6: TRANSPORTATION

Today, Tysons is a place designed exclusively for cars. Transportation in the future must give people choices for getting around Tysons. That means balancing moving automobile traffic more efficiently to and from Tysons with moving people within Tysons via an enhanced connected network of walkable streets, bike lanes, and a robust transit network. The arrival of four Metrorail stations offers an opportunity to create a well-balanced, interlinked, multimodal transportation network in Tysons.

Creating a livable and walkable place will require that the needs of pedestrians, bicyclists, and an effective circulation system be given priority in many circumstances over the need to move automobiles quickly and efficiently. Streets are not just for vehicles; they also help define the quality of the public realm. Remaking Tysons into a great urban center will require demoting the car as the prime focus of transportation planning for Tysons.

In order to be successful, a fundamental transformation of Tysons' transportation system will be required. Several transportation elements will be created and/or enhanced. The current superblock street network will be transformed into a manageable grid of streets to direct local traffic onto local streets and create more pathways for traffic flow and a safe, accessible pedestrian and bicycle environment. Streets will become complete streets, designed to create a sense of place and promote walking. The transit system will serve regional trips with Metro and buses to Tysons. For trips within Tysons, a circulator system will allow frequent, quick and inexpensive movement within Tysons and easy connections to regional transit systems. Community bus shuttles to Tysons will connect other parts of the region to Tysons. Enhancements to the automobile network, such as improved Beltway crossings and grade separations will separate the through automobile traffic, making the transportation options for those moving within Tysons safer.

Redesigning the transportation network to focus on transit requires:

- Improved mobility within Tysons with greater mode choice
- A system of circulators
- Regional connectivity
- New urban standards for all streets and roads

METRORAIL

The extension of Metrorail into the Dulles Corridor, with four stations located within Tysons, will offer mobility and accessibility from all portions of the region to Tysons. More importantly, Metrorail will

provide the necessary alternative to the automobile in order for Tysons to retain its economic viability and achieve its full potential by transporting 50,000 people to and from Tysons on a daily basis. The Metrorail service will provide greater opportunities for people to reside in Tysons and use transit for much of their daily travel.

Many actions will be undertaken to improve mobility and accessibility within Tysons. The Metrorail extension cannot do it on its own. The transportation network within Tysons will be transformed into a pedestrian-friendly network that moves people safely and efficiently. A finer grid of streets will be developed with streetscapes that provide a quality walk environment. The Metrorail stations must be developed in concert with the components of the land use and transportation concept plan to include (1) a finer grid of streets, (2) grade-separated crossings, and (3) pedestrian connectivity. Successful integration of the stations with the land use concept and the transportation network is the only way to achieve a vibrant, 24-hour, mixed use, transit oriented development, and to fully realize the benefit the investment in Metrorail. Transit services, complementary to Metrorail, should be introduced and be operational as Metro begins its passenger service by 2014. These services will not only provide circulation within Tysons, but also provide feeder services from the surrounding communities of McLean and Vienna to Metrorail and commercial and retail activities in Tysons. Context sensitive design solutions will be necessary to calm traffic and provide for a pedestrian and bicycle network supportive of the proposed land uses.

GRID OF STREETS

Tysons currently consists of large (super) blocks with a relatively small number of streets. This places excessive reliance on the street system to move vehicle traffic, and the large block size inhibits transit use, pedestrian and bicycle movement. A finer grid of streets with smaller block size is typical in urban areas. It disperses vehicle traffic and enhances the ability of pedestrians and bicyclists to share the road. A smaller block size will make a more walkable Tysons by creating convenient and short walk distances. The finer scale of development provided by the short blocks and grid of streets will be the armature for the future Tysons. The recommended grid of streets concept is shown on Map 4.

The enhanced grid of streets concept will provide for greater network density and more direct connections between various locations as well as better accommodating both cars and pedestrians. It will be based on a fine network of small streets and roads, providing options of streets for people to choose from, not just a few major arterials. Research and experience indicates that the pattern of streets in an area greatly influence travel patterns in a community. In areas with a tight grid of streets and a mix of land uses, people use transit more and take up to half as many auto trips than their neighbors in typical suburbs.

Great Streets

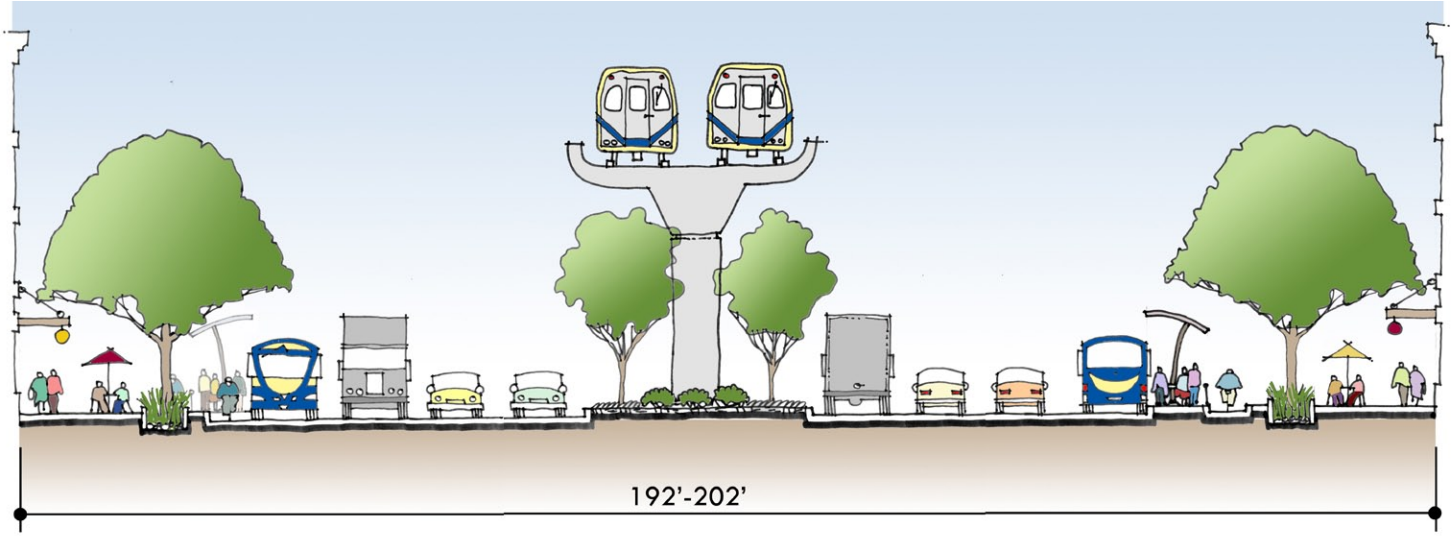
The interplay between human activity and the physical space created by streets and buildings has an enormous effect on making a complete street. Allan Jacobs, in his influential work "Great Streets," describes several key criteria of complete streets, including:

