
Discussion Points for Developing a Preferred Network

■ Introduction

The purpose this document is to facilitate discussion on the development of the transportation network for the Preferred Alternative. The points below help outline possible recommendations for developing the network. These recommendations are based on the results of the travel demand forecast model and input from the public and the Task Force. The purpose of these recommendations is to help assist in generating discussion on the network attributes to be considered and included for testing in the Preferred Alternative.

In the last round of testing, two land use prototypes (Prototype A and Prototype B) were tested against two transportation networks (Network 1 and Network 2). In addition, the land use and transportation elements of the current Comprehensive Plan were tested as the Base Case.

The two networks, Network 1 and Network 2, were developed to be distinctly different from one another. While both networks included a finer grid of streets, Network 1 was much more focused on additions to the road network, including highway ramps and internal grade separated interchanges within Tysons. The focus of these additions was primarily to move automobile traffic more efficiently into, out of and through Tysons Corner. Network 2 included a much more limited number of these road additions. The focus of Network 2 was to move people within Tysons Corner by using transit more effectively through a system of circulators operating on their own right-of-way and by an emphasis on walkable streets.

A review of the travel demand modeling of the transportation networks and land use prototypes provided the following conclusions:

1. There is an increase in vehicle miles of travel (VMT) and congestion in the Tysons area when the land use prototypes/transportation network combinations are compared to the year 2030 Base Case. Total VMT increases over the Base scenario an average of 8 percent for the different alternatives. Congested VMT increases on average by 22 percent over the Base Case.
2. The residential balance of the prototypes increases the number of internal trips, hence reducing the number of vehicle trips going into and coming out of Tysons.
3. The land use prototypes show a higher level of transit use than the Base.
4. Network 1 draws more trips to Tysons, particularly along Route 7, primarily due to the included grade separations along Route 7 which have the effect of making travel through Tysons an attractive alternative to going around it via the DTR and I-495.

5. All of the land use prototype/transportation network combinations show higher traffic demand at ramps connecting roads within Tysons to the DTR and I-495. At this stage of the analysis it is uncertain if these problem locations can be mitigated.
6. Both the Base Case and the land use prototype/transportation network combinations increase traffic volumes on selected highways surrounding Tysons by about 14 percent.

This document describes the components of Network 1 and 2 in more detail and makes recommendations on which elements of each Network should be retained in the Preferred Alternative based on the testing that was conducted, an engineering feasibility assessment, and input from the public and the Task Force. In addition, a PowerPoint is provided to illustrate each aspect of the Consultant Draft Preferred Concept.

■ Grid of Streets

The grid of streets was included in both Networks 1 and 2. It consists of 10 to 14 miles of additional local and collector streets for the purposes of: 1) creating smaller blocks more amenable to pedestrians and non-motorized transportation; 2) spreading vehicle traffic from the major arterials; 3) providing pedestrian-oriented streetscapes; and 4) creating “complete streets” for all modes of transportation.

Recommendation for Preferred Network

Retain an appropriate grid of streets for the Preferred Network. Although there are some differences in the grid of streets for Prototype A and B, the basic grid pattern is similar. There appears to be a consensus that the grid of streets is essential for any future land use alternative for Tysons Corner. For Comprehensive Plan purposes, it should be assumed that the majority of the grid of streets would be built through the development process.

■ Beltway Crossings

Network 1 included four additional Beltway crossings and Network 2 included two additional Beltway crossings. These Beltway crossings allow areas on both sides of the Beltway to be connected without having to use the only two crossings currently existing in this vicinity (Route 7 and Route 123). These crossings could be designed to accommodate pedestrians and bicycles as well as vehicles. These Beltway crossings are listed below:

1. Scotts Run Overpass (connects Route 123 and Jones Branch Drive). This crossing was included in both Networks 1 and 2. The Capital Beltway High-Occupancy/Toll (HOT) lane project will construct more than 50 percent of this connection. The Beltway HOT lanes will connect to the middle of this bridge at a signalized intersection.

2. Route 123/Old Meadow Overpass (connects the Tysons Corner Center Mall bridge over Route 123 with the Westgate area). This crossing was included in both Networks 1 and 2. The Beltway HOT lane project will construct approximately 50 percent of this connection. The Beltway HOT lanes will connect to the middle of this bridge at a signalized intersection.
3. Shopping Mall/Old Meadow Overpass (connects the Tysons Corner Center Mall to the east side of the Beltway). This crossing was included in Network 1 only.
4. Westpark/Westgate Overpass (connects Westpark and Westgate) just north of Route 123. This crossing was included in Network 1 only.

