essential. The Tysons Ceirculator systems therefore should achieve as will have the following two main functions:

- Provide quick and convenient access for Metrorail passengers to and from locations within Tysons but beyond walking distance from the Metrorail stations
- Provide a quick and convenient way to travel within Tysons
- Extend the reach of the Metrorail System and connect the various districts within Tysons.
- Provide connections with the Metrorail stations that are as close as possible to the station entrances. If a circulator route cannot be adjacent to a station entrance, a clear visual connection should be maintained for the convenience and perceptions of users.
- Decrease auto-based trips. In addition to increasing transit mode share and decreasing vehicle use by making travel to, from and within Tysons more attractive, the circulator should be convenient enough to serve as a substitute for long walking trips within Tysons.
- Include service to locations with higher existing concentrations of trip origins and destinations as well as locations that will have high concentrations of residential and employment in the future.
- Reflect industry best practices, including the provision of real-time arrival information at station locations.
- Provide signal priority to circulators and to selected bus routes.
- Provide Circulator stops that are comfortable for passengers, offering protection from the weather and real-time schedule information.
- Provide service operating in both directions, on each of the proposed circulator routes, to maximize accessibility to the four Metrorail stations.



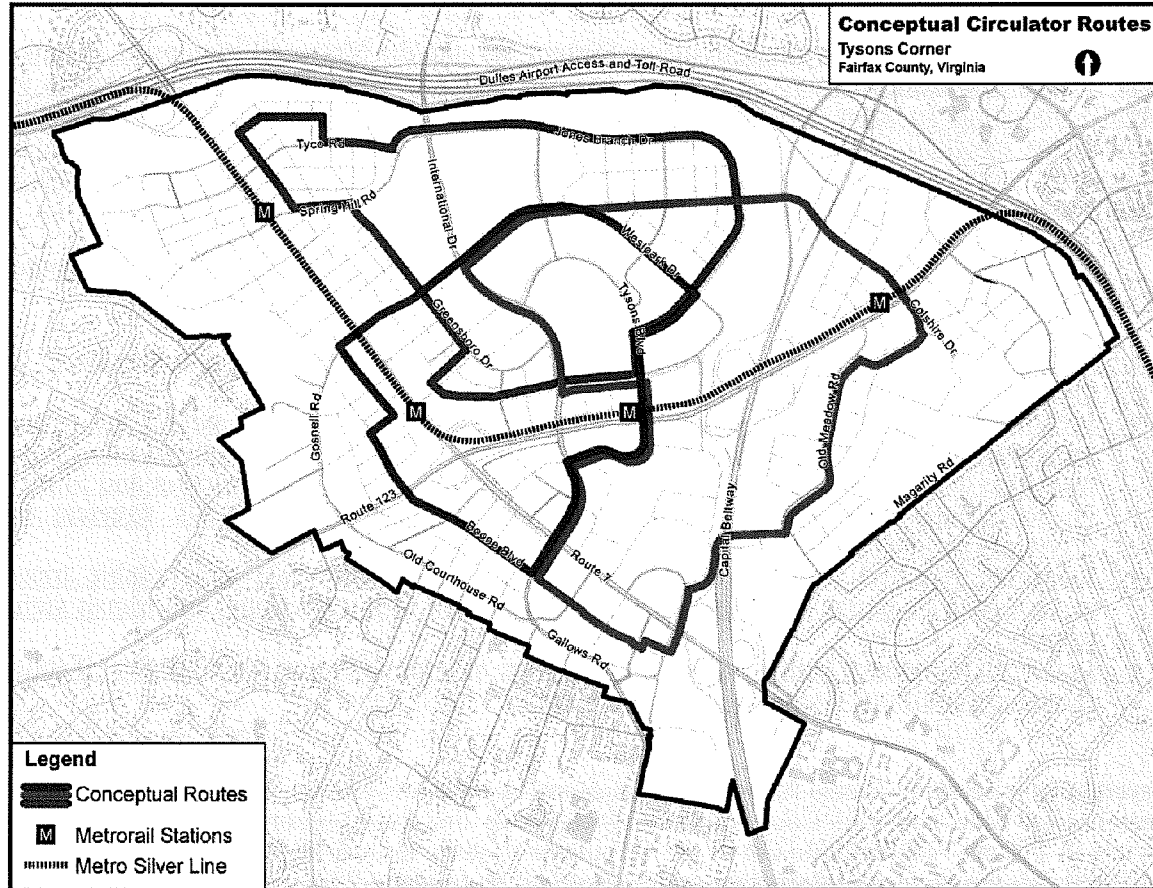
The first phase of a Tysons Circulator System, serving the Metrorail stations in Tysons is a bus service operating in mixed-traffic, on existing rights-of-way. Three of these routes are currently operating. In order to develop a longer term Circulator System intended to support the Tysons Area by 2050, when the residential population is anticipated to be 100,000 and the employment population is anticipated to be 200,000, the Fairfax County Department of Transportation (FCDOT) completed the Tysons Circulator Study.

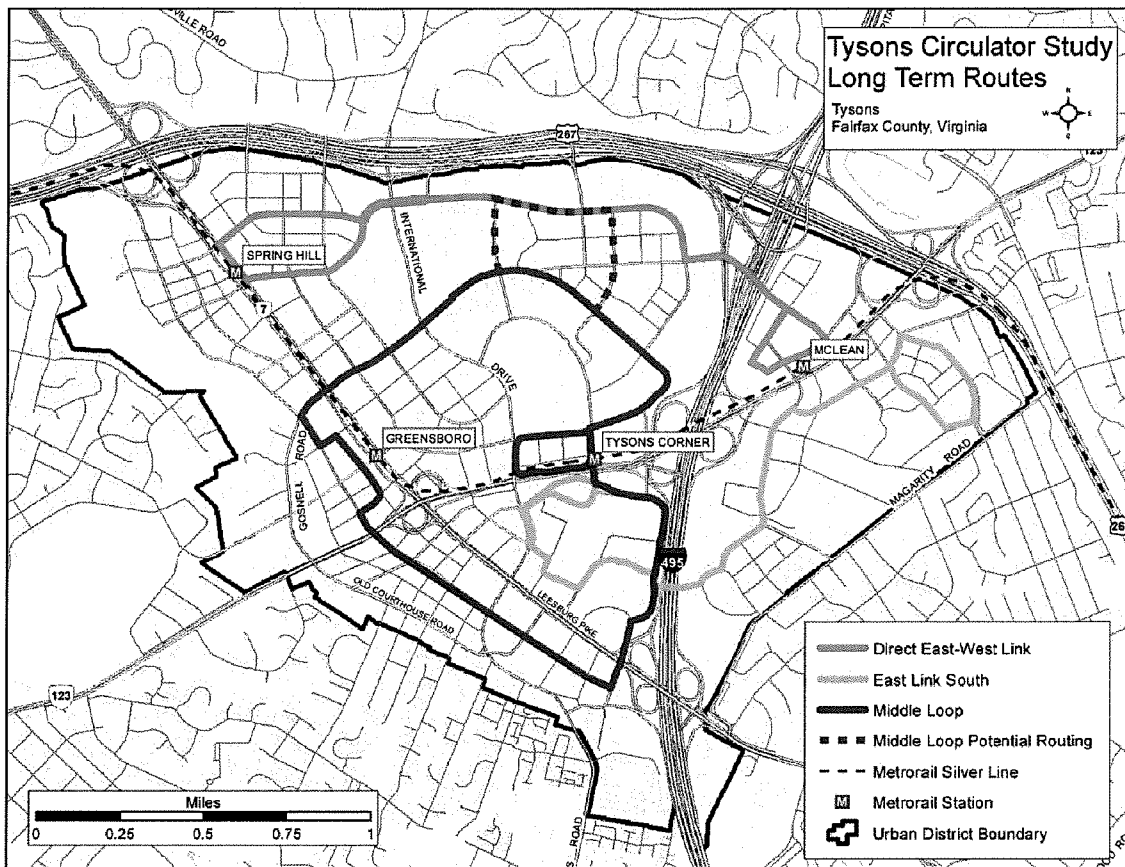
The Tysons Circulator Study used detailed analysis to refine conceptual circulator routes. The study did the following:

- Identified a Circulator network to maximize transit ridership and provide service to the greatest number of potential riders.
- Identified bus as the most appropriate transit mode for each route within the overall recommended network based on projected ridership demand and required capacity to meet that demand, as well as additional factors such as ease of construction and impacts on pedestrians, bicyclists and automobiles. Modes analyzed include bus, streetcar and driverless people movers.
- Identified required transit preferential treatments to support fast and reliable transit service such as transit exclusive lanes, queue jumps at intersections, and transit signal priority.
- Left open the longer term possibility of streetcar as a mode option for all routes, if future ridership conditions warrant its implementation.

~~A system of circulator routes is proposed to connect most of Tysons, specifically the North Central, East Side and Old Courthouse Districts, with the four Metrorail stations and other districts in Tysons. To facilitate use of the Circulator System, it must be integrated with all other transit serving the greater Tysons area and be accessible, frequent, and convenient for users. In order to accomplish this goal, the circulators should operate in their own, dedicated right of way. The first phase of the Circulator System, serving the Metrorail stations immediately after opening, will be bus service operating in mixed traffic on existing rights of way.~~

~~Over the long term the Circulator System may evolve through several phases, transitioning from buses operating in mixed traffic to buses operating on exclusive rights of way to, when feasible, a fixed guideway operating on exclusive rights of way. A storage and maintenance facility within Tysons will be necessary to support a fixed guideway system. Map 6 shows the Recommended Circulator Network, from the Tysons Circulator Study, a conceptual system of circulator routes that could serve Tysons in the longer term once the grid and two new Beltway crossings are constructed. - It should be noted that all Circulator Routes are anticipated to provide two-way service. The ultimate alignment may will likely change based upon the results of the Circulator Study and other factors, such as the availability of the necessary rights-of-way and other factors. The following objectives should guide the implementation of the Circulator System:~~





**MAP 6**

Note: Map 6 shows the Final Recommended Circulator Network (Longer Term), from the Tysons Circulator Study. It should be noted that all Circulator Routes are anticipated to provide bi-directional, or two-way, service. Ultimate alignments may change based upon the availability of the necessary rights-of-way and other factors. routes for a conceptual Circulator System. The Circulator System study will refine these alignments and a new system map will be developed.

- The circulators should extend the reach of the Metrorail System and connect the various districts within Tysons.
- The connection with the Metrorail stations should be as close as possible to the station entrances. If a circulator route cannot be adjacent to a station entrance, a clear visual connection should be maintained for the convenience and perceptions of users.
- The Circulator System should decrease auto-based trips. In addition to increasing transit mode share and decreasing vehicle use by making travel to, from and within Tysons more attractive, the circulator should be convenient enough to serve as a substitute for long walking trips within Tysons.

- ~~• The circulator routes should include service to locations with higher existing concentrations of trip origins (e.g. Freddie Mac, Gannett) and future high concentrations of residential and employment areas.~~
- ~~• The circulators should reflect industry best practices including the provision of real time arrival information at station locations.~~
- ~~• Signal priority should be provided to circulators and to selected bus routes.~~
- ~~• Circulator stops should be comfortable for passengers, providing protection from the weather and real time schedule information.~~
- ~~• The circulators should preferably travel in both directions on each of the proposed circulator routes to maximize accessibility to the four Metrorail stations.~~

### Local Bus Service

Over one dozen bus routes currently serve the Tysons area, with about two-thirds of these routes being operated by WMATA and the others by the Fairfax Connector. These routes connect Tysons to the Metrorail system and directly to various parts of northern Virginia, including McLean, Falls Church, Vienna and Arlington. Most of the routes stop at the Tysons Corner Center and some routes provide connections to other various parts of Tysons. Overall, though, these bus routes do not provide an effective circulation function within Tysons.

When the Metrorail extension opens, these Local bus routes were have been are expected to be realigned to provide better service to the new Metrorail stations, while other existing routes were may be eliminated or replaced by modified routes or the extended Metrorail service. Bus service frequencies were will also be modified for other routes to achieve consistency with new transit service in the corridor, to better coincide with Metrorail headways and to reduce duplication of service where it exists. Moving forward, local bus service will be evaluated on a periodic basis to identify necessary changes or adjustments to service.

### Multimodal Transportation Hubs

Multimodal Transportation Hubs, strategically placed close to Metrorail and circulator stations and/or other retail, employment and residential centers, are needed to allow flexibility in trip making within Tysons. These hubs should provide the following:

- Alternative modes for transit users to reach final destinations that are beyond walking distance from transit stations.
- The opportunity for ability of Tysons residents and workers to travel within Tysons and beyond without the need to own or use a private vehicle.

To develop more detailed plans for these hubs, including hub locations, recommendations for services to offer at each hub, where to place recommended services at each hub, and how to implement service recommendations, the Fairfax County Department of Transportation (FCDOT) completed the Tysons Multimodal Transportation Hub Analysis, in 2013, which resulted in the Mobility Hubs for Tysons Corner Metrorail Stations Conceptual Plans document. This document includes detailed recommendations for the four Tysons Metrorail stations, including service implementation and location recommendations for, at a minimum, car share programs, bike share, bike racks, bike lockers, taxi stands, kiss and ride locations, commuter kiosk and civic green locations at each station. The document includes phased plans for each station to allow for changes as redevelopment occurs on the properties surrounding the stations.

