

2.0 Planning Context

2.1 TYSONS CORNER TODAY

Tysons Corner is the primary center for retail and office activity in Fairfax County. It is the 12th largest Central Business District (CBD) in the United States and has one-quarter of all of the office space in Fairfax County. There are millions of square feet of retail, including Tysons Corner Center and Tysons Galleria. According to the Vienna-Tysons Regional Chamber of Commerce (VTRCC), the 110,000 jobs located in the Tysons Corner area generated approximately \$300 million in tax revenue in 2009.



Source: Washington Post and Kgp Design Studio. Looking east at the interchange of Routes 123 & 7 in Tysons Corner

While Tysons Corner serves as a major office and retail center, it functions as a typical suburban development. Major roads such as the Capital Beltway (I 495), VA Routes 7 (Leesburg Pike), 123 (Chain Bridge Road), and 267 (the Dulles Toll Road) are congested with motor vehicle traffic, at times more than 8 hours a day. Many of the largest office buildings are situated in campus like surroundings, with extensive surface parking. Car dealerships and large strip commercial developments with surface parking frontage are interspersed throughout the area. Roads and intersections have been designed to handle large traffic volumes at high speeds, creating an unfriendly environment for pedestrians and cyclists. Large super blocks, disconnected curvilinear streets, grade separated interchanges and barriers such as the Capital Beltway make it difficult to access or circulate within Tysons Corner by bicycle.

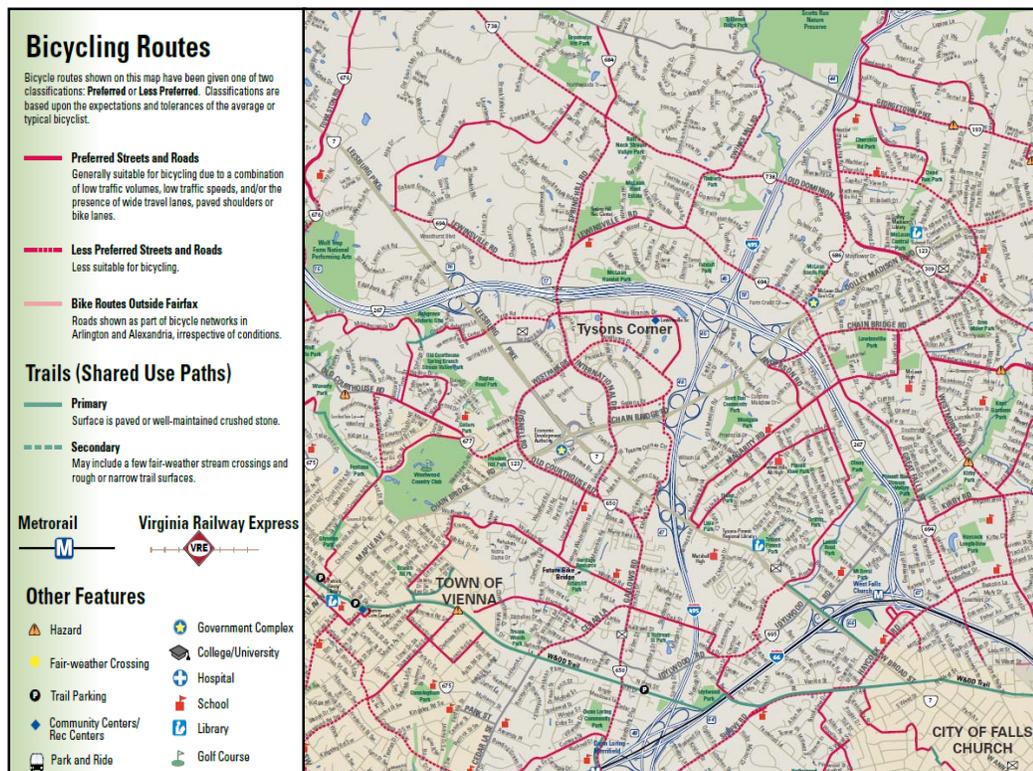
Some of the key issues and challenges facing bicyclists in Tysons Corner today include:

- Having to cross interchange ramps in order to cross the Capital Beltway and Dulles Toll Road.

- Discontinuous bicycle facilities resulting from incremental enhancements to the roadway network (e.g., often these enhancements are dependent on the pace of development).
- Finding viable routes into and out of Tysons, through Tysons and within Tysons.
- Accessing existing Orange Line Metrorail stations and future Silver Line stations via routes that are direct, time-efficient, safe and attractive to less-experienced cyclists.
- Finding safe and direct connections for egress trips from Metrorail stations to offices and shopping.
- Bicycling to and from a school, as a student, teacher or staff person.