- Are memorable and "magical;"
- Help make community;
- Are defined, engaging to the eye, and artful;
- Support social contact and participation;
- Are physically comfortable and safe; and
- Exhibit quality design, construction, and maintenance.

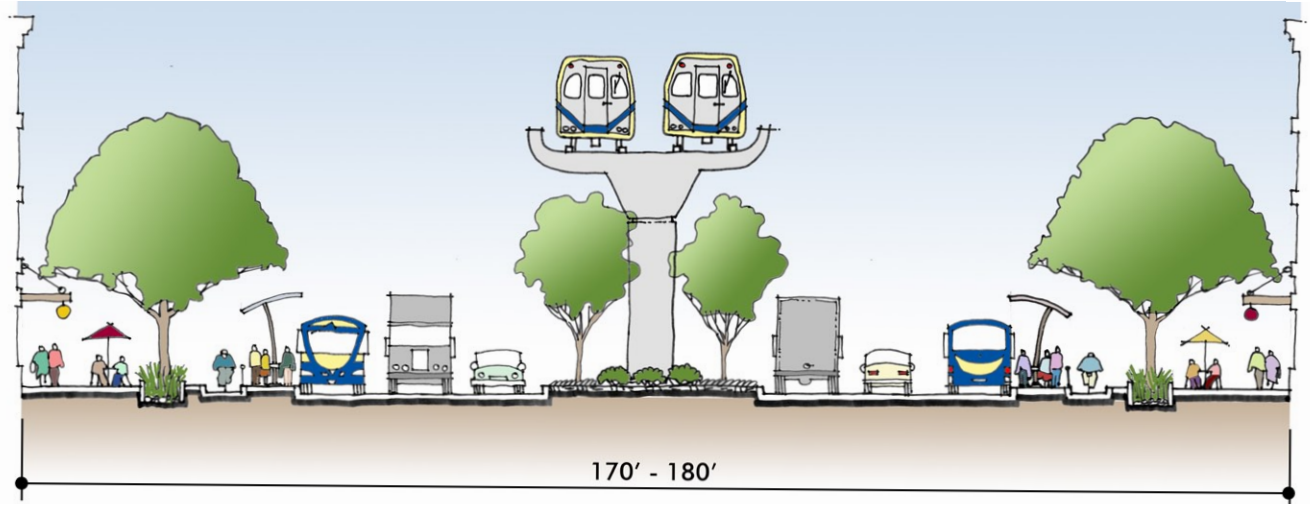
The fundamental transformation of transportation in Tysons is needed starting with urban street standards.

The grid of streets will 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. The hierarchy of streets identified on the grid of streets map includes:

1. **Arterial -** Arterial streets will be the most important multi-modal connectors and thoroughfares within Tysons. In addition to carrying the biggest volume of automobile traffic they also will accommodate the Metrorail, circulator, bus, bike, and pedestrian modes within their rights-of-way. Route 7 and Route 123 will be the two major arterials within Tysons, connecting Tysons with the surrounding communities and the rest of the metropolitan region via Dulles Toll Road and the Beltway.