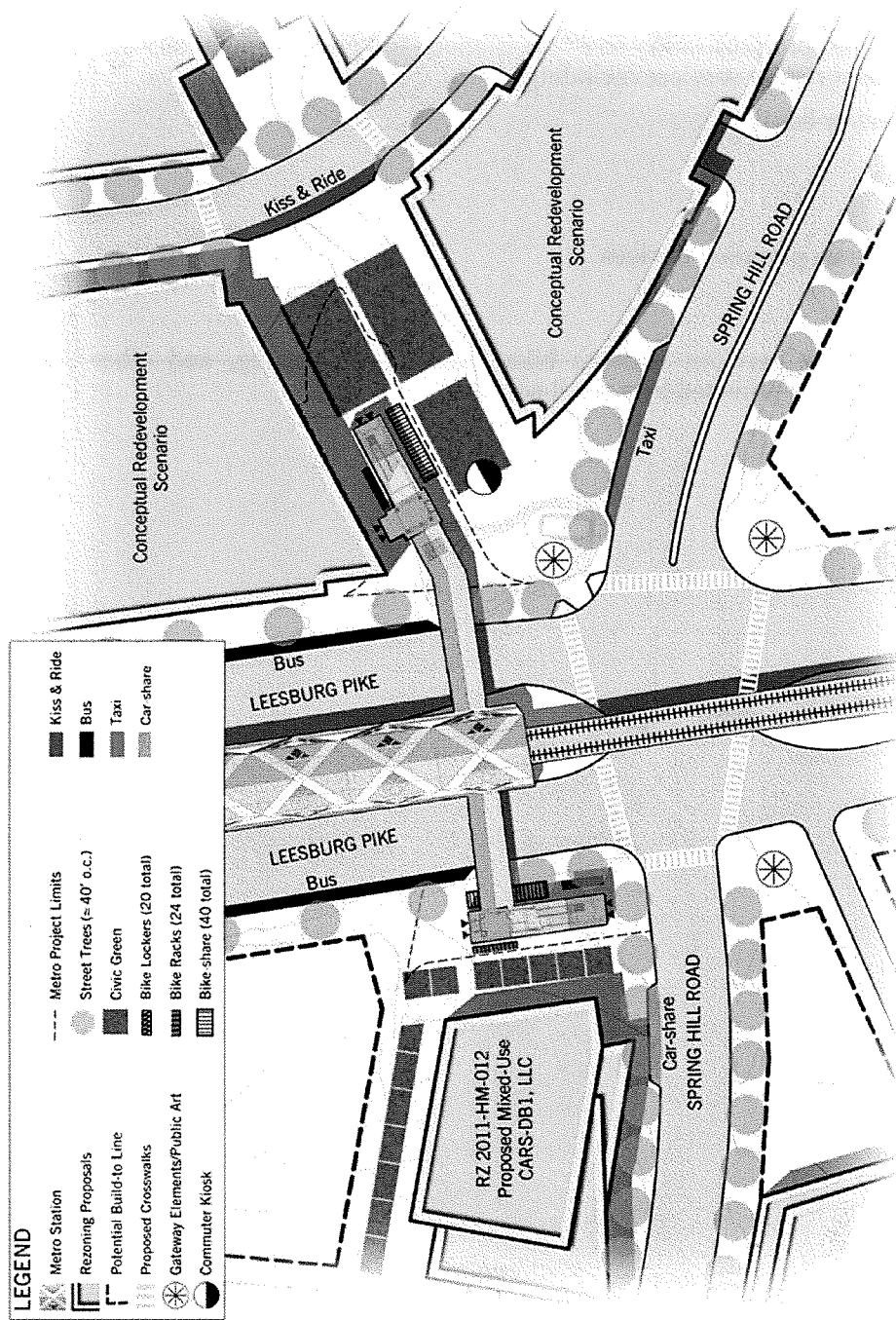
Recommendations from this document should be considered when redevelopment is proposed adjacent to the Metrorail stations.

~~Multimodal transportation hubs are envisioned to provide alternative modes of transportation and transportation services including:~~

- ~~• Transit (rail and/or bus)~~
- ~~• Bike sharing~~
- ~~• Car sharing~~
- ~~• Other personal transportation devices~~
- ~~• Taxis~~

~~Some transportation services such as bike sharing, car sharing, and other personal transportation devices can be provided by a retail service.~~

MAP 7



## The Road Network

### Overview

The following principles describe the ~~are adapted from the document “Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities,” published by the Institute of Transportation Engineers (2008). They describe an approach to the planning and design of urban street networks that should be followed in Tysons:~~

- Street network planning should address mobility and access needs associated with passenger travel, goods movement, utilities placement and emergency services.
- The reservation of rights-of-way for the ultimate width of streets should be based on long term needs defined by objectives for community character and mobility.
- ~~As development occurs, s~~Street network planning should be refined and updated to define alignments and establish the role of streets as more detailed planning and development occurs.
- Street networks should provide a high level of connectivity so that drivers, pedestrians and transit users can choose the most direct routes and access urban properties. Connectivity should support the desired development patterns. Street networks should provide intermodal connectivity to easily transfer between modes.
- Street network capacity and redundancy, including alternative paths, should be provided through a dense, connected network (a grid) rather than through an emphasis on high levels of vehicle capacity on individual arterial facilities. This approach ensures that the street network can support other objectives such as pedestrian activity, multimodal safety, access to rail stations, and support for adjacent development.

### Context Sensitive Solutions

~~Context Sensitive Solutions (CSS) should be applied in the planning and design of transportation projects in and around Tysons. CSS is a process of balancing the competing needs of many stakeholders starting in the earliest stages of project development. CSS should be applied in the planning and design of transportation projects in and around Tysons. It also includes flexibility in the application of design controls, guidelines and standards to design a facility that is safe for all users regardless of the mode of travel they choose as follows. CSS aims to achieve the following:~~

- Balance safety, mobility, community and environmental goals in all projects.
- Involve the public and stakeholders early and continuously throughout the planning and project development process.
- Use an interdisciplinary team tailored to project needs.
- Address all modes of travel.
- Apply flexibility inherent in design standards.
- Incorporate aesthetics as an integral part of good design.

### Grid of Streets

~~Tysons currently consists of large superblocks with a relatively small number of streets. This places excessive emphasis/reliance on the street system’s role as a waym to move vehicle~~



traffic, and the large block sizes inhibits transit use, pedestrian and bicycle movement. A grid of streets with smaller block sizes is typical in urban areas. It disperses vehicle traffic and improves mobility for pedestrians and bicyclists. A smaller block size will make a more walkable Tysons by creating convenient and short walk distances. A planned grid of streets concept is shown in Map 87. This grid was refined revised according to FCDOT's the County's Consolidated Traffic Impact Analyses (CTIA's) for Tysons. Nevertheless, future development, and further analyses and input from stakeholders may necessitate additional changes to the grid shown. A perfect grid is unlikely in Tysons Corner due to the alignment of existing roads and topographical constraints. However, where possible, a grid of streets should be planned.

In planning ~~With Implementation of the grid of streets,~~ should take the following should be taken into consideration:

- ~~Maximize Continuity,~~ within the grid of streets, should be maximized.
- ~~Avoid intersections with an acute angles, off-set intersections awkward dog legs, and intersections with more than four legs,~~ should be avoided.
- ~~Safe and convenient~~ Provide good pedestrian access to Metro stations should be provided.
- Block sizes should generally be within a 400 foot to 600 foot range with a maximum perimeter length of 2,000 feet.
- Any block longer than 600 feet should contain a mid-block pedestrian connection.
- Service streets should have sufficient rights-of-way to provide for a pleasant pedestrian environment where applicable.
- Block faces along Route 7 and Route 123 should ideally be 600 feet.
- Where possible, even spacing between intersections should be maintained.

With the provisions described above, the street network in Tysons ~~Corner~~ will be enhanced and will provide for greater network density and more direct connections between various locations, as well as better accommodating both cars and pedestrians. This network will contain more secondary (i.e., local and collector) streets, providing more choices for connectivity than the existing arterial network. Research and experience indicates that in areas with a fine grid of streets and a mix of land uses, people use transit more and make fewer auto trips than their neighbors in typical suburbs.

The grid of streets should be supported by a street hierarchy that allows different types of trips to use different streets. People wishing to travel across Tysons can choose to use a major arterial, such as Route 7. Others who only need to travel a couple of blocks will have a choice to travel on a smaller street within the grid of streets.

Although Fairfax County has in the past used the traditional nomenclature of major arterial, minor arterial, collector and local streets to functionally classify streets and highways, a parallel, urban design oriented nomenclature is also used for classification purposes in this text. Table 3 provides a cross-reference between the two classification schemes.

**Table 3**  
**Cross-Reference Between**  
**Traditional Highway Functional Classification Terms and**  
**Urban Design Oriented Functional Classification Terms**

Highway Functional Classification	Urban Design Functional Classification
Primary Arterial	Boulevard
Minor Arterial	Avenue
Collector	Collector
Local	Local Street
N/A	Service Street

Note: The cross-references shown in the table above are general in nature. Proper street names are not indicative of a street functional classification. Some variations may occur.

Map 87 shows a functional classification of the Tysons street network, including the grid of streets, ~~HOT~~Beltway- Express lane ramps and ~~potential~~proposed new ramp locations to the Dulles Toll Road. The functional classification of streets in Tysons should be updated as the results of further related studies become available. Map 7 shows the conceptual grid of streets for Tysons Corner, including service streets. Future engineering analyses will result in updated versions of this map. The existing interchange ramps may need to be modified to accommodate new grid connections. It is expected that the design and construction of grid segments necessary to maintain acceptable traffic circulation for an individual development will be provided by that development.

FCDOT conducted a detailed analysis (the New Tysons Dulles Toll Road Ramps Study), in 2013, of the configuration of ramps from Tysons to the Dulles Toll Road. Two final alternatives were identified with both including collector-distributor roads paralleling the Dulles Toll Road and providing connection points to the grid of streets. The analysis found that three ramps connecting Tysons to and from the Dulles Toll Road are necessary in the long term. The findings might be adjusted, pending future analyses and recommendations, by the Metropolitan Washington Airports Authority (MWAA). Changes to the planned Tysons street network, as shown in Map 8, take into consideration the recommendations resulting from this study as well as recommendations associated with the Dulles Toll Road determined by MWAA .

Map 8 also distinguishes additional improvements needed to facilitate the grid of streets:

- **Dulles Toll Road Collector-Distributor Lanes and Additional Lanes** – The current concept for access to the Dulles Toll Road proposes collector-distributor lanes paralleling the through lanes in the Tysons area and where possible, extensions of grid streets tying into the collector-distributor roads to provide access to the Toll Road. In addition, there is a need to extend the collector-distributor lanes further to the west, from the Rt. 7 interchange, as an additional one lane per direction on the Dulles Toll Road. Alternatives should be evaluated to determine if this is needed prior to implementation.

- Modified Intersection Treatment Area on Rt.123 (Superstreets) – Left turn movements may be modified at intersection approaches to facilitate regional through movement on boulevards. Right-of-way impacts are less than traditional roadway widenings. Additional attention should be paid to pedestrian and bicycle crossings at these intersections.
- Potential Ramp Improvements – Changes to ramp configurations and interchange operations are anticipated to facilitate efficient traffic movement and increase ingress and egress opportunities for the area.

### **Official Map of Public Streets in Tysons**

~~The proposed “Grid of Streets” is critical to the future form and function of Tysons. The implementation of this network of arterials and local streets will be extremely challenging. Engineering studies will be done to refine the conceptual grid shown above. Consideration should be given to creating and adopting an “official map” of public streets in Tysons. An official map is a description of planned public streets. This map will establish the location and character of the public street network. It should be created with input and cooperation from local landowners, the Virginia Department of Transportation, and the Fairfax County Department of Transportation, and be adopted by the County.~~

~~———— The official map would be based on conceptual engineering sufficient to determine the center line and width of the right of way, in order to determine what is feasible to implement in each area. Adoption of an official map would help in the review of development applications.~~

### **Street Types and Design Guidelines**

Street types describe the street as an element of the comprehensive framework of Tysons. Street types respond to the needs of traffic from vehicles, bicycles and pedestrians. In April 2010, the General Assembly of Virginia enacted HB 222, “Design standards for state secondary highway system components”, presently codified at Va. Code Ann. Section 33.1-69.001, which required the Virginia Department of Transportation to work in conjunction with Fairfax County to develop new context sensitive, urban design standards for the county.