The Fairfax County Bike Map provides a baseline for understanding current bicycling conditions in the Tysons Corner area. Fairfax County conducted field data collection in 2006 and 2007 and utilized bicycle level of service (BLOS) analysis to assess arterial and collector roadways Countywide, including those in Tysons Corner. The Map identifies a network of bike-friendly roadways, existing on-road bike lanes, and major paved trails that connect with residential areas, activity centers, transportation/transit facilities, and the adjacent jurisdiction’s bicycle networks. The portion of the Fairfax County Bike Map that covers the study area for this Plan is included in Figure 2.1.

Figure 2.1 Greater Tysons Corner Area of the Fairfax County Bike Map



Source: Fairfax County Bicycle Route Map, 2008.

2.2 PLANNED AND ONGOING PROJECTS

The introduction of the Silver Line to Tysons Corner is the principal transportation investment Northern Virginia has made this decade. Four new Metrorail stations are scheduled to open in Tysons Corner in late 2013. Additionally, there are numerous ongoing and planned road improvement projects in the area, including VA Route 7 and the I 495 HOT Lanes. Private sector development also is transforming the urban landscape (see Figure 3 for locations of proposed development in the near term).

Where available, the site plans and or construction drawings for projects were reviewed to evaluate bicycle accommodations and determine if additional improvements will be needed. Other plans that were reviewed include the following:

2.3 EXISTING BICYCLE FACILITIES

The W&OD Trail is the preeminent bicycle facility in the vicinity of Tysons Corner. Located just south of the core of Tysons, the trail provides direct connections to Tysons from Arlington in the east and Purcellville in Loudoun County.

While on-road bicycle facilities are infrequent, there are existing bike lanes on Ring Road, Gallows Road, Old Courthouse Road and Westmoreland Street in McLean. An extension of the bicycle lanes on Gallows Road and new bicycle lanes on Lewinsville Road are planned for installation in 2011.

Both the Silver Line and Beltway HOT Lanes projects are constructing bicycle facilities and accommodations in a variety of locations, including the following:

- Sidepaths are being provided as part of the reconstruction of Route 7 from Tyco Road to approximately the VA 123 overpass.⁶
- Sidepaths on each side of VA Route 7 are being provided on the new bridges over the Beltway.
- Bike lanes or wide curb lanes are being provided on new bridges, including the Lewinsville Road, Oak Street, and Idylwood Road bridges over the Beltway, and the Westpark Drive bridge over VA 123.
- Additionally, a number of intersections in the Tysons Corner area will be upgraded for pedestrians.
- A map showing bicycle accommodations that exist and are under construction (2010-2012) is provided in Chapter 4, Figure 4.1.4.

⁶ It should be noted that these sidepaths may not meet existing AASHTO standards with regard to width for shared use space in an urban environment, buffer from the adjacent road, or location of vertical impediments, such as utility poles and street trees.

2.4 POLICIES AND REGULATIONS

Existing bicycle-related policies are an important element of current conditions in Tysons Corner. A brief list of key policies and their past and current impact on the bicycling environment follows:

- The Countywide Trails Plan supports the steady development of a recreational trail system. Transportation-related features of this plan include the requirement to provide shared use sidepaths on one or both sides of all major and minor arterials.
- The Public Facilities Manual includes provisions for multi-use trails and other facilities.
- There are bicycle elements included in the county's proffer lists provided to private developers by Fairfax County. A recommended Bicycle Proffer Checklist is provided in Appendix B
- There are bicycle-related Transportation Demand Management (TDM) strategies available to fulfill TDM-related commitments.
- While these policies have led to the development of some valuable bicycle infrastructure, more will be needed to make bicycling a viable transportation option in the future Tysons Corner.

2.5 TYSONS CORNER IN THE FUTURE

As noted, Tysons Corner is in the midst of a significant transformation. What exists today will bear little resemblance to Tysons Corner in 10, 20 and 30 years. The June 2010 Tysons Corner Urban Center Amendment to the County *Comprehensive Plan* presents a new vision for the future of Tysons Corner. Along with other studies related to this plan amendment, the *Tysons Corner Bicycle Master Plan* supports and advances the new vision. The following plans and studies contribute to this new vision and provided information that was central for development of this Plan. For further detail about these plans and studies and how they relate to bicycling, see Appendix A.