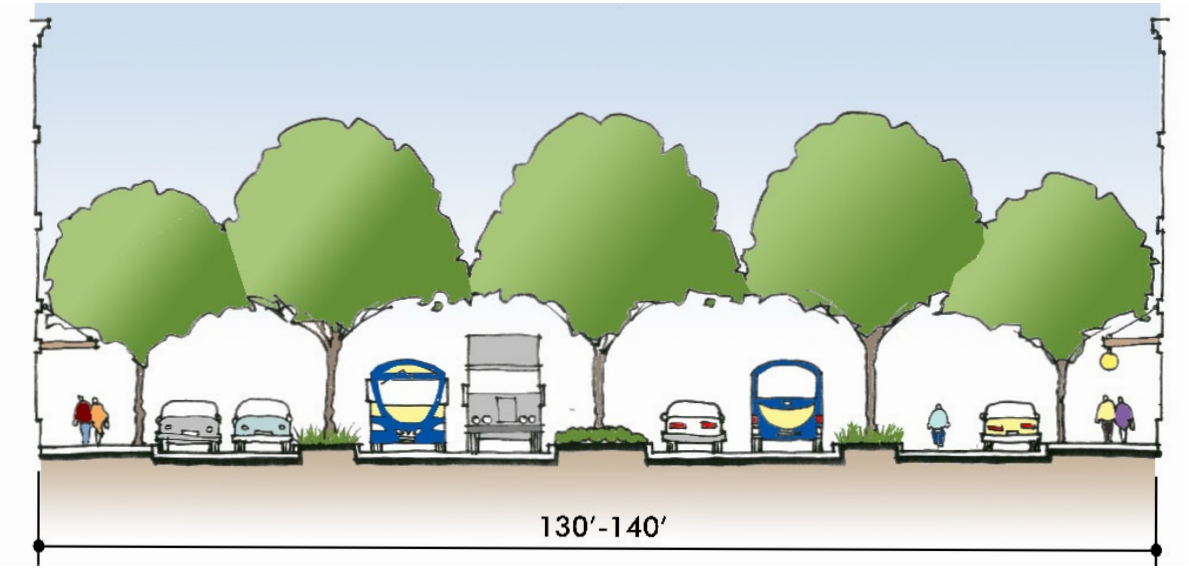


Arterial Street 1

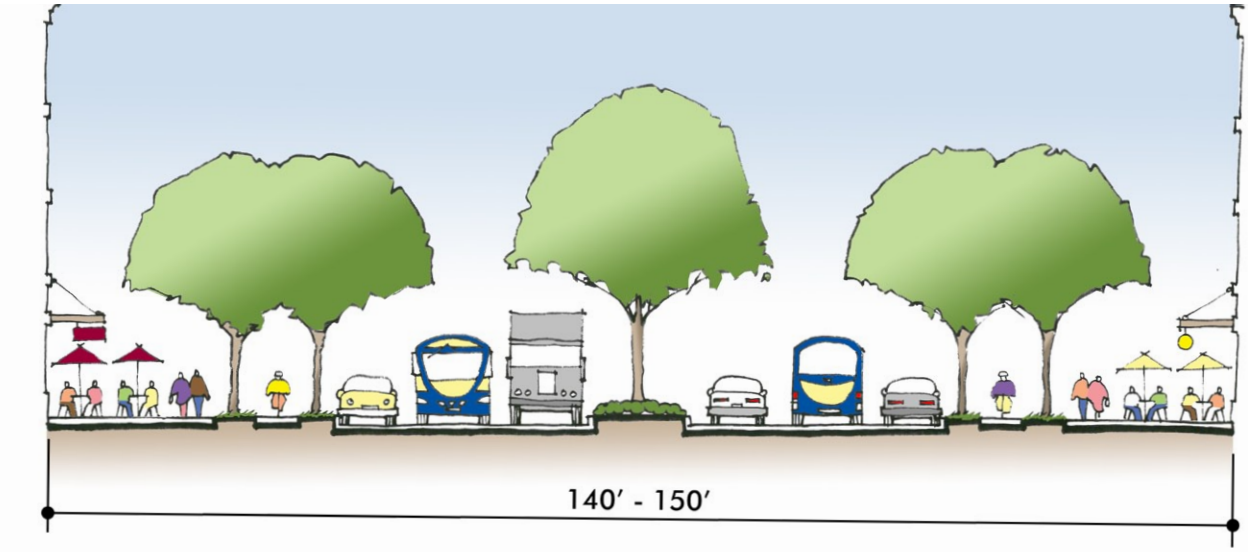


Arterial Street 2

2. **Boulevard -** Boulevards within Tysons will play a very important role in taking the pressure off of the major arterials and helping them become pedestrian friendly multi-modal streets instead of asphalt barriers possessed by zooming auto traffic. Portions of Boulevards will also accommodate circulators and provide desirable addresses to new business and residential development. Boone Boulevard extension and International Drive are two examples of boulevards that will be within Tysons.
3. **Avenue -** Avenues will be relatively lower volume streets extending into the interior of Tysons and connecting the residential and employment uses in the non-station areas with the Metro station areas. Uses and character of minor arterials 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 minor arterials could also accommodate circulators on shared or dedicated lanes. Spring Hill Road, Jones Branch, Westpark Drive and Old Meadow Road are a few examples of Avenues that will be within Tysons.