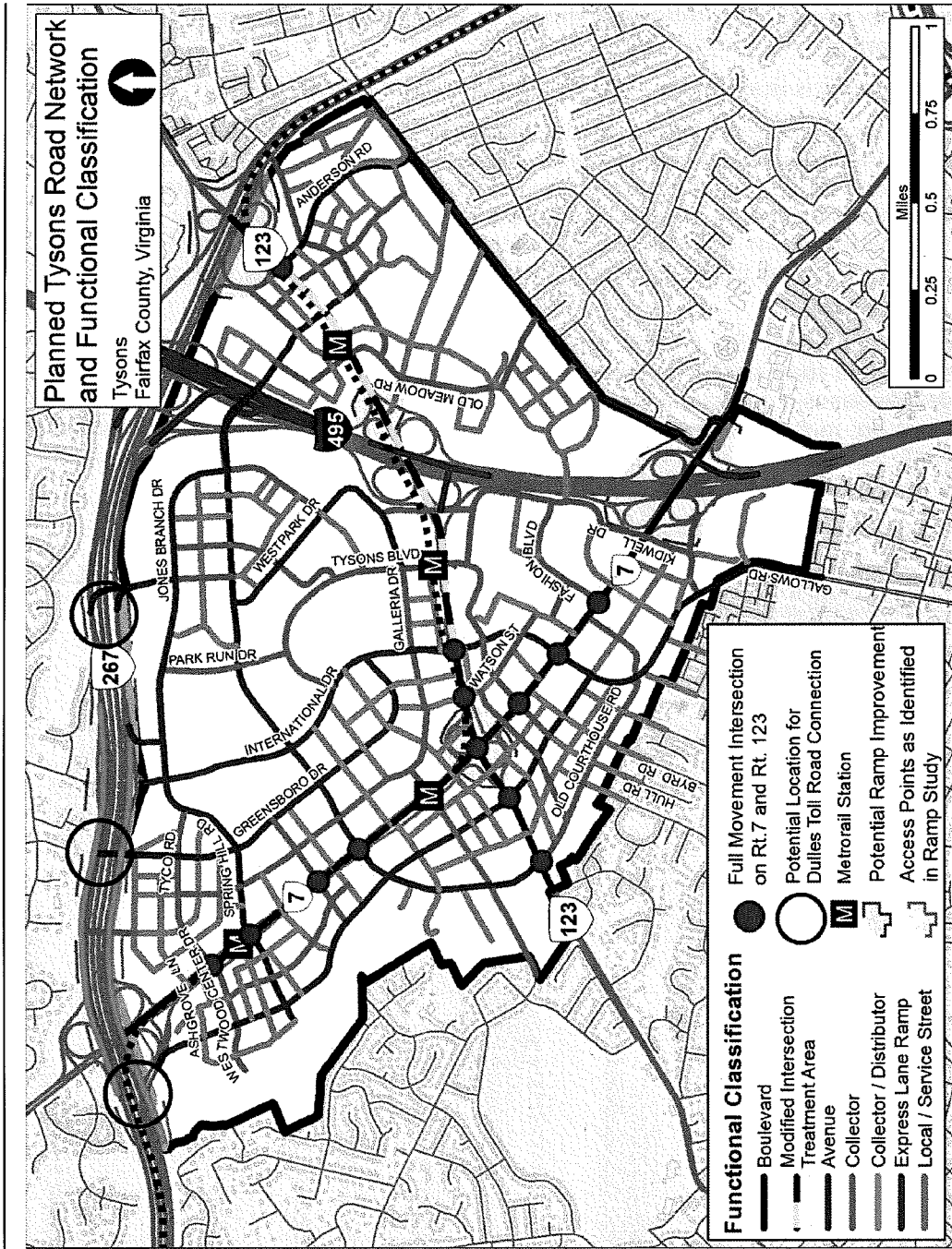
In 2011, County staff worked with VDOT and Tysons stakeholders to develop context sensitive design standards to implement the comprehensive plan. The Memorandum of Agreement (MOA) and Transportation Design Standards represent a different set of design standards for Tysons. While the standards do not address every single condition encountered, they do provide significant flexibility, and will substantially reduce the number of design exceptions/waivers that VDOT would require under its existing Secondary Street Standards.

Street types in Tysons have been identified, with a conceptual overview of each type’s functionality, cross-section, scale, modal mix, and character provided on the following pages. The cross-section for each street type contains flexibility to be able to respond to particular needs in different locations.

Within Tysons Corner, ~~streetpavement~~ cross-sections are to be designed to fit in an urban environment meeting the goals of Context Sensitive Solutions (CSS) while addressing safety,

operations, and capacity needs. The following should be taken into consideration in the design of streets in Tysons Corner:

- Continuity of streets is desirable in order to achieve a more effective grid.
- Streets in Tysons Corner will be designed as complete streets, addressing the pedestrian experience and contributing to creating great places. By definition, complete streets are designed and operated to enable safe access and movement for pedestrians, bicyclists, motorists and transit riders of all ages and abilities. Streets in TOD areas are expected to be attractive environments for walking, commerce, and casual interaction in addition to their function of moving traffic, including wide pedestrian facilities, dedicated bicycle facilities and lighting.
- Urban design guidelines for streets, including enhanced pedestrian elements such as sidewalks buffered from traffic by street trees, and bicycle facilities, enhancements such as separate bike lanes, address the elements of a complete street. Although typical street cross sections are included below, final street designs may include some variations, such as lane width, sidewalk width, or building setback to reflect the changing context of the street as it passes through the many neighborhoods and districts within Tysons.
- Parking is expected to occur on avenues, collectors, and local streets.
- All public street designs should conform to the Transportation Design Standards for Tysons Corner Urban Center.



**MAP 87**

Note: The Tysons Road Network is subject to change pending results from more detailed analyses of the connections to the Dulles Toll Road and the Grid of Streets, as well as individual

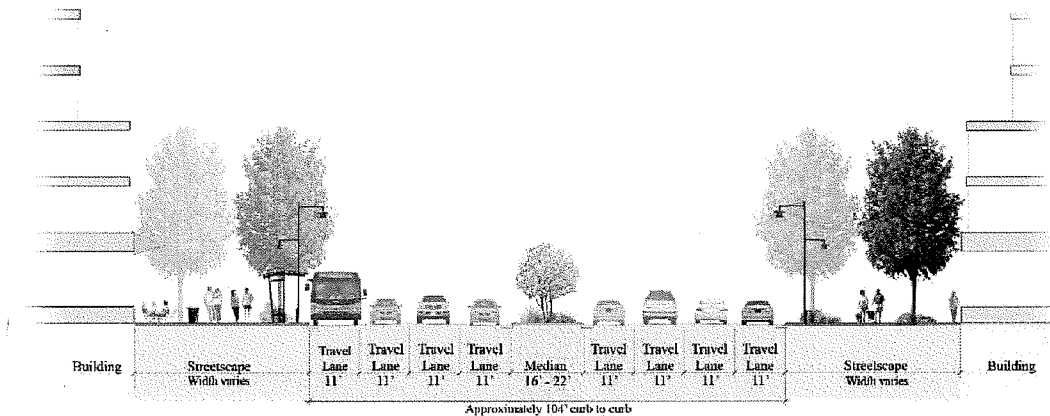
*Boulevards (Major Arterials)*

Route 7 and Route 123 are both boulevards (major arterials). Boulevards will be the most important multi-modal connectors and thoroughfares within Tysons. In addition to carrying the largest volume of automobile traffic, they also have the ability to accommodate the Metrorail,

circulator, bus, bicycle, and pedestrian modes within their rights-of-way. ~~Route 7 and Route 123 are both boulevards (major arterials).~~

Boulevards may have three to four travel lanes in each direction. Medians are necessary to provide a pedestrian refuge, rights-of-way for turn lanes and/or to accommodate Metrorail on portions of Routes 7 and 123. In addition, boulevards will have wide sidewalks with street trees on each side. Some portions of boulevards may include shared or dedicated lanes for the Circulator System.

**Figure 1**  
**Boulevard section with landscaped median**



Note: The outside lane in the Boulevard Street Section may be used for on-street parking where applicable.

Boulevard cross-section dimensions:

- The desirable width of the median is 20 feet to allow safe pedestrian refuge.
- 24 foot median (36 feet at stops) to accommodate the Circulator.
- 3 to 4 lanes per direction (11 feet for each lane).
- Refer to the Urban Design Recommendations for guidance on the streetscape.

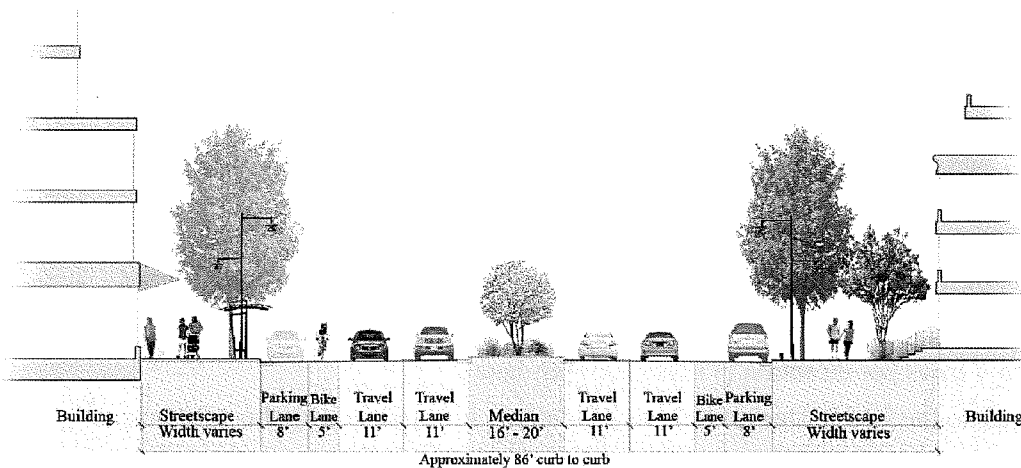
Typical street cross sections are depicted above. Although dimensions are noted, final street design will require accommodation of all applicable road design infrastructure. Additionally, final street designs may vary as necessary to address other design and engineering goals and requirements.

*Avenues (Minor Arterials)*

Boone Boulevard, Greensboro Drive and Westpark Drive are examples of avenues. Avenues support Boulevards by providing alternative paths and diverting vehicular traffic away from them. within Tysons can play a role in taking the pressure off the boulevards by diverting vehicular traffic from the boulevards to the avenues. Portions of avenues may also accommodate circulators and provide desirable addresses to new business and residential development. Boone Boulevard, Greensboro Drive and Westpark Drive are examples of avenues. These streets may generally have two travel lanes in each direction, on-street parking, wide sidewalks, and bike lanes. Medians are not preferred but may be necessary depending on design, safety, operation, and capacity considerations.

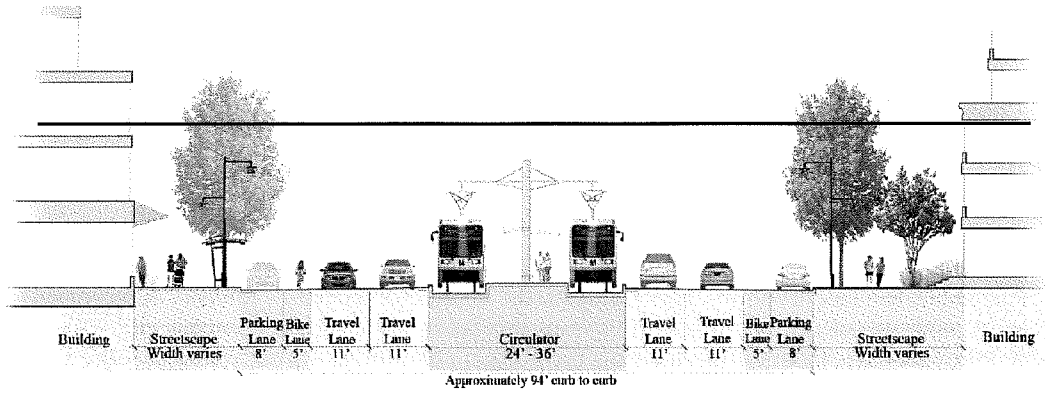
Additionally, avenues extend into the interior of Tysons, connecting residential and employment areas. Uses and character of avenues will range from transit-oriented, mixed-use with street level retail within the station areas, to neighborhood residential within non-station areas like East Side and North Central. Many portions of the avenues could also accommodate circulators on shared or dedicated lanes.