Plans and Studies

Completed Plans and Reports

- Tysons Corner Urban Center amendment to the Fairfax County Comprehensive Plan (2010)
- Metrorail Bicycle and Pedestrian Access Improvements Study (2010)
- VDOT Bicycle Policy Plan (2010)
- Chapter 527 Report (2009)
- 2030 National Capital Region Transportation Planning Board Financially Constrained Long-Range Transportation Plan (2009)

- Fairfax County Transportation Plan (2006)
- Fairfax County Countywide Trails Plan (2002)

Citizen-Based Planning Documents

- McLean Pedestrian Task Force Pedestrian and Bicycle Recommendations (2009)
- Tysons Bicycle Plan, Fairfax Advocates for Better Bicycling (2008)

Ongoing and Upcoming Studies

- Tysons Metrorail Station Access Management Study (TMSAMS) (Ongoing)
- Grid of Streets Study (2011)
- Tysons Corner Circulator Study (2011)

Land Use and Development Forecasts

The Tysons Corner Urban Center amendment to the Comprehensive Plan makes clear that new development and redevelopment in Tysons Corner will result in significant growth in population and employment above and beyond previous growth forecasts. Over 54,000 residents are expected to live in Tysons Corner by 2030, compared to 17,000 in 2010. The number of jobs is expected to increase from 105,000 to 159,000 by 2030. The Comprehensive Plan amendment focuses on redevelopment activities through 2030, while establishing a framework for growth through the year 2050. The 2030 growth forecasts are presented in Table 2.1. Figure 2.2 presents an example summary of near-term development proposals in Tysons Corner anticipated by Fairfax County Department of Planning and Zoning.

Table 2.1 Existing and Forecast Population and Employment within Tysons Corner

Scenario	Population	Employment
2010	17,000	105,000
2030 (2010 Comprehensive Plan Amendment)	54,000	159,000

The development mix associated with the population and employment growth forecasts will result in a ratio of four jobs for every household in Tysons Corner, a significant improvement over the 2010 ratio of approximately 13 jobs for every household. A greater diversity of uses throughout Tysons Corner will promote biking and walking by providing more people with the opportunity to live near their jobs and other day-to-day destinations. Facilities recommended in this Plan will provide a support system for new and existing residents, employees working in Tysons Corner, and for people of all ages who choose to travel by bicycle.

Figure 2.2 Anticipated Tysons Corner Rezoning



Source: Fairfax County Department of Planning and Zoning, September 2010.

The Future Transportation Network

In 2010, the majority of people traveling to, from, within and through Tysons Corner do so using private automobiles.⁷ The long-term vision for the transportation system in Tysons Corner focuses on providing travel choices through a balanced and interconnected multimodal system. The extension of Metrorail will help create a high-capacity, premium multimodal transportation network. In the *Comp. Plan Amendment*, the transformation of the transportation system is achieved through the following actions or shifts:

- “Transformation of the existing superblock street grid into a system of smaller connected streets to provide alternative routes for traffic flow and bicycle and pedestrian trips.
- Streets should become “complete streets”, designed to create a sense of place and promote biking and walking.
- The transit system will serve regional trips with Metrorail and buses to and through Tysons Corner.



⁷ Per the 2000 Census, 86 percent of trips with a start or end in Tysons Corner are in single occupant vehicles. An additional 9 percent of trips are in carpools.

- For trips within Tysons Corner, a Circulator System that allows frequent, quick and inexpensive movement as well as easy connections to regional transit systems is needed.
- A neighborhood feeder bus network should connect nearby communities to Tysons Corner.
- Enhancements to the roadway 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.”⁸

This Plan builds on the *Comp. Plan Amendment* by recommending specific improvements that will create a network of bikeways for daily use. It offers the bicycle accommodation component for creating “complete streets.” It will also guide development of on-street and off-street bicycle facilities that will connect the surrounding communities to Tysons Corner and its new Metrorail stations.

2.6 THE ROLE OF BICYCLING IN TYSONS CORNER

With a new vision for Tysons Corner, there is an opportunity for bicycle transportation to play a key role in serving three major types of trips:

- Access to transit trips, to Metrorail and various bus services (typically 0.5-2.5 miles)
- Bicycle commuting to and from Tysons Corner (0.5-10.0+ miles)
- Circulation within Tysons Corner and nearby communities, including trips passing through Tysons, such as between Vienna and McLean (0.5-5.0 miles)

To assess the real potential for the bicycle to meet these various transportation needs, it is instructive to understand the dynamics of today’s transportation activity, as well as forecasts for the future.⁹

Today’s Travel Picture

In 2005, the residents-to-employees ratio is unbalanced – 17,000 residents in Tysons Corner compared to 105,000 jobs (located in offices, malls and other businesses). The 105,000 jobs, and related business activity, generated about 66,000 inbound A.M.-peak period vehicular trips in 2005. The outbound traffic in the P.M. peak period was 85,500 vehicles. For all motorized trips, in 2005, 86 percent were single occupant vehicles, 9 percent were in carpools and 5 percent were on public transit. During the peak periods,

⁸ Fairfax County Comprehensive Plan (Amendment) for Tysons Corner.