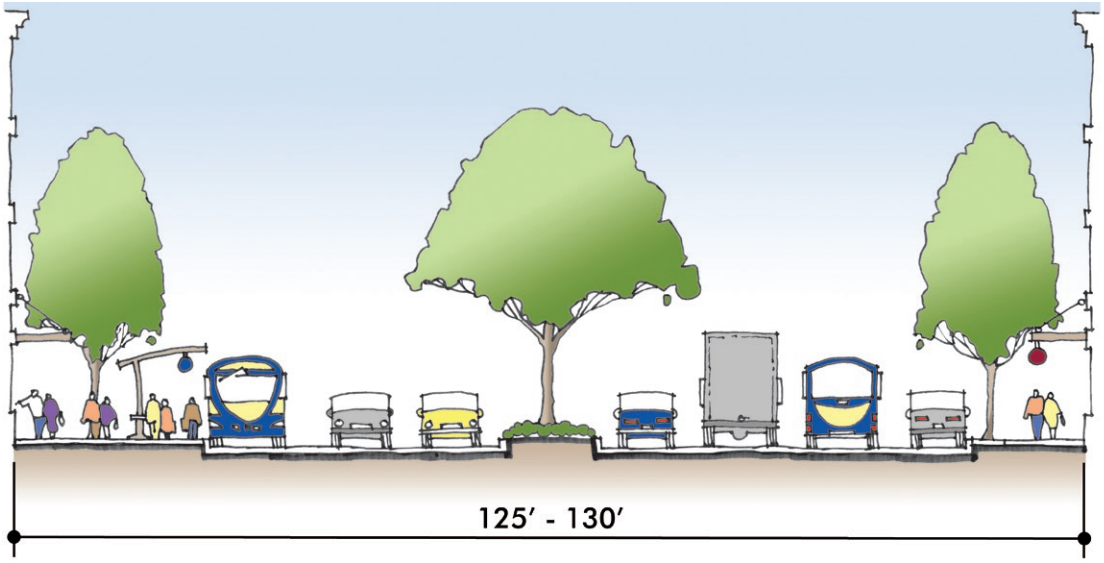
Boulevard



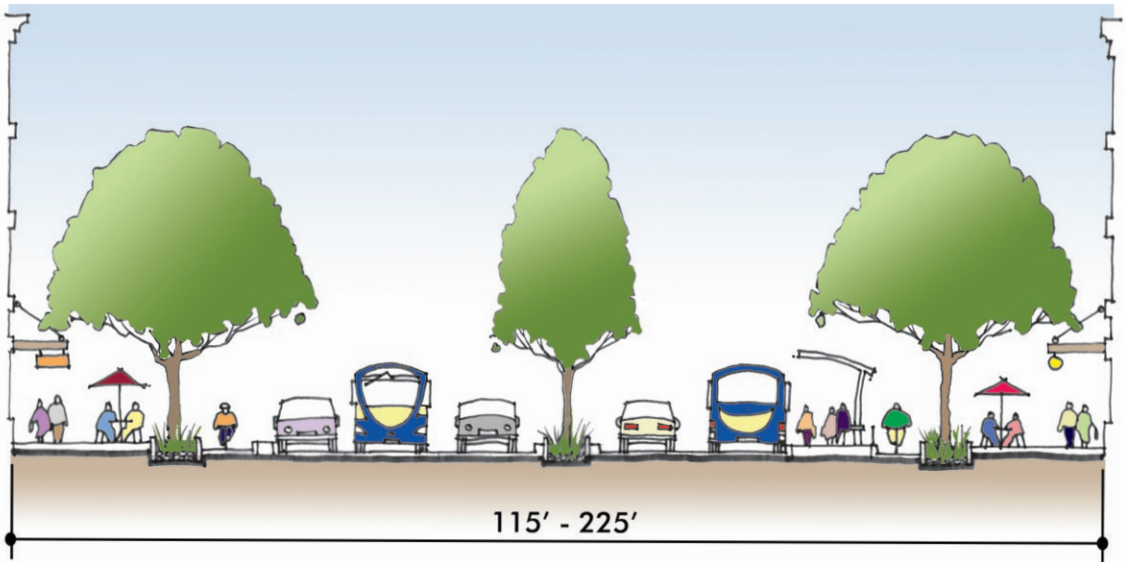
Avenue 1

All new streets and roads in Tysons need to use urban standards.

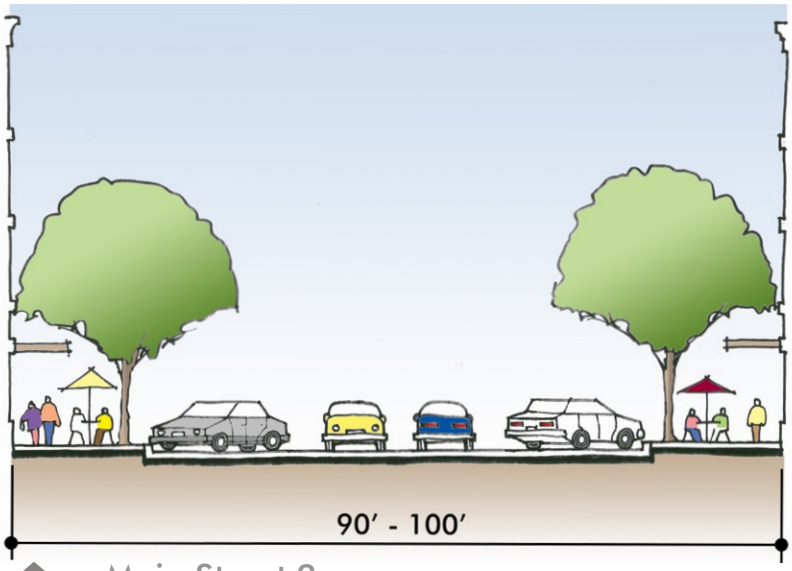
4. **Main Street -** Main streets or retail streets within Tysons will be special streets generally extending almost a quarter-mile out perpendicular to the stations or within close proximity of the station areas. They will carry very slow-moving traffic with retail uses such as restaurants, coffee shops, and bookstores on either side at street level and office or residential uses on upper levels.
5. **Local Street -** Local streets will be generally the lowest volume streets within Tysons. They carry slow-moving traffic and will have frequent crosswalks, stop signs and other traffic calming elements. They will serve residential or employment uses on either sides with entrances and windows opening on the sidewalks. Local streets will typically connect with boulevards, and avenues.