**Figure 2**  
**Avenue section with landscaped median**

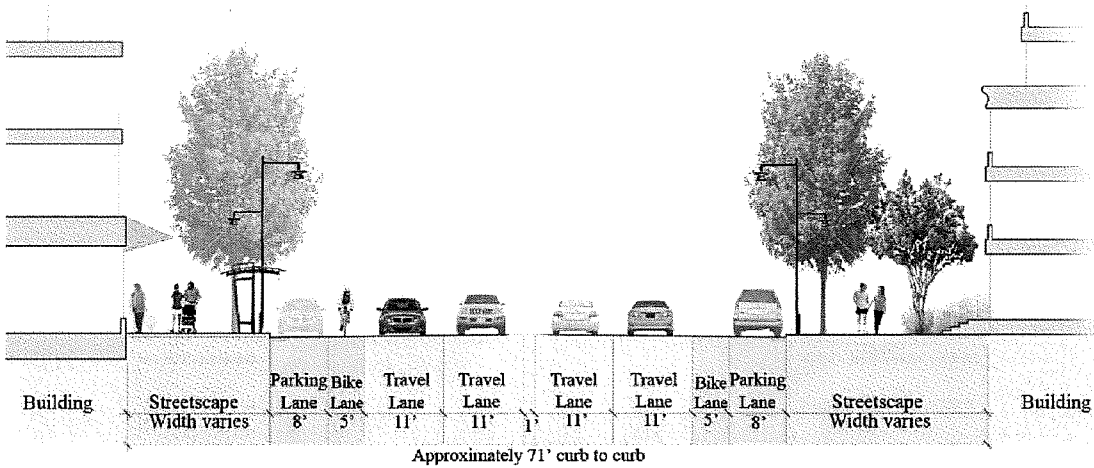




**Figure 3**  
 Avenue section with Circulator



**Figure 34**  
 Avenue section with no median



Avenue cross-section dimensions:

- ~~The desirable width of the median, if provided, is 20 feet to allow safe pedestrian refuge.~~
- Accommodate Circulator, as identified in the Tysons Circulator Study, or as Tysons Circulator Study may be amended in the future. 24 foot median (36 feet at stops) to accommodate the Circulator where applicable.
- 2 or 3 travel lanes per direction (11 feet minimum for each lane).
- On-street parallel parking is recommended. This parking may be prohibited during peak periods to address traffic capacity needs on some streets.
- 8 feet for on-street parallel parking per direction.
- 5 foot on-road dedicated bike lane per direction.

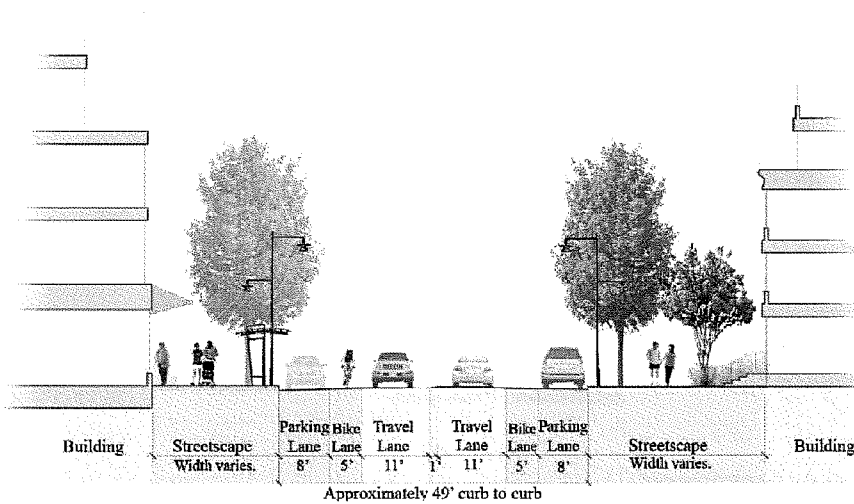
- The desirable width of the median, if provided, is 20 feet to allow safe pedestrian refuge.
- Refer to the Urban Design Recommendations for guidance on the streetscape.

Typical street cross sections are depicted. Although dimensions are noted, final street design will require accommodation of all applicable road design infrastructure. Additionally, final street designs may vary as necessary to address other design and engineering goals and requirements. For example, a parking lane and a bicycle lane may be combined to operate as a travel lane during peak periods in some locations.

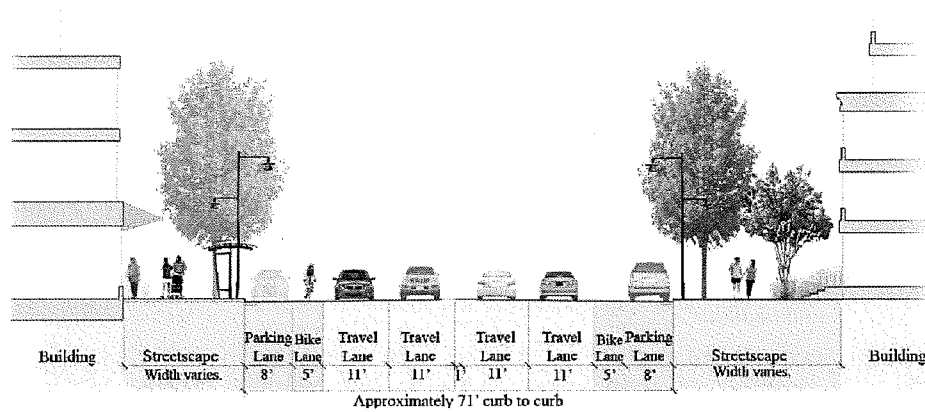
*Collector Streets (Collector)*

Collector streets within Tysons will connect local streets, with slow-moving traffic, to higher speed facilities like avenues and boulevards. Collector streets typically have one or two travel lanes in each direction. They are slow-moving lanes with traffic calming elements such as bulbouts at intersections, frequent pedestrian crossings, parallel on-street parking, bike lanes and wide sidewalks to maximize walkability. Medians are not preferred, but may be necessary to provide pedestrian refuge, or turn lanes or rights-of-way for the circulator.

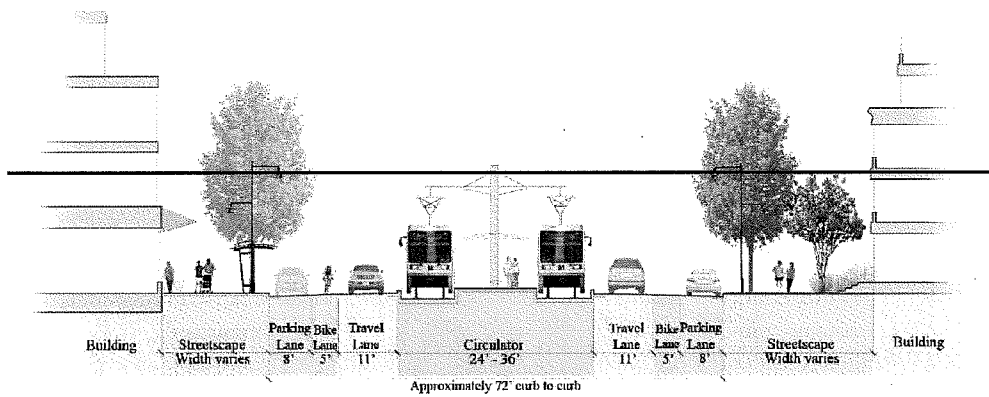
**Figure 45**  
**Collector Street section with**  
**one travel lane in each direction and no median**



**Figure 56**  
**Collector Street section with**  
**two travel lanes in each direction and no median**



**Figure 7**  
**Collector Street section with circulator**



**Collector Street cross section dimensions:**

~~The desirable width of the median, if provided, is 20 feet to allow safe pedestrian refuge.~~

- Accommodate Circulator, as identified in the Tysons Circulator Study, or as Tysons Circulator Study may be amended in the future. 24 foot median (36 feet for stops) to accommodate the Circulator where applicable.
- 1 to 2 travel lanes per direction (11 feet minimum for each lane).
- 8 feet for on-street parallel parking per direction.
- 5 foot on-road dedicated bike lane per direction.
- The desirable width of the median, if provided, is 20 feet to allow safe pedestrian refuge.

- Refer to the Urban Design Recommendations for guidance on the streetscape.

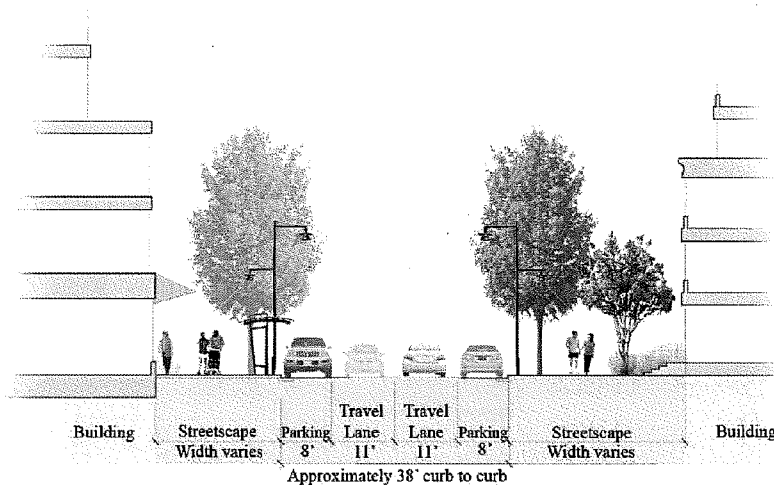
Typical street cross sections are depicted. Although dimensions are noted, final street design will require accommodation of all applicable road design infrastructure. Additionally, final street designs may vary as necessary to address other design and engineering goals and requirements, as well as individual development proposals.

### *Local Streets (Local)*

Local streets will ~~typically~~ generally be the lowest volume streets within Tysons and will carry slow-moving traffic. Medians should not be considered. Local streets They will serve residential and/or employment uses on either side with entrances and windows opening on the sidewalks.

Local street sections are generally narrow, with one lane in either direction, and are flanked by on-street parking on both sides. Due to low vehicle speeds, bicycles may be accommodated in the travel lane rather than in a dedicated bicycle lane.

**Figure 68**  
**Local Street section**



Local Street—cross section dimensions:

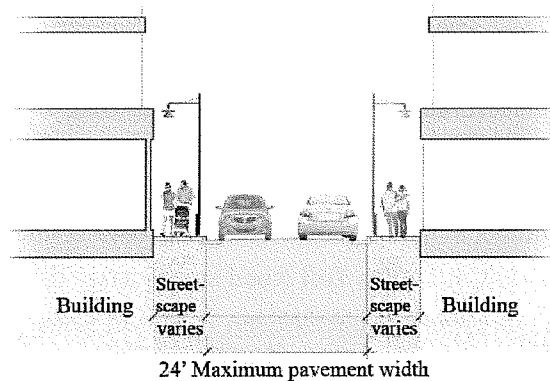
- No medians should be considered.
- 1 travel lane per direction
- 10 foot lane widths may be considered for residential streets.
- 8 foot on-street parking lane per direction.
- Local streets are low speed facilities that may or may not require bike lanes.
- Refer to the Urban Design Recommendations for guidance on the streetscape.

Typical street cross sections are depicted. Although dimensions are noted, final street design will require accommodation of all applicable road design infrastructure. Additionally, final street designs may vary as necessary to address other design and engineering goals and requirements, as well as individual development site conditions.

*Service Streets (No Functional Classification)*

Service streets serve vehicles operating at very low speeds and are generally privately maintained facilities that typically run between buildings to provide access to parking garage entrances, loading and refuse containment areas. Connections to local streets and collectors are encouraged.— Service streets/alleys should be designed to maximize functionality for service vehicles. Allowances should be made for pedestrian access as needed.

**Figure 79**  
**Service Street section**



Service Street—cross section dimensions:

- No medians should be considered.
- 1 travel lane per direction.
- Street widths should accommodate expected service vehicles.
- Parking and bus access is not anticipated.
- Landscaping should not conflict with large vehicle movements.
- Mountable curbs should be considered.
- Refer to the Urban Design Recommendations for guidance on the streetscape.

Typical street cross sections are depicted. Although dimensions are noted, final street design will require accommodation of all applicable road design infrastructure. Additionally, final street designs may vary as necessary to address other design and engineering goals and requirements, as well as individual development site conditions.

### Highway Connections and Beltway Crossings

Physical improvements to the roadway and transportation infrastructure are necessary to achieve critical access and egress for Tysons. In addition to the grid of streets, the following improvements should be constructed:

- A new Beltway crossing connecting Jones Branch Drive to Scotts Crossing Road (extension of High Occupancy Toll connection), including pedestrian and bicycle access and the ability to accommodate the Circulator.
- A new Beltway crossing connecting the Tysons Corner Center area to Old Meadow Road (limited to transit, pedestrians and bicyclists).
- Ramps connecting Greensboro Drive extension to westbound Dulles Toll Road and eastbound Dulles Toll Road to the Greensboro Drive extension.
- Ramps connecting Boone Boulevard extension to westbound Dulles Toll Road and eastbound Dulles Toll Road to the Boone Boulevard extension.
- Ramps connecting Jones Branch Drive to westbound Dulles Toll Road and eastbound Dulles Toll Road to Jones Branch Drive.
- A collector-distributor road system on the Dulles Toll Road between the Route 7 interchange area and the Hunter Mill Road interchange area.
- An additional lane on the Outer Loop of the Beltway (I-495) between the Route 7 on-ramp and I-66.
- Interchange improvements at Dulles Toll Road and Route 7; and
- Interchange improvements at Dulles Toll Road and Spring Hill Road.
- Modified intersection treatment (Superstreets) configurations along Route 123 between International Drive and the Dulles Access Road overpass.
- Changes to the northwest quadrant of the interchange of where Route 123 and connects with the Dulles Access Road, to. These changes will tie in the grid of streets into with the endpoint of the ramp from eastbound Dulles Access Road to Road 123.
- Improvements to the connection of Magarity Road and Route 7.
- A grade separation along Route 123, at the Lewinsville Road and Great Falls Road intersection, to increase capacity.;
- A reconfiguration of the Route 123--Route 7 interchange to allow additional capacity. Options evaluated should include concepts for an at-grade intersection.
- A new connection between Gallows Road and the I-495 Southbound Ramp at Gallows Branch.