Recommendation for Preferred Network

A subset of the crossings is considered for continuation in the Preferred Network:

1. Scotts Run Overpass. This crossing is recommended for continuation in the Preferred Network. It shows relatively good demand at about 28,000 vehicles per day (vpd) which is close to about 800 vehicles per lane per hour (vplph) in the peak. The crossing connects Westpark and Westgate which are two high-density development areas. This would appear to be a good crossing location and also provides the Westgate area easier access to the HOT facility.
2. Route 123/Old Meadow Overpass. This crossing is recommended for continuation in the Preferred Network. It connects to Westpark Boulevard which is a two lane facility, but is planned to be expanded to four lanes (a requirement for this connection to work without simply creating a choke point). The facility ties into the Tysons Corner Center mall ring road at a signalized intersection. The spacing of access points on the mall ring road would reduce the capacity provided as compared to a standard road.
3. Shopping Mall/Old Meadow Overpass. This crossing is recommended for continuation as a special purpose facility in the Preferred Network. Although under testing it helped bring traffic into the mall ring road and had relatively high demand, it primarily serves the Tysons Corner Center Mall. Therefore, this connection may be best suited as a non-motorized and special transit use facility. By making a special purpose facility, it has the potential to avoid adding excess traffic and disruption to the traffic already circulating around the mall.
4. Westpark/Westgate Overpass. This crossing is not recommended for continuation in the Preferred Network. It serves the same market areas as the Scotts Run Overpass. The demand was about half of the Scotts Run Overpass. This overpass does not share a connection with the HOT lanes, potentially increasing its cost. In addition, the crossing has engineering feasibility issues and its location relative to the Capital One Building is problematic.

Coordination of these crossings with both the Dulles Metrorail project and with the Beltway HOT lane project is critical.

■ Highway Ramps

Five additional sets of highway ramps were included in the two tested networks. These additional ramps could be important in alleviating choke points of vehicles entering and exiting Tysons Corner. Four of these ramps accessed the Dulles Toll Road and one ramp accessed the Capital Beltway. These ramps are described below:

1. Dulles Toll Road/Jones Branch Drive. These ramps were included in both Network 1 and Network 2 and provide improved access to the Westpark area relieving the Dulles Toll Road/Spring Hill Road interchange. The ramps are from the eastbound DTR to Jones Branch Drive and from Jones Branch Drive to the westbound DTR.
2. Dulles Toll Road/Greensboro Drive. These ramps were included in Network 1 only. They provide vehicular access to and from the Tysons West area east of Route 7 providing an alternative to use of the Dulles Toll Road/Route 7 interchange.
3. Dulles Toll Road/Boone Boulevard. These ramps were included in Network 1 only. They provide vehicular access to the area west of Route 7 providing an alternative to use of the Dulles Toll Road/Route 7 interchange.
4. Dulles Connector Road/Dolly Madison Boulevard. This ramp connects the Dulles Connector Road extension inside the Beltway to Scotts Crossing Road within the geometry of the current interchange.
5. Capital Beltway/Gallows Branch. These ramps would connect the Beltway mainlines with the area west of Route 7 and south of Route 123 (Old Courthouse area).

Recommendation for Preferred Network

A subset of the ramps is considered for continuation in the Preferred Network:

1. Dulles Toll Road/Jones Branch Drive. These ramps are recommended for carrying forward into the Preferred Network. These ramps may raise traffic flow issues related to the merge and diverge for traffic on the Dulles Toll Road between Spring Hill Road, Dulles Airport Access Road, and the Capital Beltway merge points. However, the ramps at Jones Branch Drive would provide another access point to/from Tysons Corner. Engineering feasibility of the ramp from the eastbound Dulles Toll Road to Jones Branch Drive is under review due to the close spacing of ramps in this section of the Dulles Toll Road.
2. Dulles Toll Road/Greensboro Drive. Only part of this connection would be carried into the Preferred Network. The connection between the Dulles Toll Road going eastbound and Greensboro Drive would remain, providing for both on-and-off movements. The connection between Greensboro Drive and the westbound lanes would not be included, but capacity improvements to the interchange at Route 7 and

the Dulles Toll Road would be incorporated into the Preferred Network. This would include increasing the capacity on the on-loop and extending the merge area.

3. Dulles Toll Road/Boone Boulevard. The connection from the eastbound DTR off-ramp to Boone Boulevard is recommended to be included in the Preferred Network, but the connections to the westbound lanes are not due to feasibility and cost considerations. The issues of impacts to the Sheraton property and ensuring continued access for the residents of Ashgrove Lane must be addressed at a future stage of implementation.
4. Dulles Toll Road/Dolly Madison Boulevard connection is recommended for inclusion in the Preferred Network.
5. Capital Beltway/Gallows Branch. The ramp to the southbound Capital Beltway is recommended to be included in the Preferred Network. The ramp from the northbound Capital Beltway to Gallows Branch was deemed not feasible from an engineering perspective.