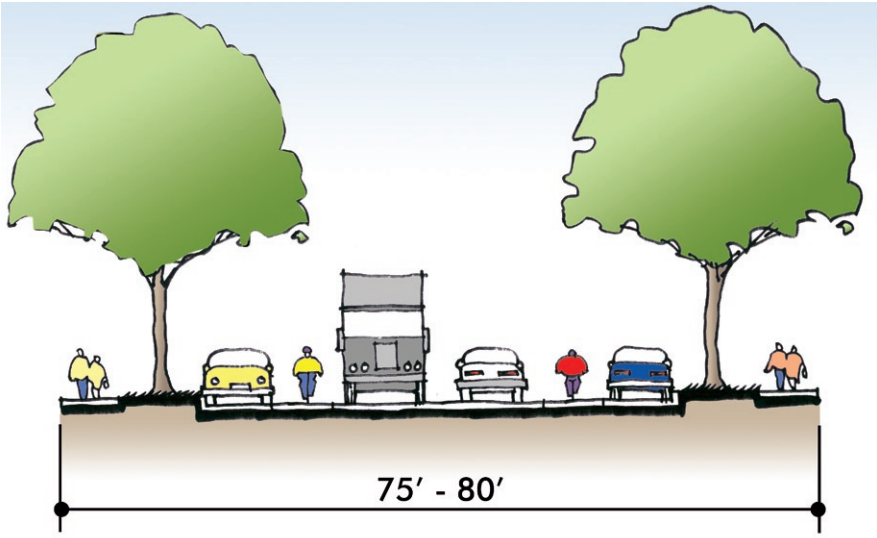
Avenue 2



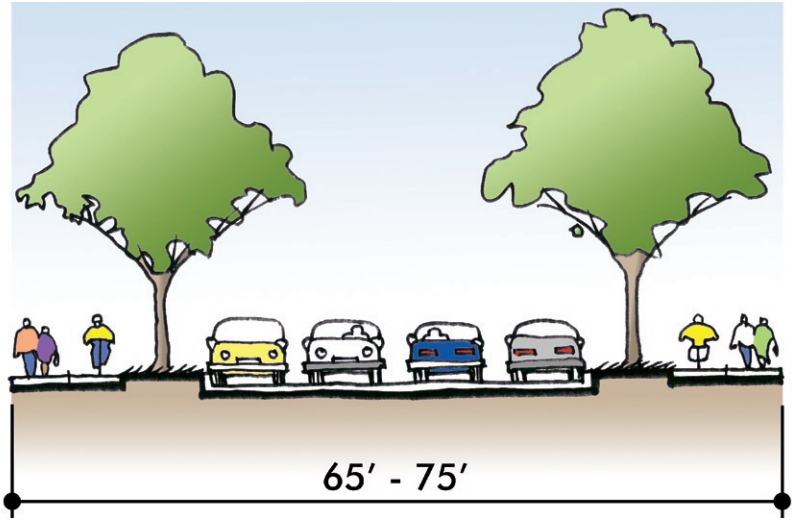
Main Street 1



Main Street 2



Local Street 1



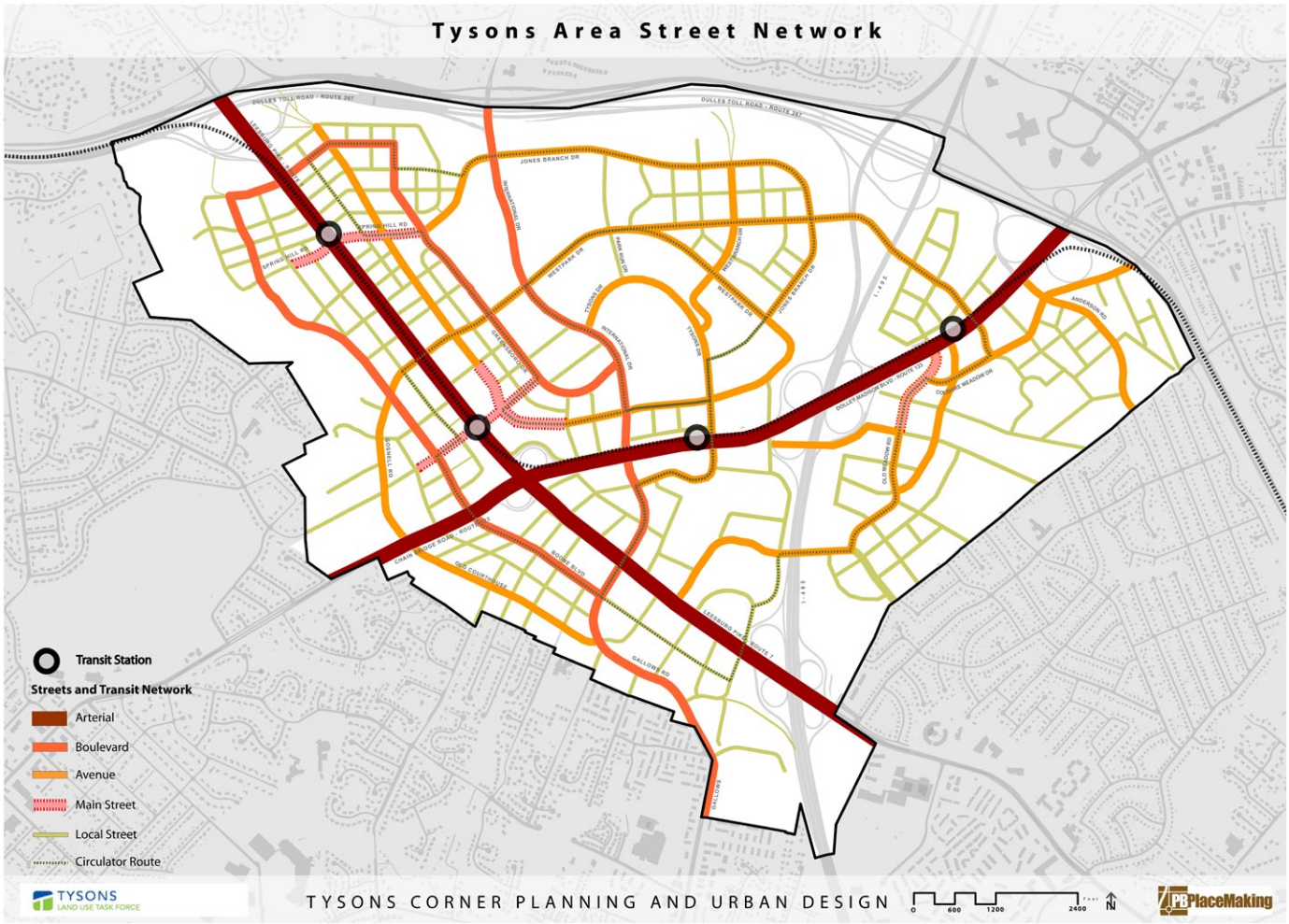
Local Street 2

Aligning Circulators and Land Use

Planning and implementation of a successful circulator system involves many small decisions to assure development is consistent with TOD best practices:

- Moderate to high densities, relative to the existing pattern of development, along the circulator corridor;
- A mix of land uses, horizontally or vertically;
- Compact pedestrian-oriented design and streetscapes;
- Building design and street orientation to allow easy pedestrian and transit access; and
- A fine-grained connected street pattern.

In addition to these best practices, for development to be transit-oriented, parking, density, and building orientation needs to be shaped by the circulator in comparison to conventional development practices. It is not enough that it is just adjacent to the circulator.



CONCEPTUAL MAP 5- A fundamental transformation of Tysons transportation is required with a network of walkable streets, bike lanes, and a robust transit system

In addition to the above streets, residential streets will be located throughout Tysons and will be an important element of the grid of streets. The location and design of residential streets will be addressed with the creation of the district plans. Streets in Tysons will be designed as complete streets, addressing the pedestrian experience and contributing to creating great places. In a TOD, streets will need to be great places for walking, for commerce, for casual interaction and for moving traffic.

Urban design guidelines for streets, including enhanced pedestrian elements, such as sidewalks buffered from traffic by street trees, and bicycle enhancements, such as separate bike lanes, address the elements of a complete street. Although typical street cross sections are included for the hierarchy of streets descriptions (above), keep in mind that final street designs may include some slight variations (such as lane or sidewalk width, building setback, etc.) reflective of the changing context of the street as it passes through the many neighborhoods and districts within Tysons. Details regarding the street types and streetscapes included in the grid of streets are provided in Chapter 9, Urban Design Guidelines.

SYSTEM OF CIRCULATORS

In order to get around Tysons quickly and conveniently without an automobile, including traveling to and from Metrorail, a system of circulators will be essential. The circulators will provide sustainable, efficient, effective and environmentally friendly transit service by connecting local destinations with Metrorail stations. They will target

retail and other non-work trips, such as errands that need to be run during the work day. The circulators provide the opportunity to be "form-giving", meaning that increased densities and a mix of uses within 600 feet of the circulator route can give more people access to the regional rail system without getting into their cars, making it more likely that people who live or work beyond walking distance of a Metrorail station will chose to take transit.

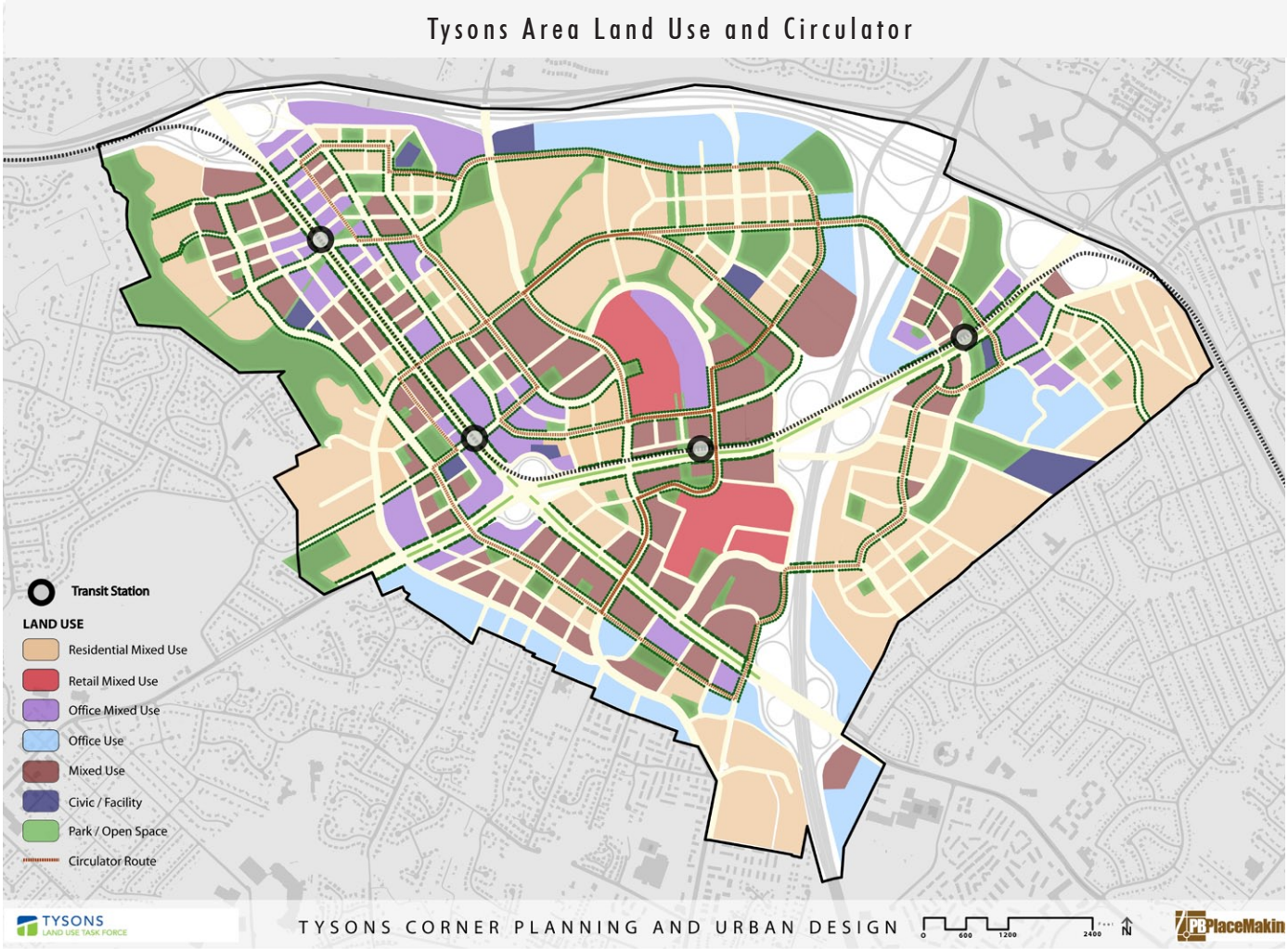
A system of three circulator routes will be proposed to connect most of Tysons, specifically the North Central, East Side and Old Courthouse districts, with the four Metrorail stations and other districts in Tysons. To facilitate use of the circulator, it will be integrated with all other transit serving 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 for as much of the proposed routes as possible. The conceptual circulator routes are shown on Map 5. The map shows the general location of the circulator routes: the ultimate alignment may shift based upon the ease of acquiring the necessary right-of-way.