~~These improvements need to be designed to fit into the new Tysons, sensitive to the context in which they will be implemented. The connections to the Dulles Toll Road listed above and their exact locations are subject to more detailed analyses. A preliminary analysis found that a maximum of two additional ramps entering Tysons from the Dulles Toll Road and two additional ramps exiting Tysons to the Dulles Toll Road is necessary.~~

### Pedestrian Network

The opening of Metrorail service has turned Tysons into a more active pedestrian environment. To ensure appropriate facilities are in place to accommodate the growing number of pedestrians, new streets will be designed, and existing streets will be retrofitted, to be Complete Streets, designed to accommodate all modes of travel.

The Street Types and Design Guidelines section of this chapter provides specific pedestrian facility treatments that should be applied to all streets in Tysons based on their functional classification. The Guidelines recommend minimum sidewalk widths but go beyond the basic provision of facilities. The Guidelines recommend on-street parking, lighting and additional space for activated streetscapes, all of which work to create a safe and attractive pedestrian environment.

In some locations, off-road trails will be necessary to provide adequate pedestrian connectivity to and within Tysons. Where these trails are necessary, lighting should be provided to ensure a safe and comfortable walking environment during all hours. A new grid of complete streets, combined with lighted off-road trails, will result in highly connected pedestrian network in Tysons. This expanded pedestrian network will not only provide alternative paths between Metrorail stations and other locations, but will also enhance the efficiency and desirability of using transit and other alternative modes of travel.

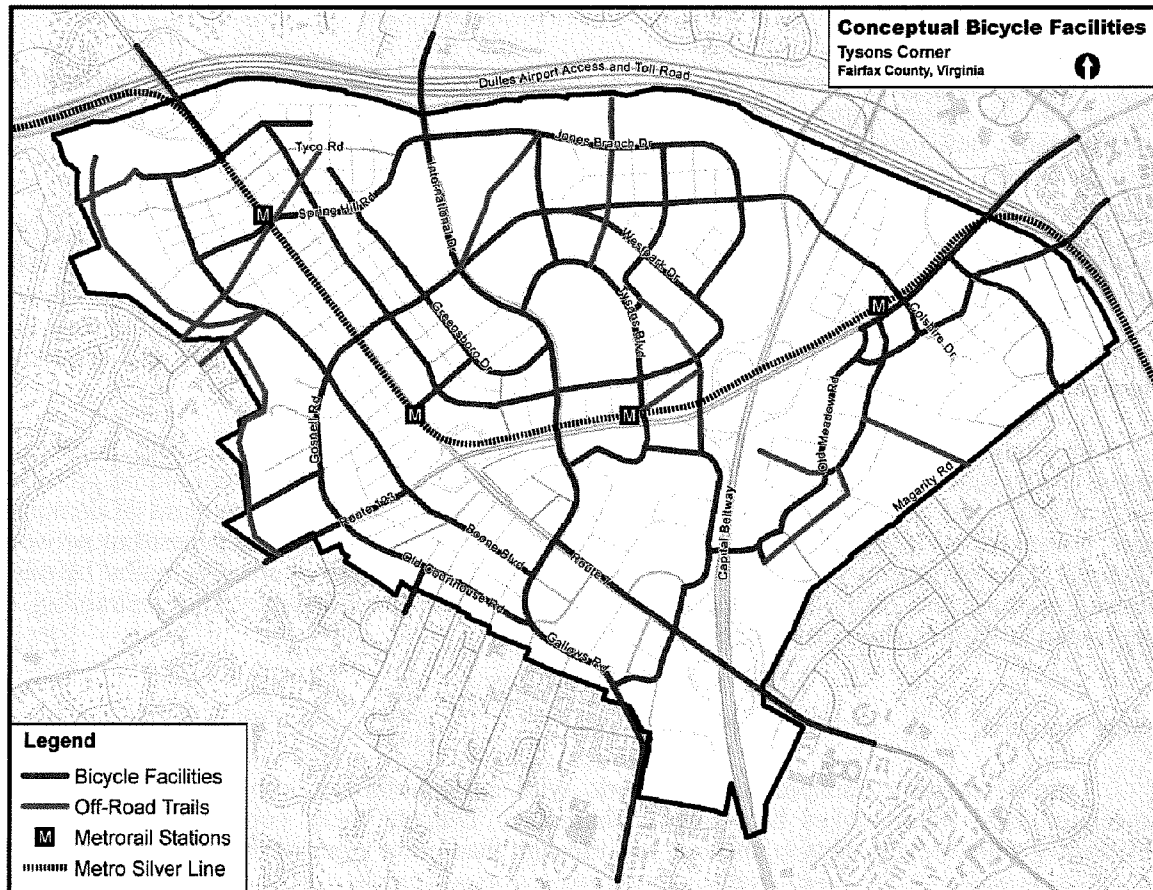
### Bicycle Network

Tysons' existing transportation network, with its superblocks, suburban character, and auto-related land uses, makes bicycling a challenge. Despite these conditions, Tysons has significantly more bicycle trips in, around, and through than other areas of the County.

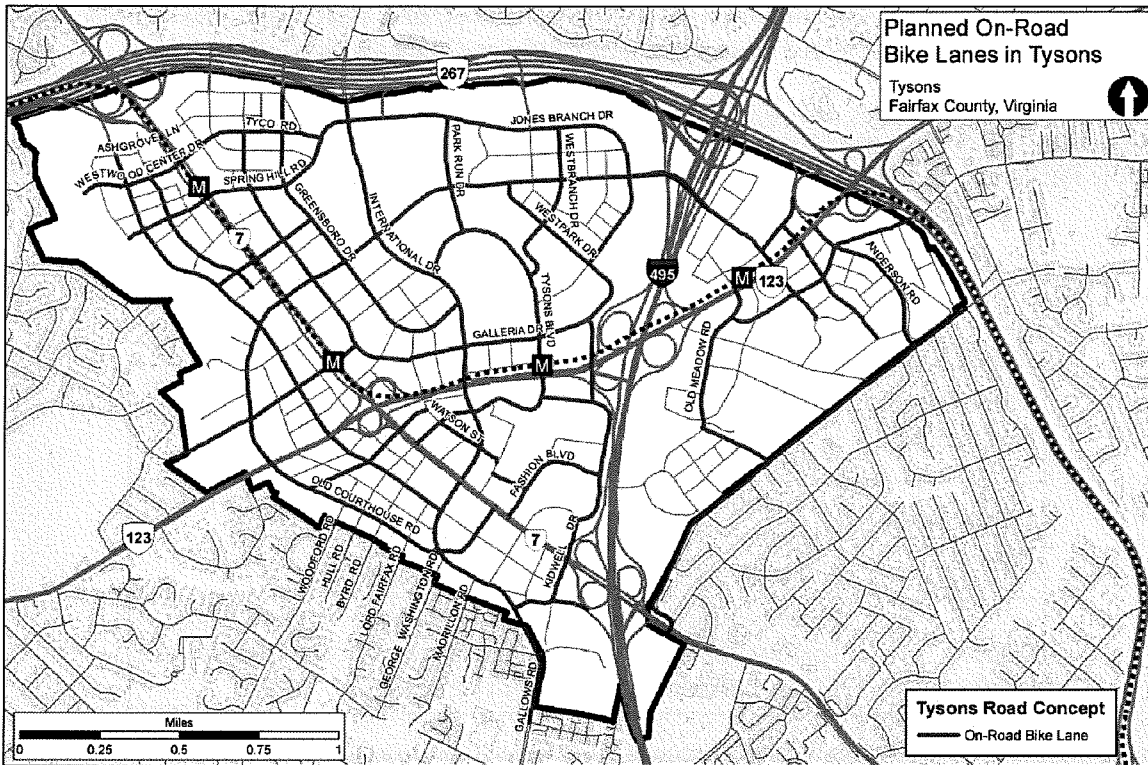
In 2006, the Board of Supervisors unanimously approved a comprehensive bicycle initiative, a program designed to encourage bicycling and make Fairfax County bicycle friendly and safe. New streets will be designed and older streets retro-fitted to better accommodate bicycles. Transit options will become bike friendly with the addition of buses equipped with bicycle racks. Ample safe, secure, and convenient bicycle parking will be installed countywide, including at the Tysons Metrorail stations. Comprehensive wayfinding signage will provide guidance and information about destinations and paths, while a network of interconnected shared use paths, interfacing with an on-road bike network, will establish a cohesive and connected transportation environment conducive to bicycling. The Tysons-Corner Urban Center plan affords an opportunity to incorporate these elements of bicycling, making Tysons-Corner a bicycle friendly community.

Map 9 shows a conceptual bicycle network, based on the Street Types and Design Guidelines shown earlier in this section, that require on-road bike lanes on all Avenue and Collector Streets is shown on Map 8. The Fairfax County Bicycle Master Plan, adopted by the Fairfax County Board of Supervisors in 2014, study has been initiated for the greater Tysons area provides more detailed recommendations for specific locations within Tysons. Once completed, bicycle routes in, around, and through the urban center will be refined and Map 8 will be updated. It should be noted that bicycle facilities are shown on Route 7 and Route 123 entering Tysons. It is anticipated, as shown on the Countywide Trails Plan, that these will be off-road facilities. However, bicycle facilities within Tysons will be provided on alternate routes. Bicycle facilities are graphically depicted in Figures 1-9 of the previous section of this report, "Street Types and Design Guidelines."





MAP 8



Map 9 was created using the Street Type Design Guidelines, described earlier in this section, that require on-road bicycle lanes on all Avenue and Collector Streets. The Tysons section of the Fairfax County Bicycle Master Plan provides more detailed recommendations for specific locations within Tysons.

MAP 9

### Bicycle Parking

In an effort to encourage bicycling in Tysons, safe, secure, and convenient bicycle parking should be provided. This number of bicycle parking spaces should be ~~in relation to~~ based on the proposed land uses in the Tysons Plan. Based on national trends, using a mode share of 1% to 5% for bicycle trips, Table 4 reflects bicycle parking standards to be used in calculating the number of parking spaces for bicycles.

Bicycle parking is defined by two general categories:

Short-term bicycle parking: Emphasizes convenience and bicycle accessibility, providing parking for visitors, shoppers, and guests. Short-term parking is typically bike racks that are adjacent to primary entrances at libraries, municipal buildings, schools, and retail centers and are intended for site users. Racks should preferably be protected ~~from~~ by the elements, and be highly visible.

Long-term bicycle parking: Provides not only convenience but security. This type of bicycle parking accommodates employees and residents where parking duration is typically longer than

short term parking. Parking amenities include bike lockers, bike cages, and bike rooms. These facilities should be conveniently located and offer fully enclosed and locked storage.

Specific guidelines for bicycle parking ~~are will be~~ addressed in these forthcoming documents: Fairfax County Bicycle Master Plan, Fairfax County Policy and Guidelines for Bicycle Parking, and Tysons Urban Design Guidelines.

**Table 4**  
**Bicycle Parking Ratios for Urban Mixed Use Centers and Transit Station Areas**

Type of Use	Requirement
Multi-Family Residential	1 space for every <del>35</del> residential units and 1 visitor space for every 25 residential units or to the satisfaction of the Director of Transportation. Minimum is 2 spaces.
Commercial-Retail	1 employee space per <del>12,500</del> 10,000 sq. ft. and 1 visitor space per 5,000 sq. ft. or to the satisfaction of the Director of Transportation. Minimum is 2 spaces.
Office	1 employee space per 7,500 sq. ft. and 1 visitor space per 20,000 sq. ft or to the satisfaction of the Director of Transportation. Minimum is 2 spaces.

Note: These ratios are subject to change. Final numbers and ratios will be developed and included in the “Fairfax County Policy and Guidelines for Bicycle Parking.”

## Wayfinding

An effective wayfinding system is integral to urban design since it enhances the comprehension and use of the built environment. A wayfinding system should be provided at Metrorail stations to:

- ~~• Orient first-time passengers disembarking in Tysons, and should:~~
- Guide vehicular, bicycle and pedestrian traffic to primary public, cultural, and recreational locations while providing a unified design standard and expressing a sense of place.
- Deliver information at locations where it is most needed.
- Guide Metrorail passengers to main destinations within walking distance and to locations where feeder-distributor modes, such as a circulator, can be accessed to reach destinations beyond walking distance.
- Identify bikeable routes and provide bike route destinations and distance information. ~~Signage should conform to the new revised bicycle wayfinding guidelines as defined in Chapter 9 of the Manual of Uniform Traffic Control Devices, 2009 (MUTCD).~~
- Provide consistent, clear, and attractive signage that is easy to maintain.
- Include stakeholder involvement in the design of the system.
- Include signs that are designed to easily accommodate changes in the venues listed on the signs.

- Include real-time parking availability information.

Detailed guidelines for wayfinding signage ~~are~~ will be addressed in the ~~forthcoming~~ Tysons ~~Urban Design~~ Guidelines.