⁹ Existing conditions (based on 2005 land use and transportation characteristics) and the 2030 land use forecast and transportation network were assessed using the Transportation Planning Board’s (TPB) regional travel demand model. The TPB is the transportation planning arm of the Washington Metropolitan Area Council of Governments (MWCOG).

the vehicular travel demand resulted in significant congestion on the major routes providing access to Tysons Corner, which continues today.

Tomorrow's Travel Picture

As has been noted, by 2030 the residential and employment levels are expected to increase significantly. This planned growth is expected to increase the total volume of daily motorized trips into, out of, and within Tysons Corner by 45 percent, between 2010 and 2030. By 2030, this growth equates to an additional 213,900 auto or transit trips per day.

The expansion of the roadway network associated with future population and employment growth will lead to significant growth in traffic volumes on major arteries. Total daily traffic volumes entering Tysons Corner in the A.M. peak period (7-10AM) are projected to increase to 77,000 by 2030; outbound traffic in the P.M. peak period will increase to 97,000.



A modest level of relief in the 2030 travel picture is that the increased development density, and mixed use growth plan called for in the updated Comprehensive Plan will result in more short trips. As a result the non-motorized (biking and walking) travel mode share for commute trips is forecast to increase from 2.2 percent in 2005 to 7.1 percent by 2030.¹⁰

The projected non-motorized activity in the TPB travel demand model is based on the assumption that higher density land uses tend to be accompanied by transportation facilities and an urban design pattern that supports bicycling and walking trips. While this may be a safe assumption for an established urban area, it is a stretch for an area such as Tysons, which is in the process of transforming itself from a suburban to an

¹⁰Transportation Planning Board, 2010. 2030 model outputs based on MWCOGs Cooperative Land Use Forecast Round 7.2a which considers population and employment projections from the Tysons Corner Comprehensive Plan amendment.

urban area. Without the expanded bicycle network recommended in this Plan, it is unlikely that Tysons will reach or exceed the forecasted mode split by 2030. In this scenario, it is also possible that the mode shift and associated congestion related benefits predicted to come as a result of the Silver Line would also not be fully realized.

Role for Bicycling in the Multimodal Transportation System

Based on this analysis of forecasted travel conditions, it is clear that bicycling can play a key role among a set of multi-modal travel options that are needed in Tysons. Three basic types of bicycle trips characterize this role: 1) access to transit trips, 2) commuting and other utilitarian trips to and from Tysons Corner, and 3) bicycle travel within, through and around the core of Tysons, as well as throughout the greater Tysons area.

Bicycle Access to Silver Line Stations

An important part of the overall transportation forecast, is the prediction that by 2030 daily boardings at the four Tysons Metrorail Stations will total 29,200; providing a significant alternative to driving for regional trips. However, because no motor vehicle parking will be provided at the new stations, gaining access to the stations by walking, biking, bus, or drop-off is essential to realize this prediction.

As a result, conditions for bicycle access to the stations are a critical concern. Bicycle access to Metrorail is important because it has certain advantages over other options:

- Congestion relief--automobile drop trips will create up to 4 additional auto trips per day.
- Time savings--bicycle access to the rail stations is faster than walking.
- Enlarges numbers of people served by non-polluting modes--the range of a bicycle as compared to walking enables a rail station to serve a much wider area.
- Time savings and convenience--as compared to taking a bus, circulator or shuttle, it eliminates the time taken to walk to a bus stop and wait for the bus. It also eliminates the chance that the bus service is delayed in traffic and relieves the traveler from the need to coordinate their departure time with the bus schedule--one's bike is ready when you are.



For bicycle access to be both viable and comfortable, two elements of infrastructure need to be present: 1) a safe, direct and convenient bicycle-friendly route to the station, and 2) secure, weather protected bicycle parking at the station.



Source: Los Angeles MTA

Access Routes to Metrorail

As a part of this Plan, extensive study was conducted to identify near term and long-term bicycle access routes to the new Silver Line stations. These routes were evaluated to determine how viable and comfortable they might be when Metro opens, what might be done to increase their bicycle-friendly features, and within which implementation phase those improvements should be made.