The final "form-giving" circulator routes will address the following guidelines:

- The circulators should extend the reach of the Metrorail System and connect the various districts within Tysons.
- Each circulator route should connect with at least two Metrorail Stations.
- The connection with the Metrorail station should be as close as possible to the station entrance. If the circulator route cannot be adjacent to the station entrance, a clear visual connection should be maintained for the convenience and perceptions of the users.
- The circulator system should increase all non-auto trips. In addition to increasing transit mode share and decreasing vehicle use by making travel within Tysons as well as travel to and from Tysons more attractive, circulators work as a pedestrian accelerator, making walking more convenient and easy.
- The circulator route 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.
- Development on the circulator route that approaches the edge of Tysons will be subject to height limitations.
- Some overlap of circulator routes will be desirable to facilitate car maintenance if a fixed guideway system is implemented.
- The circulators will reflect industry best practices.
- The circulators should operate in their own dedicated right-of-way for as much of the proposed routes as possible. Dedicated right-of-way for the circulators can be curb side or in the median of the road. If the circulators use a median (existing or planned), the need for additional right-of-way required can be minimized.
- The circulators will travel in both directions on each of the proposed circulator routes.
- Circulators should be compatible with the character of the surrounding neighborhoods.

Metrorail Shaping Tysons

Tysons grew-up around the automobile. Tysons will be transformed and transported into the future around Metrorail.



CONCEPTUAL MAP 6 - A system of three "form-giving" circulators will help tie all of Tysons together.

BICYCLE AND PEDESTRIAN NETWORK

Tysons today is not a place where people walk or bike: connections, sidewalks and bike lanes are limited, and the amount of auto traffic makes walking or biking unsafe and unpleasant. Through the grid of streets and the system of circulators, the pedestrian and bicycle network will be enhanced and the mode share of non-auto trips increased. The street network and the associated street types create better connections and provide a safer environment for bikes and pedestrians by providing dedicated bike lanes and sidewalks.

As the grid of streets is refined and detail added, careful thought should be given to how pedestrians and bicycles will be integrated into the street grid, and how connections will be made to transit. In general, the pedestrian and bicycle network should be more extensive closer to the transit stations, with alleys and dedicated bike and pedestrian paths mid-block. Bicycle racks and other storage facilities should be located near transit stations wherever possible.

AUTOMOBILE NETWORK

Physical improvements to the roadway and transportation infrastructure can have a big impact on the efficiency of the transit system and the attractiveness and safety of the pedestrian and bicycling network. In addition to the grid of streets, several improvements have been identified by the Task Force for testing, including:

- Beltway crossing at Scotts Run (High Occupancy Toll), including pedestrian and bicycle access;
- Possible nonmotorized Beltway crossing from Old Meadow to the Tysons Corner Center;
- Ramps at Jones Branch Drive to Dulles Toll Road (both Eastbound and Westbound);
- Ramps at Greensboro Drive/Tyco Road to Dulles Toll Road (both Eastbound and Westbound);
- Ramps at Boone Boulevard to Dulles Toll Road (both Eastbound and Westbound);
- Interchange improvements at Dulles Toll Road and Route 7; and
- Interchange improvements at Dulles Toll Road and Spring Hill Road.

The Task Force also recommends the modification of the existing Route 7/Route 123 interchange to accommodate pedestrians, such as an urban diamond. In addition, the following grade separations should be included in the preferred network for transportation analysis:

- Route 7/Westpark Drive/Gosnell Road (on current Comp Plan)
- Route 7/International Drive (on current Comp Plan)
- Route 123/International Drive (on current Comp Plan)
- Route 123/Scotts Run Crossing/Colshire Drive
- Route 123/Old Meadow Drive
- Old Courthouse Road and Route 123

These improvements need to be designed to fit into the new Tysons, sensitive to the context in which they will be implemented and supportive of the walkable nature of Tysons.

TRANSPORTATION GUIDELINES

The following guidelines redesign the existing transportation network to focus on transit and be more sustainable.