■ Grade Separations

Network 1 included three urban diamond interchanges and two grade separations to facilitate vehicular movement within Tysons Corner at selected critical intersections. The locations of these interchanges and grade separations are:

1. Route 7/Westpark Drive/Gosnell Road (included in current Comprehensive Plan)
2. Route 7/International Drive (included in current Comprehensive Plan)
3. Route 123/International Drive (included in current Comprehensive Plan)
4. Route 123/Scotts Crossing/Colshire Drive
5. Route 123/Old Meadow Drive

Recommendation for Preferred Network

Overall model results did not indicate that grade separations result in marked improvements in network performance. In addition, grade separation in this area may be considered contrary to the people-oriented vision for the future of Tysons. The following recommendations are offered:

- Grade separation along Route 7 did not provide an overall benefit for the Tysons area, but rather attracted more through trips.
- Grade separation at Route 123/International Drive, which is included in the current Comprehensive Plan, is recommended for carrying forward into the Preferred

Network for further testing. The high demand at this intersection could warrant grade separation at this location.

- The other grade separation options along Route 123 are not recommended for inclusion in the Preferred Network. These crossings, at Scotts Crossing/Colshire Drive and at Old Meadow Drive, interfere with the grid of streets and restrict access for this area. Although these grade separations may contribute to improved speeds along Route 123 in their vicinity, they could decrease accessibility to the proposed grid network and hinder circulation for both motorized and non-motorized modes.

■ Transit Circulators

A series of four transit circulators was tested in the advanced networks. These circulators connect most of Tysons with four Metrorail stations and target retail and other non-work trips. For Network 1, it was assumed that the circulators would be buses operating in mixed traffic. This is similar to the D.C. Circulator recently implemented in Washington, D.C. For Network 2, it was assumed that the circulators operated in dedicated right-of-way and are land use “form-giving.” For illustration purposes, this was assumed to be a streetcar or light rail system operating at grade. These circulators would still encounter delays at intersections.

In all future networks there were additional other bus routes that add circulation in the Tysons area, provide feeder service into the Metro stations, and connect Tysons to adjoining communities and to other parts of the County and the region. These services are part of the Constrained Long Range Plan, were included in the Base Case network, and are recommended for retention in the Preferred Network.

Recommendation for Preferred Network

The transit circulator alignments that were used in both Network 1 and Network 2 were strictly for testing purposes. Careful consideration and study would be needed before any alignment or type of circulator is recommended for the Comprehensive Plan. It may be appropriate to recommend a set of parameters for the establishment of transit circulators in Tysons Corner rather than to attempt to set a specific alignment. For the Preferred Network, it is recommended that the transit circulator concept on a dedicated right-of-way be carried forward. It should be recognized that implementation of the circulators will be phased and that a dedicated right-of-way may only be necessary or possible for portions of the circulator routes.

Transportation

- Consultant Draft Preferred Concept for Discussion with the Task Force on April 14 and 15