### **Interim Improvements**

Many of the transportation improvements described in this chapter are of a large scale, are dependent on redevelopment, or have other attributes that will allow their implementation over a longer period of time. In some locations, the lack of existing facilities justifies the need for “interim” improvements. These improvements may not fulfill the longer term vision for Tysons but will serve a necessary need, on an “interim” basis, until the ideal improvement can be implemented. Interim improvements may include, but are not be limited to, the following:

- Interim climbing lanes, shared lane markings and other improvements for bicyclists.
- Interim sidewalk, crosswalk and trail improvements for pedestrians.
- Phasing the implementation of new roadway links.

### **Level of Service**

#### **Impacts on Roads**

An overall Level of Service (LOS) ‘E’ goal is expected for the street network in Tysons Corner. At locations where a LOS E standard cannot be attained or maintained with planned development, remedies should be proposed to offset impacts using the tiered approach described below. The purpose of this tiered approach is to support implementation of the grid of streets, which is more typical of urban areas and improves mobility for pedestrians and bicyclists.

In the development review process, mitigation of problem locations should follow the following sequence:

1. First, determine whether the addition of capacity and/or increased operational efficiency is possible to achieve without decreasing pedestrian walkability and safety. The widening of roads, either for additional by adding exclusive turn lanes and/or through lanes, increases street widths at intersections and works against creating an attractive environment for pedestrians. For this reason, roadway widenings will in most cases not be undesirable, since it will increase street widths at intersections and therefore work against an attractive environment for pedestrians. In lieu of ~~the additional~~ of lanes, it is preferable to add links to the grid of streets where applicable and possible to promote the build-out of the grid of streets and to create additional diversionary paths for vehicles, and in so doing, to decrease the traffic at problem locations in the vicinity of a proposed development.
2. Failing that, decrease future site-generated traffic by: changing the mix of land use within the parameters of the applicable land use guidelines for Tysons (e.g., replacing office or retail uses with residential use), increasing transit use through provision of additional and improved services, and/or optimizing the application of TDM measures which might include greater transit use, walking and bicycling.
3. If the previous measures do not provide adequate improvement of LOS, a development proposal or phase of development may need to be conditioned on completion of

offsetting improvements. Financial contributions of significant value dedicated to addressing deficiencies in the Tysons area may be considered as an offsetting improvement. These contributions may not be used as a credit against other contributions toward off-site transportation improvements.

### Impacts on Transit, Pedestrian, and Bicycle Facilities

A high level of service should be maintained for transit users that minimizes delay, the need for transfers, and transfer delay. Where it is not possible to maintain a high level of transit service because of extraordinarily high costs, monetary contributions to a fund for the eventual improvement of transit service should be provided in lieu of the maintenance of a high quality transit service. ~~An acceptable level of transit service nevertheless needs to be maintained.~~

A high level of service should also be maintained for pedestrians and cyclists, including safety and security, direct pathways, ~~reasonable grades~~, and minimized delays at intersections. Within TOD areas, preference should be given to the maintenance of a high level of service for transit, cyclists, and pedestrians over vehicles. Impact studies within TOD areas should quantify the level of service for all applicable modes (vehicular, transit, pedestrians, and cyclists) by applying up-to-date, standard techniques.

## TRANSPORTATION MANAGEMENT

### Transportation Demand Management

Transportation Demand Management (TDM) refers to a variety of strategies aimed at reducing the demand on the transportation system, particularly to reducing single occupant vehicles during peak periods, and expanding the choices available to residents, employees, shoppers and visitors. The result is more efficient use of the existing transportation system. Transportation Demand Management is a critical component of this Plan. Traffic needs to be minimized to decrease congestion within Tysons, to create livable and walkable spaces, and to minimize the effects of traffic on neighboring communities.

~~With~~ ~~the~~ ~~four~~ ~~Metrorail~~ ~~stations~~ ~~now~~ ~~open~~ in Tysons and denser mixed use transit-oriented development planned and under construction surrounding the stations, a substantial percentage of travelers are expected to commute via Metrorail without any TDM programs in place. This development pattern will also reduce the need for driving trips because jobs, housing, shopping, recreational, and cultural opportunities will be close at hand and accessible by walking or a short transit ride.

A broad, systematic, and integrated program of TDM strategies throughout Tysons can further reduce peak period single occupancy vehicle trips, as well as increase the percentage of travelers using transit and non-vehicular modes of transportation. TDM programs should embrace the latest information technology techniques to encourage teleworking, provide sufficient information to enable commuters and other trip makers to choose travel modes and travel times, or decide if travel is actually necessary at that time.

A large component of TDM will be the promotion of the programs to the various stakeholders within Tysons. A Transportation Management Association (TMA), known as Tytran, has should been established to coordinate TDM outreach. This TMA should serve all travelers in Tysons as a unified repository for information, serve to educate commuters on transportation options, and help implement all TDM programs in coordination with the County.

The TMA should also assist the development community in implementing their proffered TDM program requirements.

At a minimum, development proposals should include the following elements associated with their TDM program:

- Indicate the trip reduction goals over time (2050 and interim development levels) by using the values specified in Table 5.
- TDM implementation plans. TDM implementation plans should include at least the following:
  - Evaluations of potential TDM measures
  - Listing of TDM measures to be provided
  - Listing of alternate TDM measures which may be provided
  - Phased trip reduction goals
  - Implementation budgets
  - Monitoring arrangements and associated remedial and contingency funds. The remedial fund is to be used if TDM goals are not met, and the contingency fund is used, if unanticipated changes in travel behavior (Tysons-wide) result in an increase in the TDM trip reduction goals. Please see the TDM Monitoring section.
- Commitments to ensure Transportation Demand Management efforts are successful. These may include parking plans that reduce parking ratios before latter phases of development are constructed, phasing plans that tie future development to recording successful vehicle trip reductions, remedy funds to improve TDM program delivery, and penalties to deter non-compliance.

Areas closest to the Metrorail stations should have higher transportation demand management requirements. Within 1/8 mile of the stations, development proposals should provide the greatest incentives to reduce single-occupant vehicle commuting. The recommended TDM trip reductions of traffic generation estimates provided by the Institute of Transportation Engineers (ITE) are shown in Table 5.

**Table 5**  
**TDM Vehicle Trip Reduction Goals**  
**For Commercial and Residential Development**

<b>TDM Vehicle Trip Reduction Goals For Commercial and Residential Development</b>				
<b>Square Feet of GSA in Tysons</b>	<b>Distance from Metro Station</b>			
	<b>0 to 1/8 Mile</b>	<b>1/8 to 1/4 Mile</b>	<b>1/4 to 1/2 Mile</b>	<b>Beyond 1/2 Mile</b>
	<b>Trip Reduction Goal (Percentage reduction from the ITE Trip Generation Rate)</b>			
<b>Up to</b>	<b>45%</b>	<b>35%</b>	<b>30%</b>	<b>25%</b>

<b>65,000,000</b>				
<b>65,000,000</b>	<b>50%</b>	<b>40%</b>	<b>35%</b>	<b>30%</b>
<b>84,000,000</b>	<b>55%</b>	<b>45%</b>	<b>40%</b>	<b>35%</b>
<b>90,000,000</b>	<b>58%</b>	<b>48%</b>	<b>43%</b>	<b>38%</b>
<b>96,000,000</b>	<b>60%</b>	<b>50%</b>	<b>45%</b>	<b>40%</b>
<b>105,000,000</b>	<b>63%</b>	<b>53%</b>	<b>48%</b>	<b>43%</b>
<b>113,000,000+</b>	<b>65%</b>	<b>55%</b>	<b>50%</b>	<b>45%</b>

Development levels in total square feet (with corresponding forecast year)	TDM Vehicle Trip Reduction Goals, (Percentage Reduction from ITE Peak Hour Rates)			
	TOD Locations			Non-TOD Locations (more than 1/2 mile from station)
	0 to 1/8 Mile from Station	1/8 to 1/4 Mile from Station	1/4 to 1/2 Mile from Station	
<b>2010 to 2020</b>	<b>45%</b>	<b>35%</b>	<b>30%</b>	<b>25%</b>
<b>84 million (2030)</b>	<b>55%</b>	<b>45%</b>	<b>40%</b>	<b>35%</b>
<b>96 million (2040)</b>	<b>60%</b>	<b>50%</b>	<b>45%</b>	<b>40%</b>
<b>113 million (2050)</b>	<b>65%</b>	<b>55%</b>	<b>50%</b>	<b>45%</b>

Note: TDM reductions include a reduction in vehicle trips due to transit. See Table 2 for transit modal split goals.

The TDM trip reductions in Table 5 equate to total trip reductions for Tysons of over 30% in 2013; over 40% in 2030; and over 50% in 2050 based on square footage of development that is achieved. These trip reductions include the transit mode shares indicated in Table 2. As the Tysons-Corner area is developed, and the land use and transportation infrastructure matures, TDM trip reduction goals should be examined to determine if they are adequate for changing conditions.

Examples of TDM measures:

- Transit and vanpool subsidies
- Pre-tax deduction of transit and vanpool fares
- Telework program
- Carpool and vanpool matching service
- Shower and locker facilities for bicyclists and walkers
- Secure and weatherproof bicycle parking
- Carpool and vanpool preferential parking
- On-site car-sharing vehicle
- Employee s Shuttle service to Metrorail
- Guaranteed Ride Home Program



- Commuter information center (bulletin board, web site, brochure table)
- Employee Transportation Coordinator (ETC)
- Flexible or alternative work hours
- TDM education programs directed at the public and employers

TDM programs will only work where parking is not over-supplied, and will be most effective where parking costs are charged directly to users. TDM programs must be coordinated with parking reductions and/or management programs.

#### Parking Management

~~In the past, each development was required to provide parking for its own peak demand, an approach that often leads to excess parking supply and a wasted use of resources. In 2015<sup>09</sup>, Tysons had more land devoted to cars than to people with approximately an estimated 11067,000 parking spaces, covering 40 million square feet. This amount of parking far exceeds what is necessary for adequate parking. Much of this has occurred because there is no convenient internal circulation system or adequate pedestrian friendly street and sidewalk network in Tysons. Additionally, there is limited inter-parcel access and shared-use parking. Each development provides parking for its own peak demand, an approach that often leads to excess parking supply and a wasted use of resources.~~

A change in philosophy of regulating parking is needed to put Tysons on the forefront of sustainable growth. Parking in the TOD Districts should follow the experience of successful TOD areas around the country by limiting the amount of parking required near rail stations. In the Non-TOD Districts, reductions from conventional parking ratios are required to achieve Tysons-wide trip reduction goals.

For all non-residential uses, minimum parking requirements are eliminated within 1/2 mile of rail stations. Minimum parking requirements are reduced for all uses located outside of TOD Districts. A parking plan should be submitted along with all development applications. The parking plan should include, along with other required elements, information to demonstrate that the planned loading facilities are adequate for the planned uses. The loading plan may count new, on-street loading areas and synergies among planned uses, to limit the need for additional loading spaces.

To avoid oversupply of parking, maximum parking requirements are set for all areas. Shared parking and the use of existing excess off-site parking are encouraged. Parking rates are indicated in Table 6.

It may be appropriate, in developments with long implementation horizons, to use more parking than indicated in Table 6 for initial phases of development, provided that the following stipulations are met adhered to:

- Existing off-site parking should be used to provide parking in excess of the parking ratios in Table 6 during initial phases of development.
- If sufficient off-site parking is not available, additional on-site parking may be provided on condition that TDM goals are not jeopardized and that once all phases are constructed, parking ratios for the total development will not exceed the maximum values in Table 6.
- Parking in excess of the parking ratios in Table 6 should be available to the public at appropriate parking fees where possible.

In Non-TOD Districts and for residential development within TOD Districts, a parking plan can be submitted along with a development application that justifies parking levels below the minimums indicated in Table 6. The parking plan should indicate the techniques to be applied to justify a lower level of parking.

**Table 6**  
**Parking Ratios for Tysons-Corner**

Parking Spaces Per Unit or Spaces Per 1,000 sq. ft.									
Use	Previous (2009)	< 1/8 mile Metro Station		1/8 - 1/4 mile Metro Station		1/4 - 1/2 mile Metro Station		Non-TOD	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
<b>Townhouse</b>	<b>2.7</b>	<b>1.75</b>	<b>2.2</b>	<b>1.75</b>	<b>2.2</b>	<b>2.0</b>	<b>2.5</b>	<b>2.0</b>	<b>2.7</b>
<b>Multifamily</b>									
<b>0-1 bedroom</b>	<b>1.6</b>	<b>1.0</b>	<b>1.3</b>	<b>1.0</b>	<b>1.3</b>	<b>1.1</b>	<b>1.4</b>	<b>1.1</b>	<b>1.4</b>
<b>2 bedroom</b>	<b>1.6</b>	<b>1.0</b>	<b>1.6</b>	<b>1.0</b>	<b>1.6</b>	<b>1.35</b>	<b>1.7</b>	<b>1.35</b>	<b>1.7</b>
<b>3+ bedroom</b>	<b>1.6</b>	<b>1.0</b>	<b>1.9</b>	<b>1.0</b>	<b>1.9</b>	<b>1.6</b>	<b>2.0</b>	<b>1.6</b>	<b>2.0</b>
<b>Hotel/Motel</b>	<b>1.08</b>	<b>none</b>	<b>1.0</b>	<b>none</b>	<b>1.0</b>	<b>none</b>	<b>1.05</b>	<b>0.85</b>	<b>1.08</b>
<b>Office</b>	<b>2.6</b>	<b>none</b>	<b>1.6</b>	<b>none</b>	<b>2.0</b>	<b>none</b>	<b>2.2</b>	<b>2.0</b>	<b>2.4</b>

Notes:

1. For retail and service uses located in TOD areas not listed in Table 6, minimum parking requirements enumerated in Sections 11-103, 11-104, 11-105, and 11-106 of the Zoning Ordinance should be used as maximum parking requirements; in non-TOD Districts, the minimum required parking should be 75% of the minimum parking requirement in the Zoning Ordinance and the maximum should be 110% of the referenced minimum.
2. To encourage convenient retail and service uses within walking distance of office and residential development, the first 5,000 square feet of accessory retail and service uses in any such building should have no parking spaces allocated in the parking plan, nor should it be counted toward the maximum parking requirement.