To understand who might be served by a bicycle-friendly route to a station, and who will have a less attractive or “impossible” route to a station, a bicycle shed analysis was conducted. Based on existing barriers, street connectivity, and arterial crossing accommodations, bicycle catchment areas (or sheds) were delineated for each of the four stations.¹¹ Further, the bicycle routes serving these sheds were evaluated for baseline bicycle functionality as well as bicycle-friendliness. Figure 2.3 shows functional sheds that were graded at two levels of bicycling comfort: 1) comfortable for most casual cyclists, and 2) comfortable for most experienced cyclists.

The conclusion revealed by this analysis is that, without additional infrastructure improvements, within a two-mile radius of each station there are very few areas, and thus people, that will be served by a bicycle-friendly route when the Silver Line opens in late 2013. Moreover, many of these routes that could be usable today are comfortable only for more experienced cyclists, which typically make up 5-10 percent of the potential cycling public.

The challenge is to increase the number of neighborhoods where even the casual cyclist would feel comfortable bicycling to Metrorail. In response to this challenge, this Plan makes recommendations for specific improvements to develop multiple bicycle-friendly routes to the Metrorail stations.¹² Without bicycle access improvements to Metro, the

¹¹A bicycle shed is like a watershed, it represents the land area from which cyclists are likely to “drain” to a rail station.

¹² While these routes will be improved with Metrorail access in mind, it should be noted that the improvements will make bicycling to other locations in the core of Tysons better as well.

potential for the Silver Line stations to serve their 2030-estimated 29,000 daily trips will be significantly restricted.

Methodology for the Bike Shed Analysis

To establish bicycle catchment areas (or sheds) for Silver Line stations, the maximum distance for a bicycle trip to a station has been set at 2.5 miles. Given the general terrain of the Tysons area and inclination of less experienced cyclists it is assumed that most travelers would not consider a bicycle trip to Metro from a longer distance. Areas within 2.5 miles of a future Silver Line station but at least as close to an Orange Line station have been removed from the Silver Line catchment areas.

The resulting polygon can be understood as the area from which it might be considered realistic for the general public to bicycle to the Silver Line. Within this overall area specific bicycle sheds relating to one of the four Tysons stations have been identified and evaluated for bicycling comfort:

- The sheds marked in blue, generally have favorable conditions for bicycling, even for a casual rider. They are also not too distant from the stations. None-the-less, even these areas may include a single challenging crossing of an arterial, however basic pedestrian crossing accommodations are expected to be in place by 2014;
- The sheds marked in yellow, generally have viable, but more challenging bicycling conditions; conditions that would deter most casual cyclists from riding, but would be tolerable for many experienced cyclists. However, these areas, too, typically include 1-3 spot locations/intersections that may be difficult to navigate and do not have bicycle-specific accommodations
- The areas that are gray are areas from which it is difficult for most, even experienced cyclists to cycle to a Silver Line station. In some areas it is in fact not possible to make this trip by bicycle. This is based on an evaluation of expected 2014 conditions. However, looking at the glass as half full rather than half empty the gray area highlights communities of people that could be linked to the Silver Line by bicycle if improvements are made.

Bicycle Parking at Silver Line Stations

In February 2011, the WMATA Board adopted a goal that by 2030 3.5 percent of AM Peak trips to Metrorail stations should be by bicycle. Table 2.2 below summarizes the existing plans for bicycle parking at the four Tysons Silver Line stations and how the planned parking capacity compares to what is needed to achieve this goal.

Based on current ridership projections the application of proposed WMATA bicycle access goals does not suggest that additional bicycle parking (above what is planned for as of 2011) will be needed until sometime after 2020. However, this also presumes that the Tysons stations will be average (among all stations in the system) at attracting bicycle trips.

Based on the improvements recommended in this plan, by 2020, the Tysons stations could and should be above average in their AM Peak access mode share by bicycle, perhaps among the top 25 among all stations. In 2007, the Dunn Loring Station had a 2.0

percent bicycle access mode share in the AM peak, which was generating the need for 60 bicycle parking spaces. Given WMATA's goals and the performance of the Dunn Loring station it seems reasonable to expect a 2.0 percent access mode share for Silver Line Stations in 2014. It follows that a 3.5% mode share could be expected in 2020, and a 4.5 percent mode share in 2030. While currently planned bike parking capacity may be adequate for system opening in 2013-2014, additional capacity will likely be needed before 2020. Table 2.2 compares existing parking capacity to WMATA goals for an average station and the scenario proposed above.