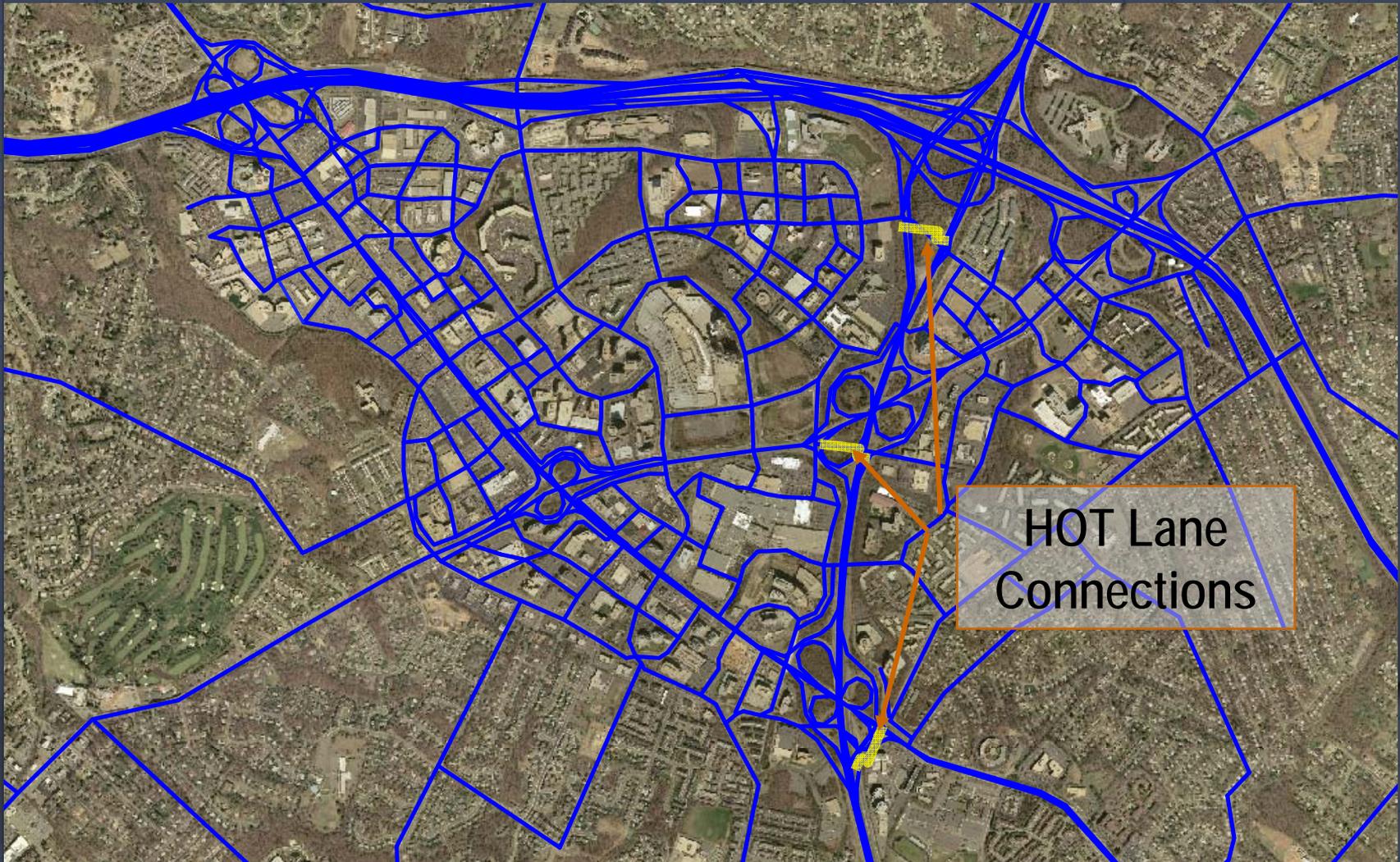


Draft Preferred Concept Metrorail Extension through Tysons



Draft Preferred Concept

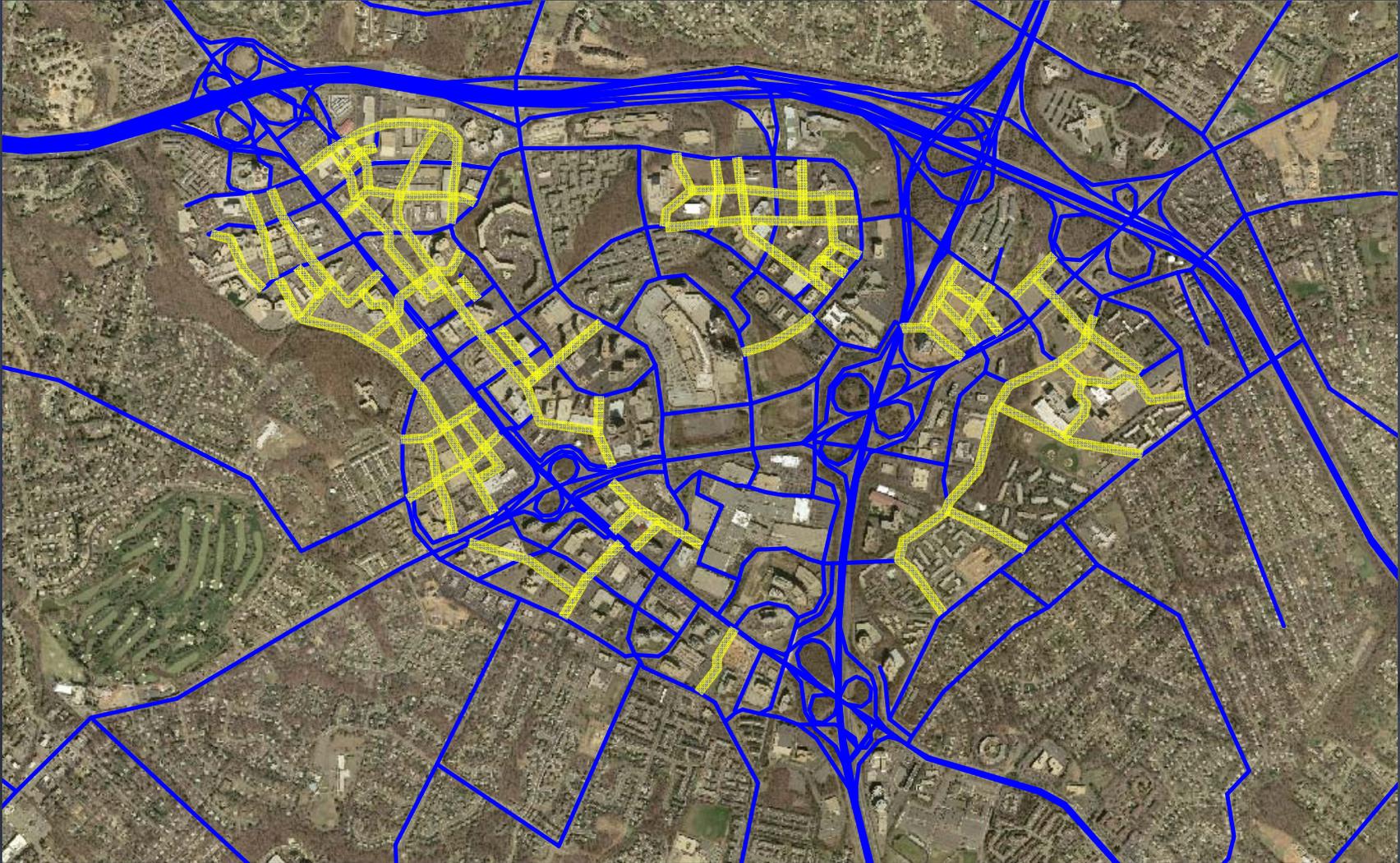