Context Sensitive Design

When structures are at odds with their surroundings, they potentially compromise their own function as well as the function of the man-made and natural systems around them. Context sensitive design solutions should be used to balance the conflict between the functional and performance

Green Streets are one application of context sensitive design. Providing a "green street" adds an amenity that enhances not only the street's storm drainage capacity but also the quality of the pedestrian environment and the view from the street. These streets limit stormwater runoff and allow infiltration by collecting it in surface landscaping in either the parking strips or the median, or both, giving the street the feel of a park block.

Results of recent transportation research links land use to increased transit use

Access to transit increases ridership

2005 WMATA Development-Related Ridership Survey

Distance from station	Metrorail Mode Share		Auto Mode Share	
	Office	Residential	Office	Residential
At station	35%	54%	48%	29%
¼ mile	23%	43%	66%	41%
½ mile	10%	31%	83%	54%

- 35% of office trips right at the station entrance
- Office mode share drops about 1% every 100 ft
- ½ mile residential share 200% higher than office

Most access transit by walking

- Two-thirds of the transit riders access Ballston Metrorail Station by "non-motorized transport"

TOD housing generates 60% less traffic than conventional housing

ITE Trip Manual
6.67 trips per unit

Detailed counts
of 17 residential TODs
3.55 trips per unit

Results from TCRP H-27A based on counts in Washington, DC; San Francisco; Portland, OR; and Philadelphia / N. New Jersey

requirements of public improvements and the aesthetic, cultural and natural environment. Any modifications necessary to fit the grid of streets within existing roadway standards should include context sensitive design standards.

Transportation Management Plans

Having robust, fully-funded regional Transportation Management Plans (TMP) for both the Metrorail project and the high occupancy toll (HOT) project will be critical. The coordination of these efforts along with other TMPs that will be associated with development projects will be important in mitigating congestion.

Transportation Impacts of Development Proposals

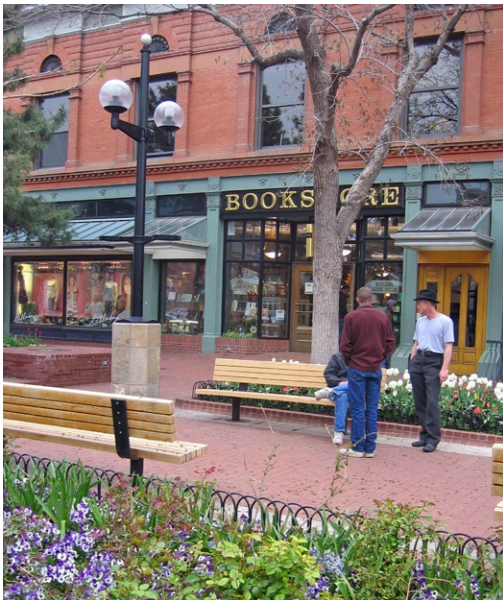
Each development proposal will need to address its impact on the transportation system and propose appropriate mitigation measures to accomplish the overall goals of the plan. Most developments will have to be reviewed by VDOT per Chapter 527 regulations "Traffic Impact Analysis Regulations Administrative Guidelines", and/or the listing and descriptions under "required Elements of a Traffic Impact Analysis (24 VAC 30-155-60 C)". Fairfax County will need to work with VDOT to ensure that VDOT understands how the transportation improvements identified in this plan help implement the vision for Tysons.

Pedestrian and Bicycle Network

In addition to an easily accessible bicycle and pedestrian network, a number of facility improvements will encourage people to walk or cycle more. A number of these improvements will be relatively inexpensive and easy to implement. Some will be policy-driven and others will be simply providing facilities for pedestrians and bicyclists such as bicycle racks at appropriate locations and pedestrian countdown signals at specific intersections to encourage non-motorized travel and to make it easier and safer for pedestrians and cyclists.

Transportation Demand Management

Transportation Demand Management (TDM) strategies will reduce the number of car trips and increase the efficient use of all transportation resources. The expected outcome of applying TDM strategies in Tysons will be an increase in transit ridership and a reduction in auto trips. A broad, systematic program of TDM strategies will be critical to ensure maximum exposure throughout the Tysons region. In the areas closest to Metrorail, TDM strategies can be expected to decrease vehicle trips by 10 percent on a daily basis. Potential TDM strategies for Tysons include: transit coordinators; carpool/vanpool incentives; transit subsidy flex-work arrangements; guaranteed ride home; and parking management. A large component of TDM will be the promotion of the programs to the various stakeholders within Tysons. Areas closest to the Metrorail stations should have higher transportation demand management requirements. For example, within ¼ mile of the stations, development should be required to reduce single occupancy vehicle trips by a certain percentage.



Parking Management

The location and availability of parking creates value for residential housing. "Right-sizing" parking (i.e., providing no more parking space than needed to support the uses it serves) will be key to reaping many advantages of fitting the new Tysons with transit, increasing density, providing a more effective mix of uses and a more walkable environment. All of those features collectively and individually will reduce car use and, consequently, the need to provide parking. Parking ratios in transit-oriented developments require fewer parking spaces than conventional developments. TODs often have parking maximums to prevent building more parking than is needed (and to save development costs and further encourage transit use). Parking should be treated as a common resource for the uses within the different districts in Tysons, rather than thinking about parking as a requirement of each building - an approach that inevitably leads to oversupply and wasted use of resources.

New reduced standards for parking will put Tysons on the forefront of responsible growth. Various methods will be available to reduce the use of parking, including eventually limiting the supply of spaces or by pricing the spaces. Parking in the TOD areas should follow the experience in Arlington County. For areas within an easy walk of Metro the ratio would be 1 space per 1,000 square feet of office, 1.08 spaces per residential unit for high density and no parking for the first 5,000 square feet of retail and service commercial.