Table 2.2 Tysons Corner Silver Line Metrorail Station Characteristics

Silver Line Metrorail	2014	2020	2030
Daily Boardings	16,300 ¹³	22,000 ¹⁴	29,200 ¹⁵
AM Peak - 1/3 of Daily Boardings	5,379	7260	9,636
Percent of AM Peak Station Access Trips by Bicycle ¹⁶	1.3 percent ¹⁷	2.1 percent WMATA Goal	3.5 percent WMATA Goal
Projected Bike Parking Capacity Needed	70 spaces	152 spaces	338 spaces
Tysons Corner Bicycle Master Plan Goals	2.0 percent	3.5 percent	4.5 percent
Capacity Needed to Meet Goal	108	254	434
<i>Capacity Planned as of 2010</i>	<i>236</i>	<i>236</i>	<i>236</i>

Sources: Various, see footnotes.

In addition to the number of bicycle parking spaces provided, it is important to consider the location and quality of the parking. The current station layouts (January 2011) do not provide for covered bicycle parking racks, and in some cases the location of racks and lockers should be improved. Detailed recommendations regarding the provision of bicycle parking at the new Silver Line Stations are provided in Chapter 4.

¹³ The daily station boardings reported in the 2004 FEIS represented year 2011 station activity. For the purposes of this analysis, the daily boardings in Tysons Corner in the first full year that Phase 1 is open (2014) is assumed to be the same as the FEIS 2011 forecast.

¹⁴ 2007 Station Access and Design Study. The 2020 value represents a ridership forecast based on the Silver Line being fully extended to Dulles Airport. This forecast is based on forecasted development densities that are more consistent with the 2010 Comprehensive Plan amendment, than the 2004 FEIS forecast baselines.

¹⁵ More recent, unpublished analysis using the 2010 TPB transportation model, which includes land use projections for Tysons Corner consistent with the 2010 Comprehensive Plan amendment, forecasts up to 29,200 daily boardings in Tysons Corner by 2030.

¹⁶ Metrorail Bicycle & Pedestrian Access Improvements Study (October 2010)

¹⁷ The 2014 system average is based upon a 0.7 percent system average calculated for 2010 in the study cited in footnote 9 above, and reaching the 2.1 percent goal by 2020.

Projected 2014 Bicycle Access to Silver Line for Casual and Experienced Cyclists

Draft
February 15, 2011

Quality of access based upon completion
of bicycle improvements underway or
funded in January 2011.