As the Tysons Corner area is developed, and the land use and transportation infrastructure matures, parking requirements should be examined to determine if they are adequate for the changing conditions. Rather than supplying parking for each individual use, parking should be treated as a common resource for multiple uses. Implementing this practice will reap many advantages in creating a more walkable environment. Providing transit service, an effective mix of uses, and an appropriate network of sidewalks, will reduce automobile use and, consequently, the need to provide parking.

Additional methods listed below should be pursued to ensure the appropriate amount of parking is provided.

- Encouraging shared parking arrangements across parcel lines.

- Creating a parking management entity to coordinate shared parking efforts, enforce parking regulations, apply parking pricing strategies where beneficial, and monitor parking demand and supply regularly.
- Securing parking management agreements such as parking pricing.
- Unbundling parking from commercial and residential leases and sales.
- Allowing on-street parking, and where appropriate, to counting these spaces towards parking requirements.
- Implementing “Smart Parking” technology to maximize parking utilization.
- Providing preferential parking for carpools, vanpools, and car-sharing vehicles.
- Allow reductions for shared parking on mixed use sites.

#### Information and Communications Technology and Intelligent Transportation Systems

The application of Intelligent Transportation Systems (ITS) Information and Communications Technology (ICT) in Tysons Corner has the potential to decrease congestion, increase safety, make trip making more convenient, reduce emissions and improve trip-making decisions. More specifically the following are examples of goals for the application of ITS ICT in Tysons:

- Electronic information infrastructure that works in concert with physical infrastructure to maximize the efficiency and utility of the system, encouraging modal integration and consumer choice.
- Real-time information for operators and users of the transportation system to help contain congestion and increase the effective capacity of the system while reducing the need for new construction.
- Facilities, technology and information that help reduce energy consumption and negative environmental impact.

ITS ICT can be used to not only monitor and mitigate traffic congestion, but also to enhance emergency services in Tysons Corner. Through the use of street sensors, signal control transmitters, and video surveillance cameras, real-time traffic management can take place. GPS and other technology can also help public safety personnel respond to incidents in a timely manner. As part of ICT, intelligent transportation systems (ITS) should be applied to the fullest extent possible. Main components of ITS include:

- Traffic management systems. These systems make use of information collected by traffic surveillance devices to smooth the flow of traffic along travel corridors. They also disseminate important information about travel conditions to travelers.
- Crash prevention and safety systems detect unsafe conditions and provide warnings to travelers to take action to avoid crashes.
- Roadway operations and maintenance focus on integrated management of maintenance fleets, specialized service vehicles, hazardous road conditions remediation, and work zone mobility and safety.
- Transit ITS services include surveillance and communications, such as automated vehicle location (AVL) systems, computer-aided dispatch (CAD) systems, and remote vehicle

and facility surveillance cameras, which enable increases in operational efficiency, safety, and security.

- Emergency management applications include hazardous materials management, the deployment of emergency medical services, and large and small-scale emergency response and evacuation operations.
- Electronic payment and pricing systems employ various communication and electronic technologies to facilitate commerce between travelers and transportation agencies.
- Traveler information applications use a variety of technologies to allow users to make more informed decisions regarding trip departures, routes, and mode of travel.

New developments should contain the necessary information and communication technology (ICT) infrastructure to enhance the following activities to the fullest extent:

- Telework, teleconferencing, and related strategies to reduce vehicular trips.
- Advanced traveler information to increase the efficiency and effectiveness of decisions on when to travel, how to travel, where to travel, and whether to travel at all.

#### Traffic Management and Maintenance

To ensure a high level of safety, to minimize breakdowns, to maintain a clean and attractive environment, and to monitor systems to optimize efficiency and effectiveness, a traffic management maintenance entity should be designated ~~established~~ for Tysons ~~Corner~~. Such an entity should be responsible for at least the following:

- Traffic monitoring and incident management.
- Streetscape monitoring and maintenance where necessary.

#### MAINTAINING A BALANCE BETWEEN LAND USE AND TRANSPORTATION

In order to maintain an acceptable level of accessibility in and around Tysons ~~Corner~~ as development occurs over time, it is essential to keep a balance between land use and transportation. To maintain this balance, the increase in development in Tysons should be coordinated with the provision of transportation infrastructure and programs to reduce vehicular trips. Considerable analysis was conducted to determine the need for specific transportation programs and infrastructure for a specific level of development in Tysons.

From the results of this analysis, the following strategies were identified that need to be successfully implemented to maintain a balance between land use and transportation:

- The phased provision of transportation infrastructure as specified in Table 7. Major components of transportation infrastructure are the grid of streets, new transit routes, and new connections in and out of Tysons.
- The achievement of vehicle trip reduction levels as specified in Table 5. Essential in obtaining these vehicle trip reductions are the following:
  - TDM programs, as specified in the TDM section of the Plan.
  - Achievement of transit modal split levels as specified in Table 2.
  - Limitations to the provision of parking as specified in Table 6.

- Increasing the amount of residential development in Tysons as specified in the Land Use section of the Plan.
- Excellence in urban design, successful integration with Metro stations, and the achievement of the mix of uses and the facilities which creates the largest possible internal trip capture.
- A monitoring system (see “Monitoring System” on following pages below) to verify that strategies 1 and 2 are realized as planned and apply timely adjustments if there are variations from the recommendations on how a balance will be maintained.

Considering the importance of successfully implementing these strategies, property owners should commit to the following transportation conditions:

- Achievement of transportation infrastructure and programs for various levels of development as specified in Table 7. This can be accomplished by:
  - Participation in the financial mechanisms established for Tysons as provided in the section entitled “Funding for Transportation Improvements”
  - Phasing development to the required transportation infrastructure and programs, and/or
  - Phasing development so that the required transportation infrastructure and programs as determined at the time of zoning be fully funded with a mechanism in place to ensure construction within the required time period as specified in Table 7. Full funding can be achieved by forming and/or participating in a Community Development Authority (CDA), coincident with a zoning application that is of appropriate size and scope and commits to the provision of an acceptable level of funding to address the transportation improvement responsibilities of the CDA. The transportation improvement responsibilities for a particular CDA will consist of one or more applicable Tysons-wide projects and all applicable District projects as determined by analysis at the time of zoning. Funding responsibility should be achieved with 100% of funding provided by the CDA or provided by a combination of CDA and public funds. The applicable CDA should meet the following requirements:
    - The required and applicable legal, financial, and administrative principles that clearly defined the scope, functions, and goals of the CDA should be finalized and approved by the County Board of Supervisors.
    - A memorandum of understanding should be approved by the County Board of Supervisors and be in place at the time of the zoning application.
- A demonstrated ability to achieve vehicle trip reduction levels as specified in Table 5.
- If a balance cannot be achieved using the methods described above, contributions should be considered to additional transportation improvements, such as the projects identified in Table 7B.

Recommendations for phasing development in Tysons to transportation improvements and objectives can be found in the Land Use Recommendations.

Table 7 and 7B provides the required transportation infrastructure, programs, and services as Tysons grows over time. Table 7 was based on the initial transportation analysis of Tysons conducted prior to the adoption of the Tysons Comprehensive Plan Amendment in June 2010. Subsequently, a more detailed analysis, the Consolidated Traffic Impact Analysis (CTIA<sup>2</sup>s), was conducted in 2013. In addition, the future land-use allocation in the Tysons

station areas were adjusted based on preliminary information obtained from zoning applications. This resulted in additional projects listed in Table 7B. These projects were not added to Table 7 since the current funding plan for transportation improvements is based on Table 7. Projects recently completed, A number of projects, including the construction of Phase I of the Metrorail Silver Line, the construction of the Express HOT lanes on I-495, as well as associated ramps, are scheduled to be completed by 2013 and represents a significant investment in transportation.

**Table 7  
 Transportation Infrastructure, Programs, and Services,  
 As They Relate to the Level of Development in Tysons**

Type of Transportation Program or Infrastructure Project	Description of Transportation Program or Infrastructure Project	Area Served by Improvement
<b>I. Transportation Improvements To Be Completed by 2013</b>		
<b>A. Transit and Pedestrian Improvements</b>		
Rail Transit Routes	Complete Phase I of Metrorail Silver Line Phase I	Tysons-wide/ Countywide
Bus transit routes	Neighborhood bus routes; circulator bus routes serving Metrorail stations; express bus routes on I-66 and I-95/I-495	Tysons-wide/ Countywide
Sidewalks	Sidewalks to provide connections to developments within walking distance of rail stations (TMSAMS and others)	District
<b>B. Tysons-wide Road Improvements</b>		
Roads – Arterial Widening	Complete widening of Rt. 7 to 8 lanes from the Dulles Toll Road to Rt. 123	Tysons-wide
Roads – Freeway Widening	Widen I-495 from 8 to 12 lanes to provide 4 Express HOT-lanes between the Springfield Interchange and the American Legion Bridge	Tysons-wide/ Countywide
Roads – Freeway Ramp	Express Lane HOT ramp connecting to Jones Branch Drive	Tysons-wide
Roads – Freeway Ramp	Express Lane HOT ramp connecting to the Westpark Drive Bridge	Tysons-wide
Roads – Freeway Ramp	Express Lane HOT ramp connecting to Rt. 7	Tysons-wide
<b>C. TDM Measures</b>		
TDM	Application of aggressive TDM measures (e.g. 45% reduction in vehicle trips for an office development within 1/8 mile of a Metrorail station)	District
<b>II. Required Additional Transportation Improvements to Accommodate 60 Million sq. ft. of Development (20143 – 2020)</b>		
<b>A. Transit Improvements</b>		
Rail Transit Routes	Completion of Phase II of Metrorail Silver Line (from the Wiehle/Reston East Metrorail Station Avenue to west of Dulles Airport with three stations in Fairfax County)	Tysons-wide/ Countywide
Bus Transit Routes	Further improvements to neighborhood bus routes; circulator bus routes serving Metrorail stations; express bus routes on I-95/I-495 I-66 and additional express bus service on I-66, 95/I-495	Tysons-wide/ Countywide
<b>B. Tysons-wide Road Improvements</b>		
Roads – Arterial Widening	Widen VA 123 to 8 lanes from Rt. 7 to I-495	Tysons-wide
Roads – Arterial Widening	Widen VA 123 from 4 to 6 lanes between Rt. 7 and Old Courthouse Road	Tysons-wide
Roads – Arterial Widening	Widen Rt 7 from 4 to 6 lanes between I-495 and I-66	Tysons-wide
Roads – Arterial Widening	Widen Rt. 7, from 6 to 8 lanes, from Rt. 123 to I-495	Tysons-wide
Roads – Arterial Extension	Extend Boone Boulevard from Boone Boulevard to Northern Neck Drive	Tysons-wide
Roads – Arterial Extension	Extend Greensboro Drive from Spring Hill Road to Tyco Road	District
Roads – Freeway Ramp	Ramp connecting Greensboro Drive extension to westbound Dulles Toll Road	Tysons-wide
Roads – Freeway Ramps	Ramps connecting Boone Blvd. extension to westbound Dulles Toll Road and eastbound Dulles Toll Road to Boone Blvd. extension.	Tysons-wide
Roads – Freeway Widening	Collector – distributor roads along the Dulles Toll Road from Greensboro Drive extension to Hunter Mill Rd.	Tysons-wide
Roads – Connecting Bridge/Ramp	Bridge/Ramp connecting Jones Branch Drive to Scotts Crossing Road	Tysons-wide
Roads – Arterial Widening	Widen Rt. 7, from 4 to 6 lanes, from the Dulles Toll Road to Reston Avenue	Tysons-wide
<b>C. Grid of Streets</b>		
Roads – Grid of Streets	Grid west of Westpark Drive	District
Roads – Grid of Streets	Grid bounded by Gosnell Rd., Rt. 7, and Rt. 123	District
Roads – Grid of Streets	Grid connections to Greensboro Drive	District
Roads – Grid of Streets	Grid of streets east of I-495	District
<b>D. TDM Measures</b>		
TDM	Application of aggressive TDM measures (e.g. 45% reduction in vehicle trips for an office development within 1/8 mile of a Metrorail station)	District

<b>E. Misc. Improvements</b>		
Bicycle Access Points	Bicycle connections into and out of Tysons	Tysons-wide
Roads and Intersection Spot Improvements	Intersection improvements outside of Tysons as identified in the Neighborhood Traffic Impact Study and other studies	Tysons-wide
Metrorail Station Access	Access improvements as identified in the Tysons Metrorail Station Access Management Study	Tysons-wide