HOT Lane Connections



HOT Lane
Connections

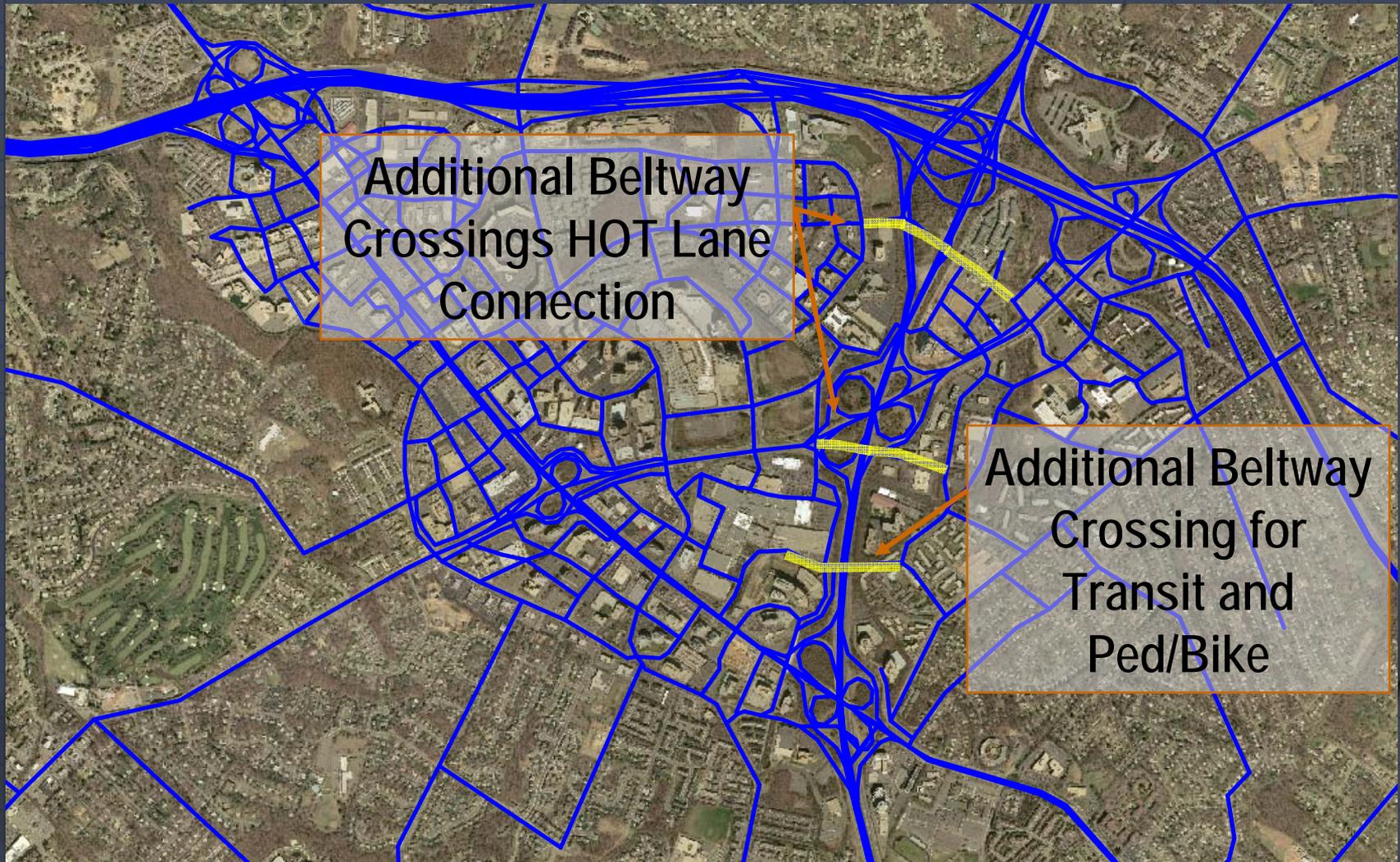


Draft Preferred Concept Grid of Streets (conceptual)