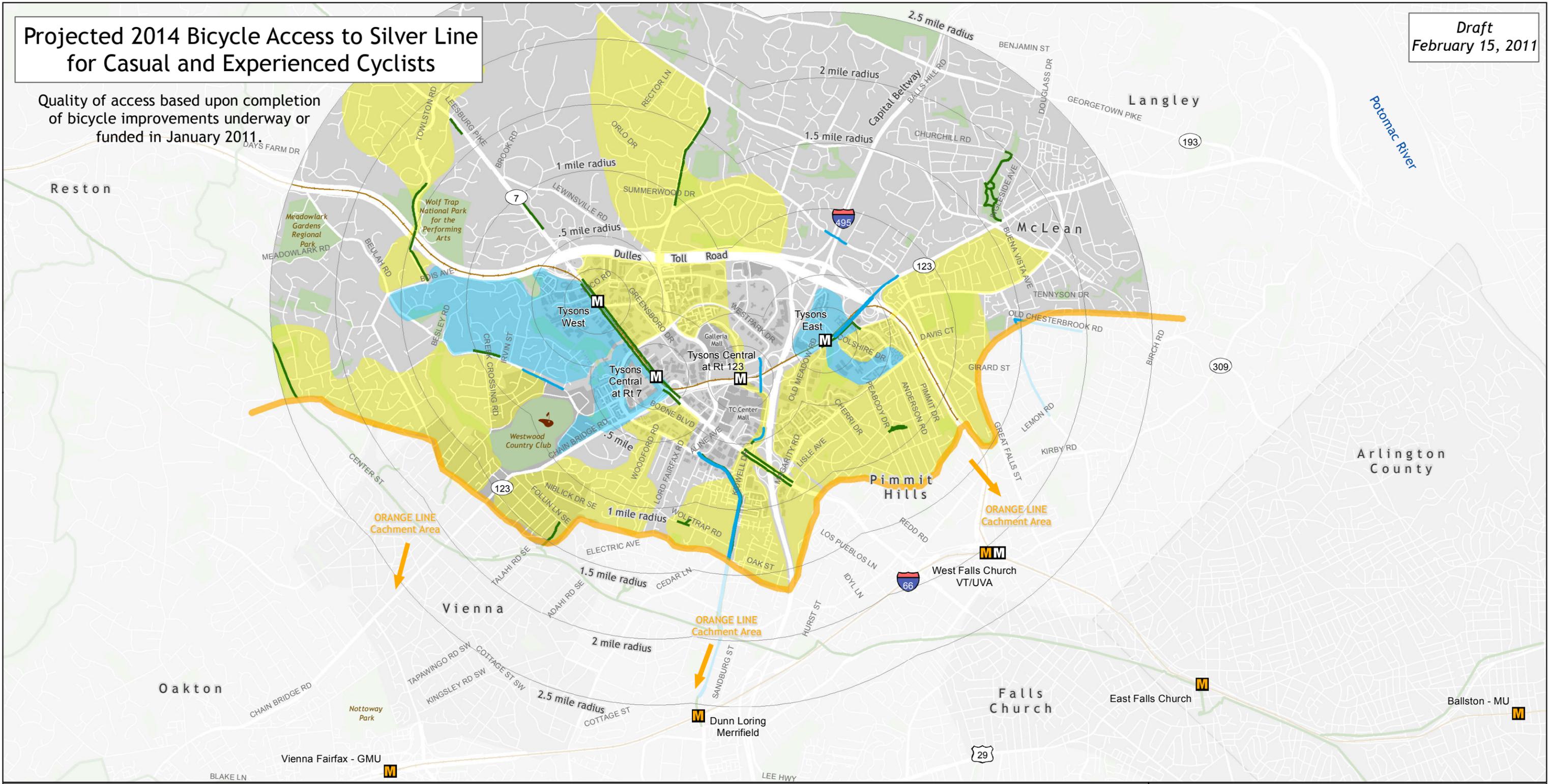


Figure 2.3



- On-Road Bicycle Facility (Existing, Under Construction, and Planned)
- Trails (Existing, Under Construction, and Planned)
- Comfortable for most Casual Cyclists
- Comfortable for most Experienced Cyclists

Tysons Corner Bicycle Master Plan



Bicycle Commuting to Tysons Corner

Bicycle commuting to an expanding set of employment opportunities in Tysons Corner represents a significant opportunity to convert motorized commutes to zero emission trips. The demand for commuting by bicycle will increase in Tysons, because traffic congestion, auto based commute costs (fuel, parking), and total employment are all forecasted to go up.

Existing Conditions

In 2005, based on U.S. Census information and Transportation Planning Board (TPB) transportation model data, the combined bicycling and walking mode share for all commute trips with a start or end in Tysons Corner was 2.2 percent. National trends for urban areas with similar population densities suggest that 15 percent of the total combined bicycling and walking mode share is bicycling.¹⁸ Based on this assumption, for all trips with a start or end in Tysons Corner in 2005, 0.34 percent were by bike and 1.87 percent were pedestrian. While these percentages are small, given a total of 128,500 total daily commute trips in and out of Tysons Corner in 2005, this translated into 440 daily bike commute trips.

Review of these numbers by those who know Tysons Corner suggests that they may be high. As a reference, the average bike to work mode share in the Washington D.C. metropolitan area based on 2007/2008 TPB household travel survey is 0.54 percent. Because Tysons currently is comparable to or less bicycle-friendly than typical urban/suburban employment centers in the D.C. region, actual bicycle commuting rates are probably less than the 0.34 percent reported through the transportation model.

Future Conditions

As previously discussed, compared to 2005, by 2030 the residential population in Tysons Corner is forecast to more than triple and employment is forecast to increase by 50 percent. This growth increases the projected daily commute trips to and from Tysons to 233,300. Based on this growth, the combined bicycling and walking mode share of all commute trips to and from Tysons Corner is forecast to increase to 7.1 percent by 2030. If 15 percent of these trips are on bicycles (see above), the result is a total of 2,520 daily bicycle commute trips to and from Tysons Corner in 2030. Table 2.3 presents a summary of the 2005 and 2030 data, including ranges of total bike mode share and total trip volumes.

¹⁸ The 2001 National Household Travel Survey found that in urban areas with densities higher than 2,000 persons per square mile (suburban/urban residential), bike commuting represents around 15 percent of all non-motorized commute trips.