**Table 7 (Continued)**

Type of Transportation Program or Infrastructure Project	Description of Transportation Program or Infrastructure Project	Area Served by Improvement
<b>III. Required Additional Transportation Improvements to Accommodate 84 Million sq. ft. of Development (2020 – 2030)</b>		
<b>A. Transit Improvements</b>		
Bus Transit Routes	Further improvements to neighborhood bus routes; circulator bus routes serving Metrorail stations; BRT routes on I-66 and I-95/I-495	Tysons-wide/ Countywide
<b>B. Tysons-wide Road Improvements</b>		
Roads – Arterial Widening	Widen VA 123 to 8 lanes from Rt. 7 to I-495	Tysons-wide
Roads – Arterial Widening	Widen VA 123 from 4 to 6 lanes between Rt. 7 and Old Courthouse Road	Tysons-wide
Roads – Arterial Widening	Widen Rt 7 from 4 to 6 lanes between I-495 and the City of Falls Church	Tysons-wide
Roads – Arterial Extension	Extend Boone Boulevard from Boone Boulevard to Northern Neck Drive	Tysons-wide
Roads – Arterial Extension	Extend Greensboro Drive from Spring Hill Road to Tyco Road	District
Roads – Freeway Ramp	Ramp connecting Greensboro Drive extension to westbound Dulles Toll Road	Tysons-wide
Roads – Freeway Ramps	Ramps connecting Boone Blvd. extension to westbound Dulles Toll Road and eastbound Dulles Toll Road to Boone Blvd. extension.	Tysons-wide
Roads – Freeway Widening	Collector – distributor roads along the Dulles Toll Road from Greensboro Drive extension to Hunter Mill Rd.	Tysons-wide
Roads – Collector Widening	Widen Magarity Road from 2 to 4 lanes from Great Falls Street to Rt. 7	Tysons-wide
Roads – Arterial Widening	Widen Gallows Road from 4 to 6 lanes from Rt. 7 to I-495	Tysons-wide
Roads – Connecting Road	Beltway crossing connecting the Tysons Corner Center area to Old Meadow (limited to transit, pedestrians and bicyclists)	Tysons-wide
<b>C. Grid of Streets</b>		
Roads – Grid of Streets	Substantial sections of the grid of streets	District
<b>D. TDM Measures</b>		
TDM	Application of aggressive TDM measures (e.g. 55% reduction in vehicle trips for an office development within 1/8 mile of a Metrorail station)	District
<b>E. Road Safety Improvements</b>		
Roads – Collector Safety Improvement	Improve and enhance the safety of Old Courthouse Road from the Town of Vienna to Gosnell Road	District
<b>F. Misc. Improvements</b>		
Bicycle Access Points	Bicycle connections into and out of Tysons	Tysons-wide
Roads and Intersection Spot Improvements	Intersection improvements outside of Tysons as identified in the Neighborhood Traffic Impact Study and other studies	Tysons-wide
Metrorail Station Access	Access improvements as identified in the Tysons Metrorail Station Access Management Study	Tysons-wide
<b>IV. Required Additional Transportation Improvements to Accommodate 113 Million sq. ft. of Development (2030 – 2050)</b>		
<b>A. Transit Improvements</b>		
Improved Transit	Additional BRT routes, other supporting services including park-and-ride, feeder bus routes to rail stations	Tysons-wide/ Countywide
Urban Transit Corridors	At least two additional urban transit corridors with substantial TOD development: Orange Line Metrorail extension and an additional rail extension	Tysons-wide/ Countywide
<b>B. Tysons-wide Road Improvements</b>		
Roads – Freeway Widening	Widen I-495 (Outer Loop) between Rt. 7 and I-66 by one lane	Tysons-wide



Roads – Freeway Ramps	Ramps connecting Jones Branch Drive to westbound Dulles Toll Road and eastbound Dulles Toll Road to Jones Branch Drive.	Tysons-wide
<b>C. Grid of Streets</b>		
Roads – Grid of Streets	Completion of the grid of streets	District
<b>D. TDM Measures</b>		
TDM	Application of more aggressive TDM measures (e.g. 65% reduction in vehicle trips for an office development within 1/8 mile of a Metrorail station)	District

Note: The order of priority of improvements specified in this table may change based on the geographic location of development when compared with what was assumed in the analysis from which this table was constructed.

**Table 7B8**  
**Transportation Infrastructure Resulting from Changes in Land Use Distribution and Resulting from Further Analysis and Planning of the Grid of Streets**

<u>Type of Transportation Program or Infrastructure Project</u>	<u>Description of Transportation Program or Infrastructure Project</u>	<u>Area Served by Improvement</u>
<b>Required Additional Transportation Improvements to Accommodate 84 Million sq. ft. of Development (2020 – 2030)</b>		
<b>Road Improvements</b>		
<u>Roads: Intersection Improvements</u>	<u>Modified Intersection Treatment (Superstreet)s configurations along Route 123 between International Drive and the Dulles Access Road overpass.</u>	<u>Tysons-wide</u>
<u>Roads: Interchange and grid of streets integration</u>	<u>Changes to the northwest quadrant of the interchange where Route 123 connects with the Dulles Access Road. These changes will tie in the grid of streets with the endpoint of the ramp from eastbound Dulles Access Road to Road 123.</u>	<u>Tysons-wide</u>
<u>Roads: Intersection Improvements</u>	<u>Improvements to the connection of Magarity Road and Route 7.</u>	<u>Tysons-wide</u>
<u>Roads: Intersection Improvements</u>	<u>A grade separation along Route 123 at the Lewinsville Road and Great Falls Road intersection.</u>	<u>Tysons-wide</u>
<u>Roads: Interchange reconfiguration</u>	<u>A reconfiguration of the Route 123 / Route 7 interchange to allow additional capacity.</u>	<u>Tysons-wide</u>
<u>Roads-Freeway Ramp</u>	<u>Gallows Rd. at Gallows Branch, to I-495 Southbound Ramp</u>	<u>Tysons-wide</u>

### Monitoring System

Maintaining a balance between land use and transportation is dependent on a number of factors as indicated above. The necessary transportation infrastructure, modal split levels, and vehicle trip reduction levels to maintain this balance have been determined by means of extensive analyses. Analyses are based on known conditions at the time of writing this plan text. However, these conditions include human behavior and a number of exogenous factors that are subject to change over time. Factors that might change over time could include, but not be limited to, the average square feet of office space assumed for each employee, the use of automated vehicles or other advancements in technology.

Changes to these factorseconditions might change in the future which could result in unforeseen changes toin trip-making behavior that can't be anticipated today. Identifying and monitoring changes, as well as periodically evaluating monitoring practices, will help to improve the efficiency of the transportation system. In addition, it will provide decision makers with the timely information they need to start long-lead programming and funding work on transportation projects identified in Table 7 and 7B, and help to better manage the relationship between land-use and transportation between now and 2050.

### **Analysis of Monitoring Results and Corrective Measures**

The monitoring of the transportation demand side and supply side should provide an assessment of existing conditions and an updated projection of future conditions in terms of maintaining a balance between land use and transportation. The early identification of future variations from the planned coordination between land use and transportation, as shown in Tables 7 and 7B, schedule provides an opportunity to react in a timely manner to allow the necessary adjustments to be made. It might be necessary to conduct an analysis of changes in travel behavior, results from the Annual Report, and the success of TDM programs to determine cost effective measures to correct the projected imbalance between land use and transportation.

Possible corrective measures are:

- The use of TDM Remedial and Contingency Funds to increase TDM activities.
- ChangesAn increase in funding sources and facility user charges.
- Congestion pricing.
- An amendment to the Plan to modify Plan intensities and/or mix of uses.
- Changes in the order/timing of transportation project implementation.

### Funding for Transportation Improvements

The transportation improvements listed ~~above~~ in Table 7 require a significant capital investment, as well as on-going operating investment for increased transit services. A variety of both public and private sector funding options will be used. need to be pursued to implement these improvements. A key factor in the implementation process is the ability to generate stable and ongoing sources of funding, both public and private, for these transportation improvements.

Past efforts have demonstrated that innovative public-private financing options for funding transportation improvements can be effective. A majority of theThe local portion of Phase I of the Dulles Metrorail Project is being funded through a tax district. Numerous small-scale improvements in Tysons-Corner have been funded over the years through the Tysons Transportation Fund, a voluntary contribution for new commercial development. ~~In 2009, the~~

rate for this contribution was \$3.87 per square foot for non-residential development and \$859 per unit for residential development adjusted annually for inflation. However, this fund does not provide a stable and ongoing source of private sector funding. Moreover, it would generate only a small percentage of the funding needed for the improvements listed in Table 7 that are required for the continued development of Tysons Corner. As part of an overall strategy for funding transportation needs, the contribution rate for the Tysons Transportation Fund should be reassessed.

In March of 2011, the Board directed the Planning Commission to engage in an inclusive process to address funding the Table 7 items. With a goal of developing a comprehensive solution for funding infrastructure improvements, while allowing for flexibility in funding options and sources and for adjustments to be made based upon the actual pace of development, the Planning Commission provided 31 recommendations to the Board. The Board endorsed the Planning Commission's transportation funding plan and ultimately approved a series of motions implementing the funding plan for Tysons on January 8, 2013. Key components to the Tysons Funding Plan are as follows:

- Tysons Grid of Streets Transportation Fund: One key component of the funding plan is for redevelopment to provide or fund the local grid of streets. To this end, the Board established the Tysons Grid of Streets Transportation Fund and set guidelines for how to implement the fund. The contributions to this fund will pay for offsite grid links in Tysons where no redevelopment is planned or occurring. Contributions will be made on a per square foot basis for commercial property or a per unit basis for residential property. Revenue will be received as development occurs.
- Tysons-wide Transportation Fund: Another key component of the funding plan is to identify multiple sources of revenue to fund the Table 7 Tysons-wide transportation improvements. Table 7 improvements are intended to be funded by a variety of private and public sources, including state and federal funds. The Board created a new transportation fund, the Tysons-wide Transportation Fund, to collect revenue from redevelopment applications to fund a portion of the Table 7 projects. The funds collected will supplement other funding sources for the Table 7 improvements. Contributions will be made on a per square foot basis for commercial property and on a per unit basis for residential property. Revenue will be received intermittently as development occurs.
- Tysons Transportation Service District: To provide a stable, and consistent, source of revenue for the Table 7 Tysons-wide projects, the Board established the Tysons Transportation Service District. The Tysons Transportation Service District is a special tax assessment district which collects revenue based upon the assessed value of all properties within the district. Revenue generated by the district may only be used for transportation improvements within the service district. The Board also created the Tysons Transportation Service District Advisory Board (TTSDAB) to work with Fairfax County staff and provide input to the Board on the annual tax rate for the Tysons Transportation Service District; transportation project priorities for projects funded all or in part by the Tysons Transportation Service District; issues related to the newly established Tysons road funds; and, potential new and alternative sources of revenue for transportation improvements.
- The Board has expressed their desire to utilize C&I taxes, as well as revenue generated from HB2313 (Revenues and appropriations of State; changes to revenues collected and distribution) to fund projects.

In addition to the funds detailed above, the Board directed staff to continue to proactively seek federal, state, and other funding opportunities and to maximize revenue from state and federal funding partners, so as to minimize the impacts of funding the transportation infrastructure on County taxpayers.

A number of the necessary transportation improvements will be constructed as development occurs by the responsible developer. For instance, it is anticipated that the vast majority of the grid of streets so essential for the vision of the future Tysons Corner will be built by the private sector as development occurs.

Other innovative funding mechanisms are required to generate sufficient funds to implement the improvements in Table 7. Community Development Authorities (CDAs) are expected to play a key role in generating the dedicated and ongoing funding that will be needed. Both a Tysons wide CDA and a number of smaller district level CDAs are anticipated to be formed and provide a critical source of funding for transportation improvements. For those improvements categorized as Tysons wide, a combination of public funds and funds from a Tysons wide CDA would be used. For those improvements categorized as District, a combination of public funds and funds from a smaller CDA would be used.

Overall, there is an identified need for increased funding of transportation improvements and services in order to achieve the vision for the future of Tysons Corner. Increased public sector funding from all sources and innovative private sector sources of funding, including continuation of the Tysons Transportation Fund and the formation of CDAs, are necessary.

#### Funding for Table 7B Improvements

As the Tysons Transportation Funding Plan was being developed by the Planning Commissioners, staff was continuing to work on the Consolidated Traffic Impact Analysis (CTIA) to better define the transportation improvements that will be funded to support the amount of development approved by the Board of Supervisors as part of the Tysons Comprehensive Plan Amendment in June of 2010. The CTIA's identified five additional projects that will be needed to support the planned level of development in Tysons. Since the Tysons Transportation Plan had already been signed, and applies solely to the projects listed in Table 7, these additional projects were not included in the plan. These projects will be funded from other sources. The sources include local, regional, state and federal funding, as well as additional contributions from developers as part of the rezoning process. Several developers have already made funding commitments for specific projects on Table 7B.