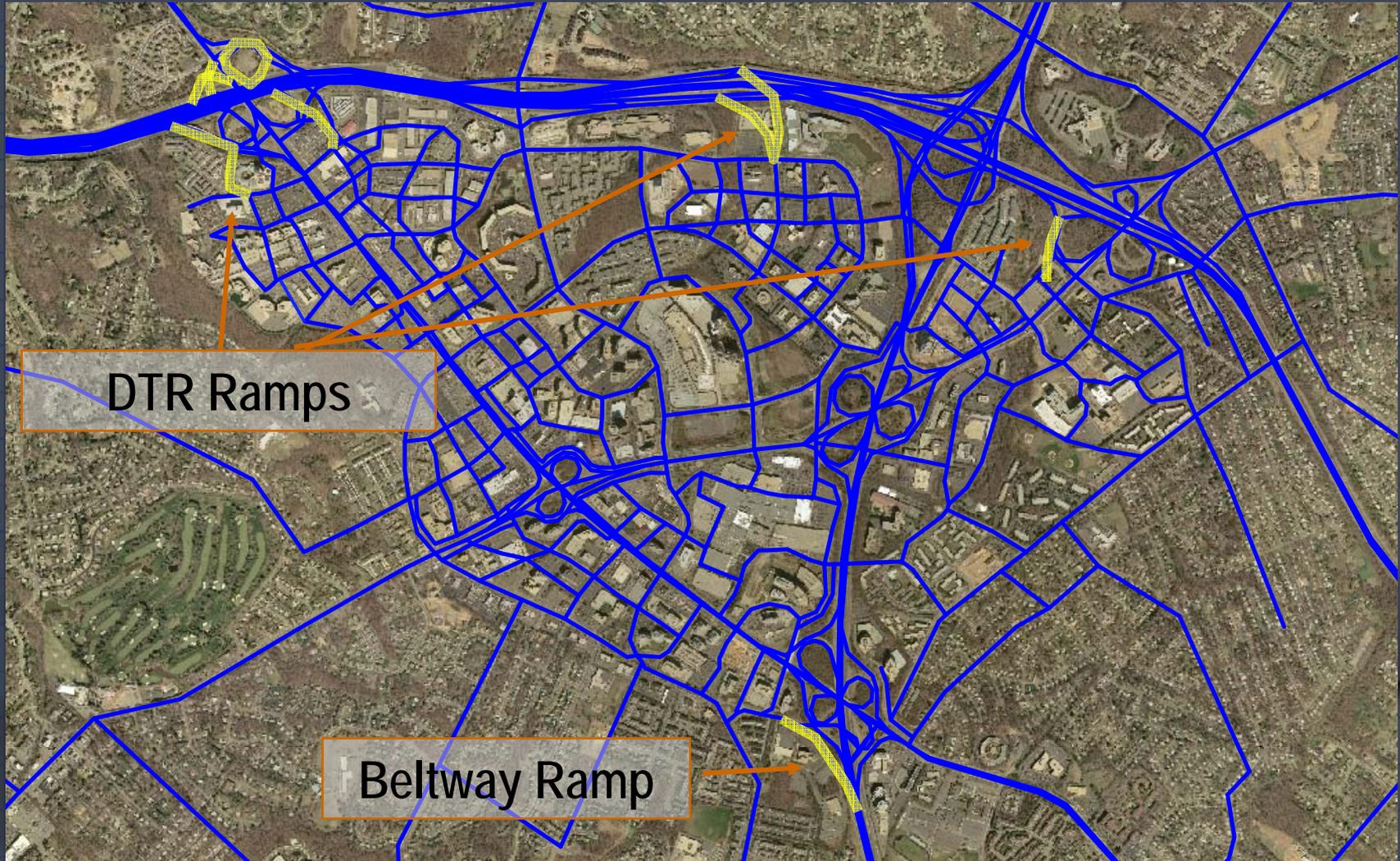


Draft Preferred Concept

Beltway Crossings



Draft Preferred Concept Highway Ramps

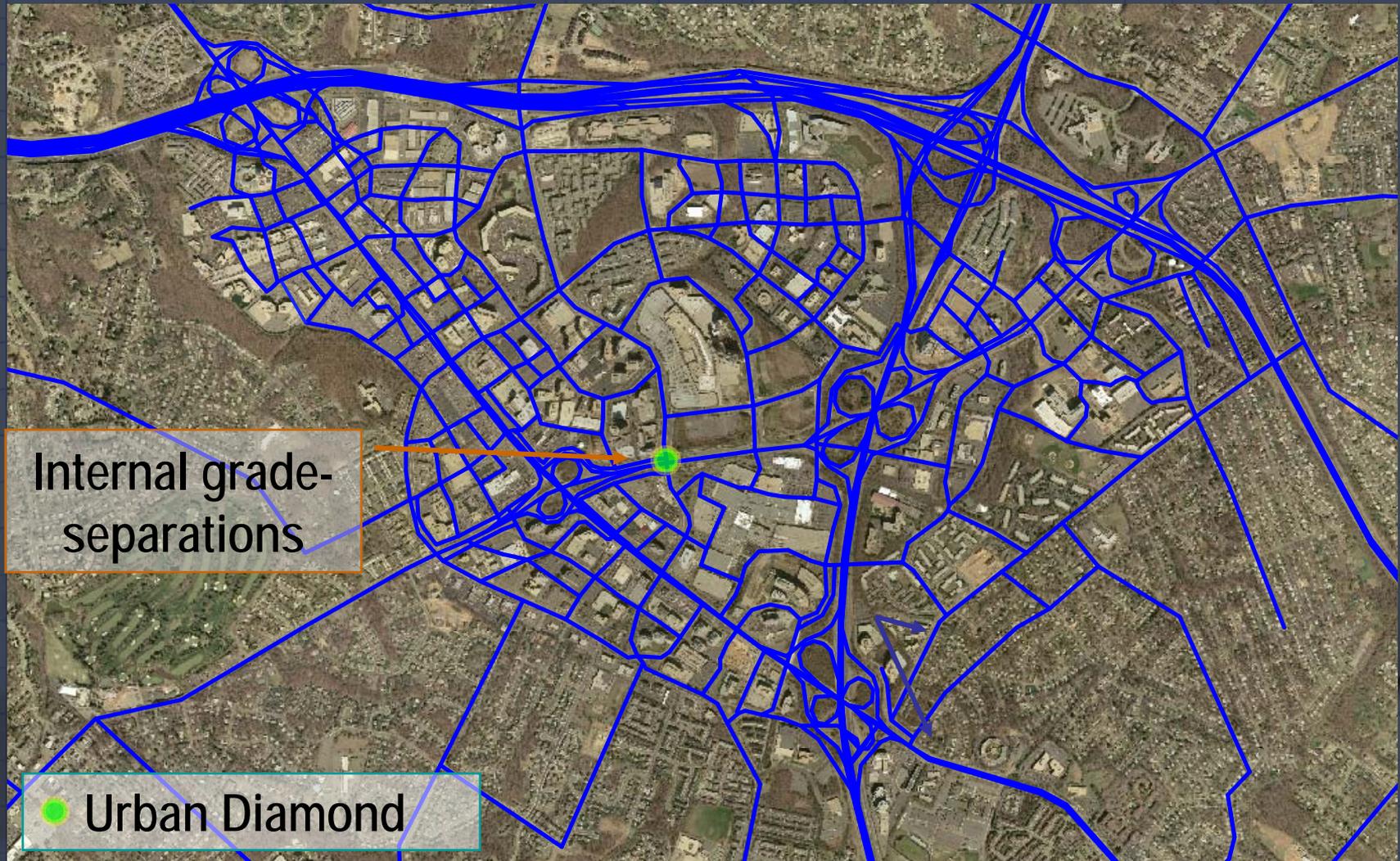


DTR Ramps

Beltway Ramp



Draft Preferred Concept Grade Separations



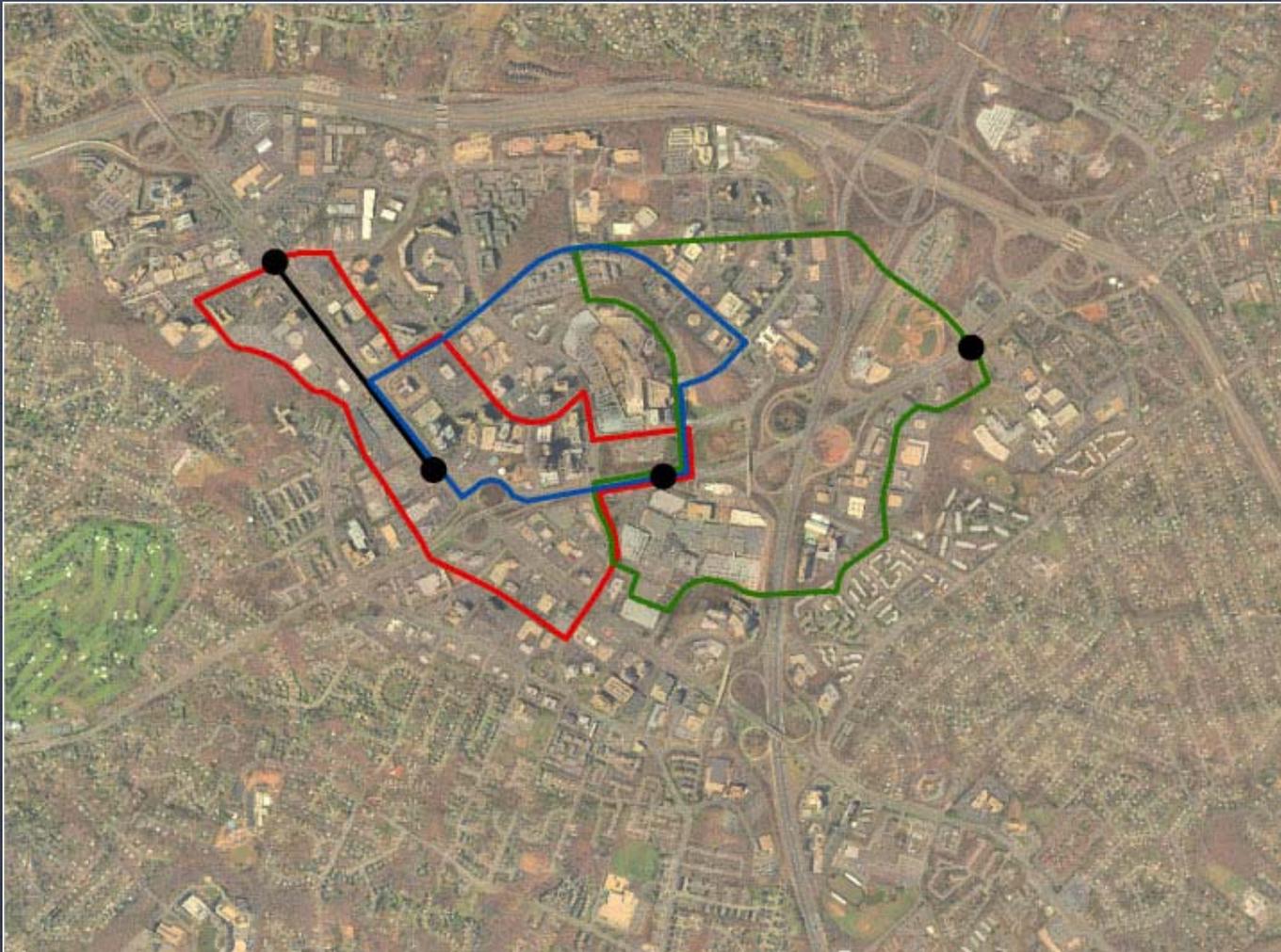
Internal grade-separations

Urban Diamond



Draft Preferred Concept

Transit Circulator(s) (Dedicated ROW)



(CONCEPT FOR TESTING PURPOSES)



Draft Preferred Concept Transit/TDM/Parking Management



Draft Preferred Concept

Summary of network to be tested

Element	In Network
Metrorail extension through Tysons Corner	✓
Beltway HOT Lane improvements	✓
Grid of streets	✓
Additional ramps to Beltway and Toll Road	✓
Grade separation at Route 123 and International Drive	✓
Transit Circulator(s) (dedicated right-of-way)	✓
Enhanced TDM and parking management	✓