Table 2.3 Tysons Corner Existing and Future Bicycle Commute Mode Shares
(Based on an Average Weekday)

Scenario	Total Commute Person Trips	Total Commute Bike and Walk Trips	Total Commute Bike Trips ^a	Bike Commute Mode Share
2005	128,500	2,900	220-440	0.17-0.34%
2030 (2010 Comprehensive Plan Amendment)	233,300	16,600	1,260-2,520	0.54-1.08%

^a The low end of the range represents a value 50 percent less than the high end as estimated in the above discussion. This would suggest that bicycling trips are approximately 10 percent of all non-motorized commute trips in Tysons.

Benefits of the Plan for Commute Trips to and from Tysons

The expanded bicycle network recommended in this Plan will help accommodate the growing travel demand between Northern Virginia homes and Tysons Corner jobs. While this plan focuses on the facility needs within roughly a 3 mile buffer of Tysons Corner, the reality is that many bike commute trips will start from areas further than 3 miles away. Additional bicycle planning work in 2011 (Fairfax Countywide Bicycle Plan) will ensure that these longer bicycling connections are made, even to neighboring jurisdictions such as Arlington, Alexandria and Loudoun County.

Bicycle Circulation Within and Around Tysons Corner

Because of the additional 37,000 persons expected to be living in Tysons by 2030, the greatest opportunity for more bicycle use will be among these residents living in a densely developed, mixed use setting.

Existing Conditions

The existing mismatch in population and employment in Tysons Corner, combined with a number of barriers or hazards for bicyclists accessing Tysons, results in suppressed demand for bicycle trips. In addition, because the majority of workers in Tysons access their jobs by a vehicle trip, there is minimal opportunity to use a bicycle for midday trips for lunch, errands or appointments within Tysons. Finally, Tysons is at the crossroads of a number of major transportation thoroughfares in Fairfax County. As these facilities currently operate (VA 7 and VA 123), traveling through Tysons Corner on bicycle between Vienna and McLean for example is challenging.

Future Conditions

As Tysons Corner redevelops, TPBs transportation model reveals that increased density and mix of uses in Tysons results in closer trip origins and destinations, thus decreasing the rate of growth in demand for vehicle trips. Table 2.4 presents the change in motorized vehicle based trip types between 2005 and 2030, noting that the “trips not originating from home” shows the smallest percent increase (23 percent). An employment center generates a considerable number of daytime trips that originate at

work, not at home, for example, going out to lunch, running errands on a break, going to a doctor's appointment. These trips present a great opportunity for shifting from motor vehicle to bicycle.

Table 2.4 Tysons Corner Total Daily Motorized Trips
All Trips

Scenario	Commute to Work Trips	All Other Trips From Home	Trips Not Originating From Home	Total Trips
2005	111,400	152,540	207,310	471,250
2010 Comprehensive Plan Amendment (2030)	186,630	242,190	255,620	684,440

The new residents in Tysons Corner will create travel demand (see Table 2.4), not only for commute trips to jobs in the Tysons core and greater Tysons area, but trips to school, shopping, running errands, to recreation, etc. With mixed-use development and public facilities close at hand, many of these trips will be less than three miles and can easily be made by bicycle.

Benefits of the Plan for Circulation Within and Around Tysons

The expanded bicycle network recommended in this Plan will help accommodate the new travel demand between existing and new households in and around Tysons Corner to service, shopping and entertainment within Tysons. In addition, it will help accommodate trips by employees within Tysons Corner to services, other attractions and other businesses in the area. The Plan will also focus attention on providing direct routes that transect Tysons, eliminating the key barriers in Tysons for longer distance through bicycle trips.

Conclusion

Based on the forecasts for significantly increased transportation activity in Tysons Corner, the goals set to reduce the role of single occupant auto (SOV) trips in meeting transportation needs, and the shift in trip types expected to include many more internal circulation trips, it is clear that bicycling can and should play a critical role in providing a diverse set of travel options. The types of trips for which bicycling is most suited include:

- Daily and periodic access to transit, especially Metrorail; as well as egress from rail transit to Tysons locations to which it is too far to walk.
- Daily and seasonal bicycle commuting to and from Tysons, primarily from origins within 3 miles, but also for longer commutes via the W&OD Trail.
- Circulation within Tysons and nearby communities; this role is expected to expand as residential population increases and new development increases the mix of land uses that will generate these types of trips.

The expanded bicycle network recommended in this Plan will help accommodate the new travel demand from the mixed office and residential redevelopment of Tysons Corner and also foster additional mode shifts from all motorized trips. The following chapter outlines the process undertaken in order to identify this bicycle network.